The policies, requirements, course offerings, schedules, activities, tuition, fees, and calendar of the school and its departments and programs set forth in this Bulletin are subject to change without notice at any time at the sole discretion of the administration. Such changes may be of any nature, including, but not limited to, the elimination of the school or college (including NYU Shanghai), programs, classes, or activities; the relocation of or modification of the content of any of the foregoing; and the cancellation of scheduled classes or other academic activities.

Payment of tuition or attendance at any classes shall constitute a student’s acceptance of policies in this Bulletin and the administration’s rights as set forth in the above paragraph.
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Part I
Introduction and Overview
NYU Shanghai is China’s first Sino-US research university and the third degree-granting campus of the NYU Global Network. We were founded in 2012 by New York University and East China Normal University with the support of the city of Shanghai and the district of Pudong.

NYU Shanghai seeks to cultivate globally-minded graduates through innovative teaching, world-class research, and a commitment to public service.

Our student body currently consists of nearly 2,000 undergraduate and graduate students, half of whom are from China. Students from the United States and some 70 other countries represent the other half. Our faculty of renowned scholars, innovators, and educators are recruited from the world’s best research universities.

The NYU Shanghai Vision
NYU Shanghai exemplifies the highest ideals of contemporary higher education by uniting the intellectual resources of New York University’s global network with the multidimensional greatness of China. It guides students toward academic and moral excellence, preparing them for leadership in all walks of life, and it contributes to the endless quest for new insights into the human condition and the natural world.
Values
NYU Shanghai operates in accord with the values of curiosity, rigor, integrity, respect, harmony, responsibility, and deep engagement with all humanity.

Mission
In teaching, NYU Shanghai aspires to prepare its students for lives of discovery, satisfaction and contribution. They will study with superb teachers who nurture their capacity for original, rigorous, and critical thinking, and with diverse and intellectually gifted classmates. They will pursue a liberal education in the humanities, social sciences, natural sciences, and mathematics. They will immerse themselves in English, the language of international communication. They will master the skills of cross-cultural effectiveness in a community where half are from China and half are from other lands. They will reflect upon the role that great cities play in human progress, and upon the interdependent relationship between China and the rest of the world.

In research, NYU Shanghai aspires to produce original, rigorous, and important insights across a broad set of academic domains. Such insights do more than extend existing knowledge in predictable ways; they provide fresh understanding that is fully consistent with our observations and at the same time promise to have a significant influence on the thinking of others.

In public service, NYU Shanghai aspires to promote healthy development within the many communities it inhabits. It strives to be a responsible actor in the individual lives of students, teachers, and staff; in the local neighborhoods that surround its campus; in the district of Pudong, the city of Shanghai, and the nation of China; in East China Normal University; in New York University; in the interdependent society of humankind; and in a fully global ecosystem.

Research at NYU Shanghai
NYU Shanghai continues in the great tradition of universities that combine world-class research with exceptional teaching. Research Institutes are established in the following areas: Center for Applied Social and Economic Research, Center for Business Education and Research, Center for Data Science and Artificial Intelligence, Center for Global Health Equity, NYU-ECNU Institute of Physics at NYU Shanghai, Volatility Institute at NYU Shanghai, NYU-ECNU Institute of Brain and Cognitive Science at NYU Shanghai, NYU-ECNU Center for Computational Chemistry at NYU Shanghai, Center for Global Asia at NYU Shanghai, NYU-ECNU Institute of Mathematical Sciences at NYU Shanghai, and NYU-ECNU Institute for Social Development at NYU Shanghai. Both graduate and undergraduate students at NYU Shanghai will have the opportunity to participate in research opportunities. For more information, consult the Research at NYU Shanghai website (https://research.shanghai.nyu.edu/).
The NYU Shanghai academic experience is characterized by rigor, a global perspective, and a strong foundation in the liberal arts and sciences. Several distinct features define the NYU Shanghai approach and make it unique:

**A Truly Innovative Core Curriculum**
As our world evolves, education needs to evolve to meet the needs of 21st century students. The NYU Shanghai core curriculum is defined by a global orientation. Students explore social and cultural foundations through courses that span cultures and contexts, both Chinese and international. Writing and language courses develop students’ communication skills in both English and Chinese. Mathematics and science are a part of every student’s education, as are courses which introduce or strengthen a student’s understanding of algorithmic thinking.

**Playing to Our Strengths**
NYU Shanghai has carefully developed a set of majors and specializations that capitalize not just on the world-class strength of NYU faculty, departments, and programs, but also on the limitless possibilities that Shanghai provides.

**PARTNERS**

**East China Normal University**
ECNU is a high-level normal university founded in October 1951. The university is made up of 19 full-time schools and colleges, two unconventional (nontraditional distance learning and continuing education) colleges and five advanced research institutes, with 58 departments offering 70 undergraduate programs. It has over 4,000 faculty and staff and more than 28,000 students.

**Shanghai Municipal Education Commission**
The Shanghai Municipal Education Commission (SMEC) is responsible for determining the local policies and direction of the educational system in Shanghai.

**Pudong New Area Government**
Since the beginning of its development in 1990 when plans were first announced, Pudong has become a major economic development zone and has emerged as China’s financial and commercial hub.

**WHERE WE ARE**

**Campus**
NYU Shanghai will spend the Fall 2022 semester at our current location on Century Avenue and will move to our new Qiantan Campus during the Spring 2023 semester.

**Century Avenue Academic Building**
The NYU Shanghai academic building located on Century Avenue in Pudong is surrounded by bustling activity, a lively community, and some of the most iconic buildings in the world—all right in the heart of a thriving economy and Shanghai’s commercial center.

Fifteen stories tall, with two additional levels underground. It includes an expansive library, which will house an extensive physical and electronic collection with access to NYU’s global library resources; a 300-seat auditorium; a 150-person colloquium space; a theater, music, and arts hall; and kitchen and dining facilities. Also generously equipped with classrooms capable of accommodating varying class sizes, dedicated floors for teaching and practical laboratories for various sciences, intimate study spaces, and faculty and administrative offices, the building functions as a campus unto itself and as the center of a thriving academic community. Wireless IT services and a robust IT infrastructure ensure that the building, and by extension, the students and faculty, remain fully connected to the NYU global network.

**Qiantan Campus**
NYU Shanghai’s new 114,000-square-meter campus is located in Pudong’s Qiantan neighborhood—also called The New Bund—and is speeding toward a Spring 2023 opening. Composed of four interlocked structures set around an academic quadrangle, the new campus—designed by Kohn Pedersen Fox and the Arcplus Institute of Shanghai Architectural Design & Research—will serve as not only an academic base for the NYU Shanghai community but also a cultural hub for the Qiantan district.

The 9-story campus was designed to express the university’s cosmopolitan spirit, integrating multiple architectural and cultural traditions; its courtyard integrates the Western ‘cloister’-inspired quadrangle and the Chinese Scholars’ Garden. Some facilities include a 5,000 square-meter library, 4,000-square-meter athletics space including a fitness center.
and two gymnasiums, a colloquium space, a black box theater, a state of the art recital hall, a 600-person auditorium, the NYU Shanghai Institute of Contemporary Arts with 600 square meters of exhibition space, a multi-level open space canteen that can seat several hundred diners, and classroom spaces that accommodate a range of students—from dozens to hundreds—with advanced digital equipment to meet the needs of online, offline and mixed-mode teaching.

Residence Halls

Fall 2022: NYU Shanghai students are housed in three towers of the Green Center complex, located in the Jinqiao area of Pudong. The Green Center complex is in a vibrant neighborhood with easy access to various local and international shops and restaurants and the Shanghai Metro. It takes approximately 25 minutes to travel to/from campus, via the NYU Shuttle Bus service.

Spring 2023: NYU Shanghai will move into three newly constructed apartment towers in the Houtan Area, located 2.3km from the Qiantan campus and a 10-minute drive to campus or 15-20 minute bike ride. The room types will transition to apartment style living where students will have their own private bathroom, kitchen, and living area. Students can select between single or double occupancy in a suite or single, double, and triple occupancy studios. The area will feature a community center with food and gym offerings, green space, and a vibrant community.

Students reside in single, double, or triple rooms with basic amenities and are supported by a Resident Assistant (RA) or peer mentor. By living alongside fellow students and RAs, students will form intimate living and learning communities allowing for a holistic education and an exchange of ideas to continue and flourish beyond the classroom.

Location

At NYU Shanghai, students receive the support, engage in the activities, and participate in the community that they would expect from any other university in the world—except they will have China as their canvas.

Just minutes away from the Century Avenue academic building, students will find a fully equipped athletics center that all NYU Shanghai students can use.

Beyond the walls of the residence hall are neighborhoods begging to be explored: the dazzling lights of the Bund, the winding labyrinthine passages of Taikang Lu, and the picturesque solitude of the Lujiazui Boardwalk are just some of the places where students can while away an afternoon, eat xiaolongbao, and take in the sights and sounds.

And beyond the city limits of Shanghai, the country of China is available: the Great Wall, the Lingyin Temple, the Forbidden City, the Chengdu Panda Reserve, and more. China is, after all, a country with a vast, varying geography and demography, and a history no longer confined to just the pages of a book, but completely within reach of all NYU Shanghai students.
Part II

Enrollment

Everything you need to know about:
- Registration, Advisement, and Counseling
- Degree Requirements
Registration, Academic Advisement, and Counseling
Registrar’s Office

The NYU Shanghai Registrar’s office provides academic services and information on registration throughout the year. Any student with a question or problem is invited to come to the Registrar’s office at Room 1049 for assistance or to view its website at shanghai.nyu.edu/academics/registration. Office hours are weekdays from 9:00 a.m. to 11:30 a.m. and 1:00 p.m. to 5:30 p.m.

Students can complete their initial registration through Albert, NYU’s online registration system, at home.nyu.edu. Students can also use Albert to make later adjustments to their schedule.

New Students

Newly admitted students receive detailed registration information a few weeks prior to orientation. New students meet with an academic advisor during orientation to discuss their class schedule and other academic questions.

Continuing Students

Students currently enrolled in NYU Shanghai register in November for the spring term and in April for the fall term. Before registering, students should plan a provisional schedule and put it in the “shopping cart” function of Albert. They should also discuss their program and courses with their advisor, who then clears them for registration. Students may use the “validate” function in Albert to validate all of the courses they would like to enroll in before their appointed registration time. At the appointed time or thereafter, students access Albert to finalize the course enrollment process. Students should complete registration by paying their tuition and fees. Online tuition statements and payment options are available through the Office of the Bursar. Students are also responsible for clearing other registration holds such as library holds.

Health Insurance and Immunization Policy

All full-time students must be in compliance with NYU Shanghai’s health insurance and immunization requirements. For pre registration immunization requirements, please see https://www.nyu.edu/students/health-and-wellness/next-stop-health-requirements/shanghai.html. If a student fails to comply, the student will not be allowed to register for classes until he or she is in full compliance. If the student does not receive clearance to register before the registration deadline for the semester, he or she will not be able to register and take classes until the next semester that they are in compliance. This policy includes first semester freshmen entering NYU Shanghai. The health insurance and immunization requirements of some study away sites and portal campuses may vary from those at NYU Shanghai. Students must be in compliance with those requirements during their semester abroad in order to be eligible for studying away at that site or campus.

Academic Advising

Academic advising is the process through which NYU Shanghai provides the necessary resources for students to make thoughtful choices in their academic studies. The primary purpose of academic advising is to assist students as they develop meaningful educational plans compatible with their life goals. Although the NYU Shanghai curriculum is well-defined, there will be opportunities, both within and beyond curricular constraints, for students to participate in courses and activities that support their academic and personal development.

While the ultimate responsibility for making decisions about life and educational plans rests with each individual student, academic advisors and faculty mentors assist students by suggesting options and by discussing possible outcomes of the choices they make. Students can expect that their academic advisors and faculty mentors in the majors will help them:

- Define academic goals and evaluate progress towards those goals;
- Understand academic policies and requirements, provide guidance during course selection, and provide help with identifying other meaningful educational experiences;
- Identify institutional and community support services for assistance if necessary;
- Monitor progress as they move through the undergraduate program.

Each semester, students are required to communicate with their academic advisor (and first and second year students to meet with their advisor) to review their registration plan for the following semester and ensure that they are making normal progress towards their degree. It is the individual student’s responsibility to make certain that he or she fulfills the requirements for graduation.
A first year advising program provides individual advising for new students entering in August. Each student is assigned an advisor who can provide information and support during the transition to college. The advisors serve as a liaison with other offices and can make referrals when appropriate. Advisors are therefore the best source for students to visit when they are unsure of where to go for help. Throughout the year, students needing additional assistance may also make an individual appointment with the Assistant Dean for Academic Affairs.

The Academic Resource Center

The Academic Resource Center (ARC) provides tutoring services to students looking to reach their highest academic potential. Students can schedule a meeting through WCOnline, or drop by the ARC, for the following:

- Individual and small-group tutoring in over 30 Math, Computer Science, Sciences, Business, Economics, Interactive Media Arts, and Chinese Language courses
- Individual writing, speaking, reading, and listening consultations at any stage of the learning process
- Academic coaching in areas such as critical reading, note-taking strategies, goals setting and time management
- Workshops on writing, close reading, presentation, time management, etc.

Students are also welcome to study on their own in the comfortable, supportive atmosphere of the Academic Resource Center.

Career Development Center

The NYU Shanghai Career Development Center (CDC) aims to provide comprehensive career guidance to the entire student body. The CDC collaborates with employers, alumni, faculty, other departments, and external organizations to provide a range of resources and opportunities for students to achieve personal and professional success.

Students may sign up for individualized appointments with a career coach throughout the year on Handshake. An appointment with a career coach can help students with any of the following topics:

- Identifying and exploring career interests;
- Setting professional goals and developing an individual timeline;
- Effectively searching for internships and jobs in a particular field;
- Editing resumes and cover letters;
- Participating in a mock interview;
- Performing assessments to identify strengths, skills and interests;
- Exploring pre-professional and graduate school options.

Besides coaching appointments, students may find many other ways to gain professional skills and build connections to expand their network. The CDC offers robust career-related programming during the academic year including; career speakers, industry panels, skills workshops, alumni mentor matching, internship grants, and much more. Some of the highlighted programmings include: Career Fairs, Career Kick Start Workshops, Distinguished Industry Speaker Series, NYU Executive Alumni Mentor Program, I AM LIMITLESS Conference, Industry Interest Groups, Global Governance and Chinese Culture Bootcamp, Social Impact Internship Grant. Students have access to a series of career online courses, a variety of useful digital platforms and resources in the CareerLab, which support their career development at different stages.

Experiential Learning

One defining characteristic of the NYU educational experience is the opportunity students have to apply their classroom learning to real-life experiences in a variety of professional and community service settings. Shanghai provides such opportunities in abundance, and NYU Shanghai takes full advantage of its location in one of the financial, cultural, scientific, and media capitals of the world.

Many different types of opportunities are available to students; some involve volunteerism on the part of a student and some may be paid positions. Depending on their professional goals, students may choose to pursue off-campus internships, community service positions, research projects, competitions, conferences, and many other opportunities. For the purpose of securing and making the most of such opportunities, students should consider the following guidance.

Internship Regulations

The visa requirements of the People's Republic of
China do not allow international students to hold off-campus part-time jobs or paid internships. International students who wish to participate in off-campus internships must follow the Internship Registration Process to ensure that the position meets legal criteria and is registered with the Chinese government. There are currently no restrictions on Chinese national students participating in paid positions.

Voluntary or Community Service

Certain organizations encourage students to work on a volunteer basis to gain experience and to provide needed assistance to the organization. This type of arrangement is common, for example, in government and not-for-profit organizations. Such internships are valued, sometimes even required, for admission to some professional schools, but NYU Shanghai awards no credit for them.

Community Engagement

NYU Shanghai supports community-engaged learning components in academic courses and facilitates academic service learning experiences. We encourage students to seek out opportunities during their college career to apply their academic learning to understanding real world needs and interacting with local communities in the city of Shanghai and beyond. These include faculty-led immersive learning trips and experiential learning opportunities that enhance academic study and research.

Preprofessional, Accelerated & Specialized Programs

Pre-Medical and Health Studies Program

It is important to understand that health-related pre-professional training does not require students to major in science or math. Students may elect to major in any discipline and complete the courses needed to apply for health-related professional schools in parallel. They should choose a disciplinary major that they will enjoy and in which they will excel. If they enjoy the sciences, choosing a major in those areas may be the right decision for them. If, however, they have other interests or talents, they will demonstrate their versatility and increase their chances of excelling by pursuing a major in their area of interest along with completing the pre-medical and health curriculum.

NYU Shanghai, like many American colleges and universities, does not offer pre-medical, pre-dental, or other pre-health majors. In fact, the best professional schools want, above all, students with a broad education who can think clearly, read critically, and write well.

Academic advisors and faculty mentors help students to explore their options, advise them about programs and appropriate course selection, and help them to present the best possible application to professional schools. Students should be aware that it is extremely difficult for applicants who are not U.S. citizens or permanent U.S. residents to gain admission to medical school in the U.S. Other health professional schools in the U.S. have more hospitable admissions policies, such as schools of dentistry and M.D./Ph.D. programs.

The following NYU courses are equivalent to the basic set of requirements most medical schools in the U.S. request. In general, most medical schools will expect applicants to have completed one year of biology, one year of physics, and two years of chemistry (through organic chemistry). However, specific medical schools may have additional requirements or modifications to those listed here. Students should carefully research the schools they are interested in for more information.

Suggested Courses for Application to Medical School:

- Foundations of Physics I & II Honors/General Physics I & II
- Foundations of Physics Lab I & Physics Lab II
- Foundations of Chemistry I & II
- Foundations of Chemistry I Lab & Chemistry II Lab
- Foundations of Biology I & II
- Foundations of Biology Lab
- Organic Chemistry I & II
- Biochemistry I

In addition, many schools expect students to have taken the following courses:

- Calculus
- One Statistics Course (e.g., Probability and Statistics, Biostatistics)
- Introduction to Psychology
- Introductory sociology course (e.g., Introduction to Sociology, Sociology of Medicine, Health & Society in a Global Context)
- Two writing courses. These courses cannot include Creative Writing and need to focus on
writing or interpreting advanced texts. They may be a combination of one or two Humanities or Global China Studies courses focused on writing.

**Pre-law Program**

Prospective law students are free to choose from the wide variety of courses offered at NYU Shanghai. NYU endorses the position of the Association of American Law Schools that a single “best” preparation for law school cannot be recommended. As a result, there is no prescribed pre-law curriculum.

Purpose of Pre-law Study: While NYU Shanghai considers the prescription of particular courses unwise, it does advise taking courses that require extensive reading, research, and writing. The Core Curriculum is an excellent beginning for pre-law students as it offers a rigorous and multidisciplinary foundation for advanced study in the humanities, social sciences, and natural sciences. No matter what one majors in, law schools value a well-rounded liberal arts education, so students should choose their electives wisely. For example, the precision of methodology and thought required of students in mathematics, computer science, logic, and the natural sciences will aid in the development of analytic skills, while a background in the behavioral sciences and the humanities (such as politics, economics, history, literature, philosophy, anthropology, and sociology) will offer a deeper understanding of human institutions and values, as well as opportunities for critical thinking and writing.

**3+2 Dual Bachelor’s Program (CS & Engineering/IMA & Engineering)**

Students will apply for admission to this program in their second year (spring semester) and complete their first three years at NYU Shanghai, pursuing a Computer Science (CS) or Interactive Media Arts (IMA) major. Coursework at NYU Shanghai will focus on CS or IMA major, core curriculum, and STEM requirements. The final two years are spent at NYU Tandon in Brooklyn, focusing on advanced engineering coursework. Students who complete this program will earn the following degrees: NYU Shanghai, NYU, Chinese degrees, and B.S. in Computer Engineering from NYU Tandon. The fifth year of study will require an additional year of tuition; the NYU Shanghai financial aid package will be extended to cover the fifth year of study. Interested students should work with their advisors to plan degree progress. Students may contact Dean Keith Ross (keithross@nyu.edu) for more information.

**Counseling**

**Student Health Center**

The Student Health Center is available for all students and no appointment is necessary. Counseling services are free on a voluntary basis for any student enrolled in NYU Shanghai. When necessary, medication and outside referrals are available. All conversations are kept strictly confidential. The Student Health Center wellness counselors provide health-related advice and assistance in workshops, as well as in group and individual counseling.

The social and emotional conflicts that occur in a person’s life occasionally prevent an individual from functioning optimally. Concerns about interpersonal relationships, poor grades or other academic problems, feelings of inadequacy, anxiety, loneliness, sexual problems, eating disorders, substance abuse, and family and/or marriage conflicts are difficulties any individual might encounter. Wellness counselors provide an atmosphere where personal concerns can be examined and discussed freely and confidentially.

The Student Health Center at NYU Shanghai is committed to promoting a safe, informed, healthy and happy university community, by providing an array of professional services tailored to support our student’s needs during their university life at NYU Shanghai. The Student Health Center is located on the 6th floor of the academic building and is open Monday to Friday 8:30 a.m. - 5:30 p.m. The Center is staffed by highly trained professionals who are focused on supporting the needs of students.

The Student Health Center’s programs address the issues impacting students from a physical, emotional and health knowledge perspective and provide activities and resources that empower the students to achieve their academic potential.

The transition to adulthood and the navigation of college life presents wonderful opportunities, but can sometimes cause stress and varying emotions. We are also mindful of the great opportunities and added challenges of being a student in a mega city like Shanghai.
The Student Health Center provides medical and counseling support and promotes health knowledge through skills focused training and learning workshops in a warm and welcoming environment. All health services are confidential and offered to students free of charge. Walking-in hours and professional counseling appointments are offered to all students.

The Wellness Exchange is a 24 hour counseling hotline - all students can call for support. Tel: 021 2059 9999

**Students with Disabilities**

NYU is committed to providing equal educational opportunity and participation for students with disabilities. It is NYU Shanghai’s policy that no qualified student with a qualified disability be excluded from participating in any NYU Shanghai program or activity, denied the benefits of any NYU Shanghai program or activity, or otherwise subjected to discrimination with regard to any NYU Shanghai program or activity.

The Moses Center for Student Accessibility in New York determines qualified disability status and assists students in obtaining appropriate accommodations and services. The Moses Center operates according to an Independent Living Philosophy and strives in its policies and practices to empower each student to become as independent as possible. Their services are designed to encourage independence, backed by a strong system of support.

Students who need a reasonable accommodation based on a qualified disability are required to register with the Moses Center for assistance. They should contact shanghai.academicaccommodations@nyu.edu with any questions about registering.
NYU Shanghai confers the following degrees on candidates recommended by the faculty of the majors and approved by the trustees of New York University:

**Bachelor of Arts (B.A.)**
- Global China Studies
- Economics
- Humanities
- Social Science

**Bachelor of Science (B.S.)**
- Biology
- Business and Finance
- Business and Marketing
- Chemistry
- Computer Systems Engineering
- Computer Science
- Data Science
- Electrical and Systems Engineering
- Interactive Media Arts
- Interactive Media and Business
- Honors Mathematics
- Mathematics
- Neural Science
- Physics
The general degree requirements are the same for the B.A. and the B.S..

To be eligible for the bachelor’s degree, students must complete 128 credits with a cumulative grade point average of at least 2.0. Within these, students must fulfill the requirements of both a major and the core curriculum.

The degree requirements to be fulfilled are those in effect during the term of the student’s first registration in NYU Shanghai. Registration in another division of NYU does not constitute registration in NYU Shanghai. Students may petition to follow the graduation requirements of a later cohort but must abide by all of the graduation requirements of the later cohort and may lose requirements (but not credits) earned for courses which meet requirements for the earlier cohort but not for the later one.

Readmitted students must fulfill the requirements as listed in the Bulletin published during the year of their readmission, unless their readmission letter states otherwise.

In very exceptional cases, a student may petition the Academic Standards Committee for approval of a change in the requirements as stated in the Bulletin.

Conferring of Degrees

Degrees are conferred in September, January, and May. The NYU Shanghai graduation ceremony occurs in May and the formal conferring of degrees takes place annually at Commencement in May.

All graduated students receive: a New York University diploma (issued by New York University), a NYU Shanghai diploma (issued by Shanghai New York University), and a NYU Shanghai graduation certificate (from the Ministry of Education of the PRC).

The Major

Major requirements, varying from subject to subject, are specified in the sections devoted to the course listings of individual majors. Generally, one-third to one half of the total credits are earned in the major concentration.

Every student must complete a major with a cumulative grade point average in the major of at least 2.0. At least one-half of the courses as well as one-half of the credits used to complete the major must be taken in the disciplinary area. A student may not register for courses in the major outside of NYU. The student must be approved as a major and must review his or her program with an academic advisor each term.

Course offerings are subject to the availability of faculty. Therefore, it is not possible to guarantee that any particular course listed will be offered in a particular academic year. If failure to offer a course in a student’s approved minor will delay their graduation, they should consult with their advisor to consider available options.

Declaration

Students should discuss their major plans with their advisors. It is best to concentrate on completing breadth and general education requirements in the first two years since interest in majors may change as students take classes in different disciplines and changing majors may delay graduation for some students.

Students may declare a major prior to registration for the next semester if they are registered for enough credits in the current semester so that at the end of it they will have completed at least 32 credits (typically when registering for fall of their second year). They must have a final grade of C, or current semester midterm grade of B, or higher in a designated prerequisite course for that major.

Students must declare a major prior to registration for the next semester if they are registered for enough credits in the current semester so that at the end of it they will have completed 64 credits (typically registering for fall of their third year). They must have a final grade of C, or current semester midterm grade of B, or higher in a designated prerequisite course for that major.

Time Limit

All requirements for a degree at NYU Shanghai must be met within a period of eight years from the date of matriculation. For students who are re-admitted to NYU Shanghai, the length of time is proportionately reduced.

Residence Requirement

All coursework used to satisfy the 128-credit degree requirement must be completed in the NYU network. The courses used to complete the major or the minor must be taken in that disciplinary area.
## Prerequisite Courses for Declaring a Major

<table>
<thead>
<tr>
<th>Major</th>
<th>Final grade of C/current semester midterm grade of B or higher in:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>Foundations of Biology I</td>
</tr>
<tr>
<td>Business and Finance</td>
<td>Statistics for Business and Economics</td>
</tr>
<tr>
<td>Business and Marketing</td>
<td>Statistics for Business and Economics</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Foundations of Chemistry II</td>
</tr>
<tr>
<td>Computer Science</td>
<td>Introduction to Computer Programming OR Introduction to Computer and Data Science + Calculus</td>
</tr>
<tr>
<td>Computer Systems Engineering</td>
<td>Calculus + Digital Logic OR Circuits</td>
</tr>
<tr>
<td>Data Science</td>
<td>Introduction to Computer Programming OR Introduction to Computer and Data Science + Calculus</td>
</tr>
<tr>
<td>Economics</td>
<td>Microeconomics</td>
</tr>
<tr>
<td>Electrical and Systems Engineering</td>
<td>Calculus + Digital Logic OR Circuits</td>
</tr>
<tr>
<td>Global China Studies</td>
<td>Any required Global China Studies course</td>
</tr>
<tr>
<td>Honors Mathematics</td>
<td>Analysis I + Honors Linear Algebra II [Both must be completed, not in progress] + Cumulative GPA 3.65 or higher in all classes and in Math classes</td>
</tr>
<tr>
<td>Humanities</td>
<td>Global Perspective on Society</td>
</tr>
<tr>
<td>Interactive Media Arts</td>
<td>Interaction Lab OR Communications Lab OR Application Lab OR Creative Coding Lab</td>
</tr>
<tr>
<td>Interactive Media and Business</td>
<td>Application Lab + Principles of Financial Accounting OR Economics of Global Business</td>
</tr>
<tr>
<td>Mathematics</td>
<td>Multivariable Calculus</td>
</tr>
<tr>
<td>Neural Science</td>
<td>Foundations of Biology I</td>
</tr>
<tr>
<td>Physics</td>
<td>Foundations of Physics II</td>
</tr>
<tr>
<td>Social Science</td>
<td>Social Science foundational course</td>
</tr>
</tbody>
</table>
Double Major

Students may attempt a double (second) major. The same requirements, including the maintenance of a minimum grade point average of 2.0 in the major, apply to the second major as to the first. In some cases, courses may be applicable to both majors but no more than two major courses may be approved for double counting unless otherwise specified in the major section of the Bulletin.

Students should consult with their advisor before attempting a double major as the requirements of the first major and the second limit the options for students to pursue varied intellectual interests. It is also difficult to complete two majors in the standard 128 credits. Requirements for completing a major as a double major are the same as detailed for the major requirements.

Core Curriculum classes do not count against double counting limits to fill major or minor requirements, but no single course may be used to meet more than two requirements.

The second major is declared the same way as the first but students do not receive priority in enrolling in second major classes before their last semester. Therefore, the ability to satisfy the requirements for an additional major cannot be guaranteed for any student and will be based upon course availability and the time that the student is willing to invest to satisfy all of the requirements of the additional major. In some cases, pursuing a double major will require a delay in graduation and/or limit study away opportunities.

Requirements for Minors

Students may minor in subjects outside of their major. A minor in a secondary subject enables a student to acquire a useful understanding of concepts and analysis without the same degree of coverage as would be obtained in a major. A grade of C or better is required for a course to be counted toward a minor. If a student fails a course required for the minor, the course must be retaken at NYU; a course taken outside the University will not normally be allowed to substitute for a minor requirement. No course for the minor may be taken as pass/fail. Students may use Core Curriculum classes to fill minor requirements but at least 12 credits of the minor must be unique to the minor, meaning that it is not double-counted with any other major, minor, or core requirement.

Additionally, no single course may be used to meet more than two requirements.

Regulations Pertaining to both Major and Minor

The major and minor requirements to be followed are those stated in the major sections of the Bulletin in effect during the semester of the student’s first registration in NYU Shanghai. A student may petition through their advisor to follow major graduation requirements as set out in a Bulletin from a subsequent year after their first semester of registration. If approved, they must meet those requirements as outlined in that edition of the Bulletin. Any courses they may have completed, or complete, which were required under the old major requirements but not under the new will be counted as general elective rather than major credit.

No credit toward the major or minor is granted for grades of C- or lower, although such grades will be computed into the grade point average of the major or the minor, as well as into the cumulative grade point average.

No course to be counted toward the major or minor may be taken on a Pass/Fail basis. (See “Pass/Fail Option” under Academic Policies in this Bulletin.)

In order to ensure that students do not have to compete for access to their required courses, registration priority is given to students who are registering for courses in their primary major. Although the university encourages the exploration of other disciplines, access to courses outside a student’s primary major (including those courses that fulfill requirements for an additional major, minor, etc.) is on a space-available basis and is not guaranteed.
Part III

Standards and Policies

Everything you need to know about:
- Academic Policies
- Placement Examinations, Degree Progress, and Transcripts
- Academic Standards and Discipline
- University Policies and Campus Safety
- Honors and Awards
Academic Policies

- Courses
- Credits
- Examinations
- Grades
- Leaves
The programs and courses offered at NYU Shanghai are designed for students who attend classes offered on a full-time basis. A full-time schedule normally consists of 16 credits per term, or 32 credits per year, which enables a student to complete the entire program of 128 credits in four years. Minimal full-time status entails completing at least 12 credits per term, or 24 credits per year. Students who wish to attend part-time should obtain permission from the Office of the Associate Provost for Academic Affairs prior to the start of the semester. Such status will be granted only when there is good and sufficient reason for part-time study. Failure to complete a minimum of 24 credits per year jeopardizes a student’s full-time status and his or her eligibility to receive financial aid. Students may enroll in fewer than 12 credits in their final semester but still maintain full-time status if they are enrolled in the course(s) that they need to graduate that semester and have applied for degree conferral that term.

Students in good academic standing may register for more than 18 credits per term after their first year with the clearance of their academic advisor and approval of the Assistant Dean for Academic Affairs.

There are additional per credit costs for each credit above 18 as well as an additional registration fee and added costs for textbooks and materials in a given semester.

**Change of Program**

To make any changes in their program, including dropping or adding courses given in other divisions of NYU, students must access the Albert Student Center.

**Adding Courses**

The deadline for the adding of a course or a section is the end of the second week of the semester. The deadline applies to any course added by an NYU Shanghai student and to any NYU Shanghai course added by students from other divisions. The adding of any course or section after the end of the second week is generally allowed only when the student is changing levels within a discipline—for example, from a Chinese or mathematics course to a higher- or lower-level course in the same discipline. The changing of levels is permitted only with the written approval of the instructor, any other relevant administrators, and the student’s advisor.

**Dropping or Withdrawing from Courses**

Students are expected to maintain a full-time program as described above and are unable to reduce their program to part-time status if enrolled full-time at the beginning of the semester. Occasionally, they may drop or withdraw from a course if, because of reasons beyond their control, they cannot continue. Withdrawing from a full semester course during the first two weeks of the term is treated as a drop and will not appear on the transcript. Those courses withdrawn from during the third week through the ninth week of the term will be recorded with a grade of W. After the semester withdrawal deadline, no one may withdraw from a course except in cases of full semester withdrawal as recommended by the Student Health Center or Moses Center for Student Accessibility and accompanied by appropriate documentation. Students who are ill or have other serious personal circumstances should contact their advisor.

**Complete Withdrawals**

Students who wish to withdraw from all of their courses must meet and discuss their plans with their advisor, complete the required forms, and get the approval of the Associate Provost for Academic Affairs.

A student who withdraws officially from all courses in a term may register for the following term, subject to any limitations attached to their withdrawal approval. If the student is unable to attend NYU Shanghai during the term following the withdrawal, he or she should request a leave of absence from their academic advisor. For more information, see next page under “Attendance.”

**Auditing**

Matriculated students in NYU Shanghai may audit (i.e., attend lectures without intending to receive credit) any course in NYU Shanghai with the consent of, and under the conditions established by, the instructor and the major. Auditors count against the enrollment cap for a course and may not preempt space required for students registering for a letter grade.
Courses cannot be audited as a means of satisfying requirements for an incomplete grade or as a means of changing a previous grade. World Language classes may not be audited. Students may not audit classes during their first year of enrollment at NYU Shanghai.

Students seeking to audit a course must register as an auditor by the end of the add/drop period and audited courses will appear on the student’s official transcript. Special (non-degree) students may not audit courses. Once a course is declared as an audited course it may not be changed to a letter grade or pass/fail course. If the credit value of the audited course causes the total number of credits to exceed 18, an overload petition is required and overload charges apply.

Students that officially audit a course are expected to complete the work that is agreed upon by the instructor. There is no credit given for the course, though the course would appear on the student’s record with a mark of “R” for Registered Auditor. If the student does not comply with the stated expectations, then the instructor could issue a “F” grade and that mark would be calculated into the student’s overall GPA.

### Attendance

Although the administration of NYU Shanghai does not supervise attendance of classes, it supports the standards imposed by instructors.

When students are ill, they are expected to notify professors in advance of class, if at all possible. If the instructor determines that it is an excused absence then the student should negotiate with the professor the time and place for make-up of assignments, tests and/or examinations missed. Students who have been seriously ill, hospitalized and/or miss more than a week of classes due to medical reasons, should contact their academic advisor to discuss appropriate options for missed classes and/or coursework.

A student with an injury or medical condition that requires ongoing accommodations (temporary or permanent) should contact the NYU Moses Center for Student Accessibility (CSA). If an accommodation is recommended by the Moses Center, then Academic Affairs may communicate on behalf of students to advocate for excused absences/ extensions. Reasonable accommodations, considering the course objectives, student learning, and fair standards, are ultimately decided by the professor.

Students who, in the judgment of the instructor, have not substantially met the requirements of the course or who have been excessively absent are not considered to have withdrawn from the course if they remain on the roster and may be given the final grade of F.

### Religious Holidays and Attendance

NYU, as a nonsectarian institution, and NYU Shanghai, as a degree-granting campus of NYU, adhere to the general policy of including in its official calendar only certain legal holidays. However, it has also long been NYU policy that members of any religious group may, without penalty, absent themselves from classes when compliance with their religious obligations requires it. In 1988, the NYU University Senate affirmed this policy and passed a resolution that elaborated on it as follows:

1. Students who anticipate being absent because of any religious observance should, whenever possible, notify faculty in advance of such anticipated absence.
2. Whenever feasible, examinations and assignment deadlines should not be scheduled on religious holidays. Any student absent from class because of religious beliefs shall not be penalized for any class, examination, or assignment deadline missed on that day or days.
3. If examinations or assignment deadlines are scheduled, any student who is unable to attend class because of religious beliefs shall be given the opportunity to make up that day or days.
4. No adverse or prejudicial effects shall result to any student who avails himself or herself of the above provisions.

### Policy on Class Conduct

Students are expected to attend all scheduled classes unless the instructor explicitly informs the class that other ways of doing the work are acceptable. The action to be taken in regard to tardiness, absence from class or making up late work is the responsibility of the individual instructor; the instructor should consult with the
student’s academic advisor and the Assistant Dean for Academic Affairs if major action, such as dropping the student from the course, is being considered.

All classes will be held at their scheduled hour on days immediately before and after all holidays and recesses. Both faculty and students are expected to be present.

Students are permitted to be absent from classes to participate in authorized contests, conferences, and presentations, provided the following conditions are met:

- All work missed must be made up to the satisfaction of the instructor(s) concerned;
- No trip shall involve an absence of more than two days, excluding days when classes are not scheduled;
- The total number of days of absence shall not exceed six per sport or per organization annually;
- Each student will obtain an absence authorization signed by the Assistant Dean for Academic Affairs. The student will present this authorization to the instructor. This is not an excuse for work missed.

Technology affords many students access to portable devices including cell phones, PDAs, and laptops. It is expected that students will respect the wishes of faculty with regard to the use of electronic devices within the academic environment.

No student shall leave a scheduled exercise because of the absence of the instructor until a reasonable time has passed. By tradition and as a matter of courtesy, a student should wait 10 minutes before leaving.

**Authorized Contests, Conferences, and Presentations**

Authorized contests, conferences, and presentations are those approved by the Assistant Provost for Academic Affairs. Authorized contests are limited to athletic games and matches involving official NYU Shanghai sports teams and to students on the active team roster; and academic competitions sponsored by an NYU Shanghai Academic Dean and to students selected to represent NYU Shanghai at the competition. Authorized conferences are limited to conferences sponsored by an NYU Shanghai Academic Dean and to students selected by NYU Shanghai to attend the conference (this is in addition to any selection process that the conference might have). In some cases limited funding may be available to students selected to attend a conference. Funding is not available to attend conferences to which all qualified NYU Shanghai students did not have an opportunity to apply for selection. Academic Affairs only provides funding for academic conferences. Non-academic conferences, including those focusing on leadership, are sponsored through Student Life and do not allow students approved absences from classes. Authorized presentations are limited to those at forums sponsored by an NYU Shanghai Academic Dean and presenters to those approved by NYU Shanghai. In some cases limited funding will be available to students selected for a presentation.
Credit for Advanced Placement Examinations

NYU Shanghai does not assign credit for the Advanced Placement (AP) Program (College Entrance Examination Board), the International Baccalaureate (IB) Program, or the results of foreign maturity certificate examinations. In some cases students may be able to fulfill a core curriculum requirement based on their performance on one of these tests.

Credit for Courses at NYU Shanghai

To receive credit for a course, the student must register before attending, meet the requirements for attendance, and creditably complete all examinations and assignments prescribed by the instructor. Some majors also offer independent study for exceptional students.

Students receive credit for any course passed with at least a D or a P grade. Courses may not be used to meet major or minor requirements or as prerequisites for more advanced classes unless a grade of C or higher is earned. This means that grades of P or C- and lower may not be used to meet major or minor requirements or as a prerequisite for more advanced courses including in core curriculum sequences. Core courses must be taken graded on A-F scale and may satisfy the core requirement with grade of D or better.

Restrictions on Receiving Credit (Including Course Repeat Policy)

A student who has taken a course for credit or who has obtained a W in a course is permitted to repeat that course once. Students may not repeat more than two courses during their undergraduate careers. Students may not repeat courses in a designated sequence after taking more advanced courses. The majors determine the sequencing of courses. Students with questions regarding the repetition of courses or course sequences must consult their advisor. When a student repeats a course, the grades from both times the student took the course will be recorded on the transcript but only the credits from the second time the course is taken will be counted. Furthermore, the two grades (from the first and second times) will be averaged in the before calculated in the cumulative grade point average.

Credit for Courses at Other Schools and Divisions of New York University

NYU graduate courses may be taken with approval of the respective graduate program and NYU Shanghai undergraduate major and following the practices of that bulletin. Enrollment is dependent on availability and completion of any required prerequisites. If graduate courses are applied toward the completion of requirements for the baccalaureate degree, no advanced credit is typically allowed for them in the University’s graduate programs.

Students may take a total of 36 credits in other divisions of NYU, including any courses for particular minors approved by NYU Shanghai. Students seeking additional credits beyond the 36 credit limit must file a petition with the Office of Academic Affairs.

Please note that restrictions apply. For details, students must check with their advisor before registering for any courses in other divisions. If a course is not approved in advance, students will not receive credit for it. If such courses are taken at schools outside NYU, the credit will not transfer to NYU Shanghai.

Credits from any courses taken in NYU’s School of Professional Studies will not be counted toward major requirements, the GPA, or the minimum 128 credits required for graduation.

Credit for internet and online courses from other divisions or schools of NYU will not be counted toward the baccalaureate degree.

Credit for Transfer Students

Inquiries regarding transfer applications should be directed to NYU Shanghai Office of Undergraduate Admissions (shanghai.admissions@nyu.edu).

Credit for Non-NYU Study Abroad

Once admitted to NYU Shanghai, all courses counted toward the degree must be taken on campus or during an approved study abroad
semester at one of NYU’s degree-granting campuses, Global Academic Centers or exchange partners, including those they need or wish to take during the summer.

**Summer Session**

Students who elect to take summer courses for credits must take them on campus or at one of NYU’s Global Academic Centers, NYU New York, or NYU Abu Dhabi. Students who plan to take summer courses within the NYU Global Network need to get their course plan approved by their academic advisor for summer registration clearance before the appointed time.
Policies on Examinations

Preamble
The following policies represent an understanding between faculty and student concerning an important but often stressful period, especially at the conclusion of each academic semester and at mid-semester. There should be no expectation that the following points will cover every conceivable situation. The student should anticipate the demands of the exam schedule, plan accordingly and early, and be prepared. The faculty should recognize that the student is encumbered with many tightly orchestrated and intensive obligations during this period over which he or she has no control: expectations should be reasonably consistent with the number of course units and, of course, should be made known to the student well in advance of the final examination period, preferably as part of the course syllabus.

In order to help students plan their time and study optimally for examinations, this document lays out in some detail the policies regarding final and in-term examinations. Instructors are requested to provide notification of the major in-term examinations in the course syllabus. The final examination date is posted early in the semester. It is the responsibility of the student to give his or her instructor sufficient notice and to work with the instructor to reschedule examinations if this is needed.

Definitions

- NYU Shanghai’s official final examination period begins on the reading day immediately following the last day of classes and continues through the last day of scheduled final examinations, with the exception of reading day(s).
- Scheduled final examinations are those scheduled by the Registrar. An instructor may choose not to fix a schedule for final examination, but instead allow each student to choose the examination time; such exams are called self-scheduled examinations.
- Final examinations can either be comprehensive, covering all course materials, or non-comprehensive, covering only a part of the course.
- Major examinations during the semester are referred to here as in-term examinations.

In-term Examinations

In-term exams may only occur during regularly scheduled class hours. This means that exams may not run longer than the regular class period for the course and that instructors may not schedule alternative exam times. It is possible to administer an exam that takes longer than scheduled class times if the instructor divides the test into two parts and students take them over different class dates.

The only exception to the in-term testing policy is for students with registered academic accommodations that cause them to need additional time for tests.

Final Examinations

1. All scheduled final examinations are held at the end of the semester during NYU Shanghai’s official final examination period. The last day of a class is not normally used for a final examination. Comprehensive final examinations are not required for each course, but are given at the option of the instructor. The reading day and weekend preceding the examination days are not used for examination purposes of any kind, unless a student chooses (and the instructor agrees) to take a self-scheduled examination during this time. Non-comprehensive final examinations or final projects (but not both) are allowed during this final examination period only in courses that do not give a final comprehensive examination.

2. Instructors return all work assigned no later than the last regular day of classes in courses for which there is a final examination. In cases when this is not possible, an answer key, solution sets or equivalent feedback should be provided unless the final examination will not cover material in work that has not been returned.

3. No other coursework, including laboratory or studio work, will be due during the final examination period unless it is assigned in advance and in lieu of the course’s final examination. Regardless of whether there is a final examination in the course, no classes other than review sessions are held during the final examination period. Review sessions are scheduled for optimal attendance, and a
serious effort should be made to accommodate students who cannot attend. In appreciation of the time required to prepare for final examinations, no other examinations, portfolio reviews, critiques or juries shall be scheduled for the last class day of a course with a final examination.

4. Instructors do not exert or submit to pressures to move an examination so that students can leave earlier nor pressure students to take an examination on a reading day or weekend preceding the final examinations period.

5. No student is required to take more than two scheduled final examinations during a 24-hour period. A student who has more than two final examinations scheduled during a 24-hour period or has two final examinations scheduled at the same time should first contact the instructors of the courses for assistance in resolving conflicts. If the problem cannot be resolved by that means, the student should contact the Assistant Dean for Academic Affairs.

6. Students are expected to present themselves at the place assigned at the start of the examination; late arrival will reduce the total time a student has to complete the examination, unless the instructor’s course policy indicates otherwise. Instructors reserve the right to require attendance within a specific time period. Students who miss an examination with a reasonable excuse and wish to petition for a make-up final examination should check with the instructor.

7. Any student may review his or her corrected, graded final examination in the presence of an instructor or a teaching assistant. Any controversy arising from this review is dealt with in accordance with NYU Shanghai procedure for the appeal of grades and academic actions. A final examination that is not returned to a student will be kept available until the end of the next semester for review. In the event that the instructor or teaching assistant is not available for the review, the responsibility shall rest with the major leader of the instructor offering the course or his or her designee. Since instructors return all work assigned before the final examinations, they are not responsible for retaining unclaimed coursework.

8. Concerns related to a final examination, complaints about violations of the final examination policy or alterations of the final examination schedule should be directed to the Assistant Dean for Academic Affairs.

NYU Shanghai Student Guidelines for Taking Exams

NYU Shanghai has developed the guidelines below for in-class tests worth 10% or more of the final grade in a class so that students will share a uniform test-taking experience that creates a quiet, less stressful, and fair test site.

1. Tests that are worth more than 10% of the final grade will be held in a room or rooms that provide at least twice as many seats as students enrolled in the class.

2. Students follow an assigned seating chart for the test that randomizes the classroom and seating assignments for students. Students are seated in every other seat so that they are not in close proximity to others taking the same exam.

3. The tests are pre-marked with each student’s name and assigned seat.

4. Students should arrive at the classroom at least 5 minutes before the exam starts.

5. Students must leave their backpacks/purses/bags/laptops at the front of the room – taking with them to their seat only something to write with (no pencil cases are allowed). If other materials are permitted, the instructor will inform the proctors of specifically what is allowed.

6. Students must leave all hats, coats, and jackets at the front of the room as well. Students who normally wear scarfs for faith or cultural reasons may do so but must alter to expose ears.

7. An unlabeled bottle of water is permissible; food/gum/candy is not.

8. Any student who is NOT taking the exam should not be in the test room.

9. Proctors are not responsible for supplying any test-taking materials (pencils, calculators, etc.) to students who have arrived unprepared for the exam.
10. All mobile phones should be switched off and left at the front of the room, so that students do not have access to them during the exam. If a student is found with their mobile phone with them during the exam, this will be considered a violation of the exam guidelines.

11. A quiet test environment must be maintained. Students are not allowed to speak to each other (even to request to borrow a pencil from another student). If students need to speak, they should raise their hand and wait for the proctor to come over to them and help them with whatever question or problem they have.

12. The start time and finish time will be written on the board at the front of the room. The proctor should update the time remaining (in 15 minutes intervals) throughout the exam on the board so that students may gauge their progress and manage their time during the exam.

13. Any student arriving late will be permitted to take the exam, but they must finish at the prearranged time and will not be given any extra time.

14. Students must sit in their assigned seat with their named test. They have to show a proctor their NYU Shanghai University ID if asked.

15. Students in the wrong test room must go to the correct test room even if that means they start the test late.

16. Students cannot move their seat. There needs to be enough space between seats so that the purpose of the every other seat protocol is met.

17. Bathroom breaks are permitted only in what the proctor deems is an emergency. When permitted, the back-up/relief proctor will escort the student to and from the bathroom. When this is not possible, the proctor will note the time that the student left the exam room, and when they returned.

18. If a student finishes an exam early, they may leave the room once they have turned in their exam papers. They will not be readmitted once this occurs.

19. In the last 15 minutes of the exam, the remaining time left will be updated in 5 minute intervals.

20. Once time is up, the exam is finished and students must stop working. The proctor will make a note of individuals who did not stop working when told to and report this to the instructor.

21. All exam materials (answer sheets, scratch paper, test question paper) are to be collected by the proctor. Students should not leave the room with any test materials.

Penalties for Students Violating the Protocols

• The penalty for the first violation of test protocols (sitting in wrong seat, in possession of non-approved test taking materials, talking, failure to show their NYU Shanghai University ID when requested, etc.) is a letter grade reduction on exam.

• Additional violations or refusal to comply with protocols will lead to additional penalties.

• Test protocol penalties are independent of, and in addition to, penalties for academic integrity violations. Both types of penalties are applied in as confidential a manner as circumstances permit.

Makeup Examinations

When examinations are missed because of illness, students are expected to notify professors in advance of the exam, if at all possible. If the instructor grants an excused absence or if a student has a recommended accommodation for a makeup examination from the NYU Moses Center for Student Accessibility (see “Students With Disabilities” section), then the student must arrange a makeup examination with the professor prior to the last day of the semester. The time and place of any makeup examinations are set by the instructor or the major area head. If the student is unable to sit for a final examination during the semester and requires a grade of incomplete, see below policy under “grades” and “incompletes.”

Grades

Students may obtain their final grades for each semester on Albert.

The following symbols indicating grades are used: A, B, C, D, P, F, and W. The following symbol
indicates incomplete work: I. Only grades of A, B, C, D, or F earned in any NYU course while matriculated in NYU Shanghai, or earned in any of NYU Shanghai’s courses (courses suffixed by “-SH”) while matriculated in another division of NYU, are computed in the average. The following grades may be awarded: A, A-, B+, B, B-, C+, C, C-, D+, D, F. In general, A indicates excellent work, B indicates good work, C indicates satisfactory work, and D indicates passable work and is the lowest passing grade. F indicates failure. The weights assigned in computing the grade point average are as follows:

<table>
<thead>
<tr>
<th>Grades earned in Fall 2018 and Later</th>
<th>Quality Points</th>
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<tbody>
<tr>
<td>A</td>
<td>4.000</td>
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<tr>
<td>A-</td>
<td>3.667</td>
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<tr>
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<td>3.333</td>
</tr>
<tr>
<td>B</td>
<td>3.000</td>
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<tr>
<td>B-</td>
<td>2.667</td>
</tr>
<tr>
<td>C+</td>
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<tr>
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<tr>
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</tr>
<tr>
<td>F</td>
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</table>

<table>
<thead>
<tr>
<th>Grades Earned Prior to Fall 2018 and Earlier</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
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</tr>
<tr>
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<td>C+</td>
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</tr>
<tr>
<td>C-</td>
</tr>
<tr>
<td>D+</td>
</tr>
<tr>
<td>D</td>
</tr>
<tr>
<td>F</td>
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</tbody>
</table>

Courses for major, minor, or core requirements must be taken on an A-F grading scale. Courses may not be used to meet major or minor requirements or as prerequisites for more advanced classes unless a grade of C or higher is earned. This means that Grades of P, C- or lower may not be used to meet major or minor requirements or as a prerequisite for more advanced courses (see “Pass/Fail Option” for more details).

**Computing the Grade Point Average**

The grade point average can be obtained by determining the total of all grade points earned (quality points) and dividing that figure by the total number of credit hours completed (quality hours). For example: A student who has completed 8 points of A (4.0), 4 points of B (3.0), and 4 points of C (2.0) has a grade point average of 3.25. This is obtained by adding 8 (points of A) x 4.0 (point value of A), 4 (points of B) x 3.0 (point value of B), and 4 (points of C) x 2.0 (point value of C), which totals 52 (the total of all grade points earned), and then by dividing 52 by 16 (the total number of credit hours completed). This gives the grade point average of 3.25.

**Policies on Assigned Grades**

Once a final grade has been submitted by the instructor and recorded on the transcript, the final grade cannot be changed by turning in additional coursework.

To appeal an assigned grade (only final semester grades are assigned grades, midterm and individual assignment and paper grades are not appealable) the student should first consult with the instructor who assigned the grade to discuss the grading requirements for the course and how the grade was determined. If the student is not satisfied with the outcome of the discussion and wishes to appeal the grade further, a formal written appeal should be submitted to the Assistant Dean for Academic Affairs within one month of the date the grade was posted. An independent review of the grade will be undertaken. All of the student’s work will be eligible for review to clarify how the grade was determined and to ensure the grade is consistent with academic guidelines and policies. The result of the appeal may be that the grade is lowered, raised, or stays the same. The decision of Academic Affairs in matters related to a course grade is final.

In the case of a course that has been repeated, both grades are recorded on the transcript and averaged together to be computed in the grade point average.

The grades for courses taken abroad in one of NYU’s programs or at one of the exchange sites are recorded on the transcript and are also included in the grade point average. The grades for graduate courses taken at other divisions in the University are included in the grade point average, provided that permission to enroll is obtained prior to registration for the courses.
Not included in the undergraduate grade point average are grades for work done at institutions outside NYU’s global network.

**Grade of P**

The grade of P (Pass) indicates a passing grade (A, B, C, or D) in a course taken under the pass/fail option. It is also used to indicate non-graded courses. The grade of P is not computed in the average. The grade of F under the pass/fail option is computed in the average. For more information and procedures to obtain the pass/fail option, see end of this section under “Pass/Fail Option.”

**Grade of W**

The grade of W indicates an official withdrawal of the student from a course in good academic standing. Please see “Change of Program” and “Withdrawing from Courses” for information on the regulations and procedures for withdrawing officially from courses.

**Grade of I**

The grade of I (Incomplete) is a temporary grade that indicates that the student has, for good reason, completed all but a single requirement or a small amount of the course work, and that there is the possibility that the student will eventually pass the course when all of the requirements have been completed. A student must ask the instructor for a grade of I, clarify the remaining course requirements with the instructor, and receive approval from the Assistant Dean for Academic Affairs.

The Incomplete grade is not awarded automatically. It is not used when there is no possibility that the student will eventually pass the course. If the course work is not completed and a grade submitted by the course instructor before the statutory time for making up incompletes has elapsed, the temporary grade of I becomes an F or the default grade indicated by the instructor and is computed in the student’s grade point average.

**Grade Policy for Incompletes**

Grades of incomplete must be resolved by the end of the following matriculated academic semester (fall/ spring). Incomplete grades awarded by other NYU Schools/ programs follow those school-based policies.

NYU Shanghai follows the Office of Global Programs policy regarding incomplete grades and study away admission. Incomplete (I) grades on students’ transcript must be resolved before an admissions decision for study away can be made.

**Independent Study**

Some majors offer independent study courses for students with exceptional qualifications. In these courses, the work is planned specifically for each student. Independent studies should build on previous course work, not replace existing courses, and may not substitute for required major courses or required core curriculum requirements. With prior approval they may count for general elective, minor, or major elective requirements.

Independent study courses allow the student to work independently with faculty supervision and counsel. The courses typically carry variable credit of 2 or 4 credits each term. They are normally limited to upper-class majors but may be open to other well-qualified upper-class students. To register for an independent study, a student must complete an independent study form and obtain the approval of all relevant faculty and the Assistant Provost for Academic Affairs.

The result of the independent study course should be a paper or other objective, tangible evidence of completion of the work. In general, students are not permitted to take more than 12 credits of independent study during their four years, and no more than 8 credits may be taken in any one major. More specific information can be found by speaking with your academic advisor.

**Pass/Fail Option**

Students may elect one pass/fail option each term, including the summer sessions, for a total of not more than 32 credits during their college career. The choice must be made before the completion of the 9th week of the term (fourth week of a six-week summer session); after that time, the decision cannot be initiated or changed. No grade other than P or F will be recorded for those students choosing this option. P includes the grades of A, B, C, and D and is not counted in the grade point average. F is counted in the grade point average.

The pass/fail option is not acceptable in coursework in fulfillment of requirements toward a major, minor, prerequisites for more advanced coursework,
or the Core Curriculum requirements. Students considering the pass/fail option in their area of study or in required preprofessional courses should consult with their advisor about the effect of such grades on admission to graduate and professional schools. Students who change their majors may not be able to use courses taken under the pass/fail option to satisfy the requirements of their new majors. The form for declaring the pass/fail option may be obtained from the NYU Shanghai Advising or Registrar’s website.

Chinese language (through Intermediate II) and English for Academic Purposes courses cannot be taken P/F. Courses in other languages and Advanced Chinese classes can be taken P/F but grades of C or higher must be earned for prerequisite to advance to higher level courses. Grades of P will not fulfill language course prerequisites.

**Petitions**

The NYU Shanghai Academic Standards Committee will consider petitions of students to waive graduation requirements or modify academic policies and regulations of NYU Shanghai. Students should be aware that only very exceptional cases, supported by valid and documented reasons, will be considered. After deliberation, the Committee’s decisions on such matters are final. Petition instructions may be obtained from the Office of Academic Advising.
NYU Shanghai expects its students to maintain continuous registration in an academic program with the exception of summer breaks. However, it is sometimes necessary or desirable for a student to take a leave from enrollment for a period of time. The duration of the leave generally will be a minimum of one academic semester, or an equivalent four month period, to a maximum of two academic semesters or the equivalent in months (8 months). Such leaves may be voluntary or involuntary, and will be handled in accordance with the NYU-wide Student Leave Policy and Procedure (https://www.nyu.edu/about/policies-guidelines-compliance/policies-and-guidelines/student-leave-policy.html). As it applies to NYU Shanghai, the “Dean of the School” refers to the NYU Shanghai Dean of Students and the “Provost” refers to the NYU Shanghai Assistant Provost for Academic Affairs. Questions about references to specific offices within this policy should be referred to the NYU Shanghai Dean of Students. The paragraphs below briefly summarize the NYU Policy, but individuals considering a leave are encouraged to review the full NYU policy referenced above before making any final decisions.

NYU Shanghai students are expected to absent themselves from campus during their leave of absence. They may not audit classes, hold a campus job, participate with a student club or organization, attend campus events, or live in NYU housing. You may visit the campus for any other University-owned facilities only with the written permission of the Dean of Students or designee. Students on leave may not enroll in courses until they are approved to return.

**Voluntary Leave**

NYU recognizes that situations may arise when a student may want to voluntarily interrupt his or her academic studies. The University is committed to handling reasonable requests for leaves in a responsible manner. This policy may not be used in lieu of disciplinary action to address any violations of University rules, regulations, policies, or practices. A student who is granted a voluntary leave while on academic and/or disciplinary status will return to that same status.

**Involuntary Leave**

NYU may place a student on an involuntary leave of absence from that student’s academic program when that student: (1) poses a direct threat to health and safety of self or others; and (2) is not able or not willing to take a voluntary leave of absence. This policy may not be used in lieu of disciplinary actions to address any violations of University rules, regulations, policies, or practices. A student who is placed on an involuntary leave while on academic and/or disciplinary status will return to that same status.

**Returning from a Leave of Absence**

Students returning from a leave of absence are expected to successfully complete one academic semester (Fall or Spring) of full-time coursework in Shanghai before being eligible to enroll in a study away program. If a student is absent for two or more consecutive terms, they will be placed on non-sanctioned leave. Any student who has been out of attendance and/or on non-sanctioned leave for two or more consecutive terms and who wishes to return must apply for readmission.
Placement Examinations, Degree Progress, and Transcripts
Placement Examination for Chinese Language

Testing and Placement
Entering students who are not native speakers of Mandarin take an online placement exam prior to their first registration in NYU Shanghai. Online tests result in placement into the appropriate-level course. The online placement exam is used for new incoming students only to assess their language proficiency for a preliminary placement into Chinese language courses. In the case a student would like to demonstrate proficiency beyond the intermediate two level, thereby fulfilling the language requirement, the student must take an in-person place-out exam.

Placement into the intermediate two level or a lower level course means that the student must continue his or her studies of Chinese until successful completion of the intermediate two level of Chinese, either through successful completion of Intermediate Chinese II (CHIN-SHU 202), Intermediate Chinese II - Accelerated (CHIN-SHU 202A), or Intermediate for Advanced Beginners (CHIN-SHU 211). In order to progress to higher levels of Chinese, students must earn a grade of C or better. In order to satisfy the language requirement, students must earn a grade of C or better in Intermediate Chinese II or equivalent. Students may demonstrate equivalent proficiency by applying to take, and scoring an 85 or higher on a place-out exam. In some cases, adjustments in course placement may be made during the first weeks of class under advice and/or consent of instructors.

After matriculation, if a student requests to be placed out of intermediate two in order to fulfill the language requirement, the student must take an in-person place-out exam. The place-out exam must be taken and completed prior to the student’s final semester. The intermediate two place-out exam is offered during the add/drop period at the start of each semester. Requests for placeout/ exemption exams at a different time must be submitted by email to the World Languages program (shanghai.worldlanguages@nyu.edu) at least thirty (30) days in advance of the proposed examination date/time.

Information on placement testing can be obtained from the Office of Academic Advising. Students may contact shanghai.worldlanguages@nyu.edu to request an in-person place-out exam. The in-person place-out exams are usually held at the beginning of each semester. More information can be found at the website: https://worldlanguages.shanghai.nyu.edu/en/languages/chinese

Placement Process for Writing as Inquiry
Students will be evaluated for placement in two different first-year writing courses. Student standardized test scores, Candidate Weekend scores, and a writing sample may be considered as part of the evaluation. In some cases, adjustments in placement may be made during the first weeks of class. Information on placement testing will be communicated to matriculating students by their advisors.

Quantitative Reasoning
A student who wishes to place out of the Core Curriculum Mathematics requirement or to place into a higher level math class will have the opportunity to take a math placement exam, usually held at the beginning of each semester and prior to fall/spring registration. Note: A student may attempt the same math placement exam only twice, with at least three months between each attempt.

Degree Progress
All students have access to their Degree Progress Report, as generated by the Office of the NYU University Registrar, on Albert, NYU’s online registration and information system. The Degree Progress Report is a Student Information System (SIS) accounting of completed and remaining degree requirements. In addition, students are encouraged to consult their unofficial transcript while reviewing degree requirements.

Transcripts of Record
Unofficial transcripts are available on Albert.

A sealed NYU Shanghai official paper transcript should be requested from the NYU Shanghai Office of the Registrar by either physically visiting the office in the Pudong Academic Campus Building, Suite 1049, or sending an email from your NYU email account to shanghai.registrar@nyu.edu. Alternatively, students can request an official electronic transcript from the Albert Student Center. The “Request official transcript” link can be found under the “My Academics” section of Albert Student Center. Transcripts cannot be produced for anyone whose record has been put on hold for an outstanding University obligation. See the
NYU Shanghai Registration website for further information on transcript requests.

**Rank in Class**

NYU Shanghai neither records nor reports students’ class, college, or department rank. In an institution where students’ educational experiences are so varied, class rank is not a meaningful way to measure achievement. An explanatory note to that effect is attached to the official transcript.

**Requesting Enrollment Verification**

Students can request an official paper Enrollment Verification from the NYU Shanghai Office of the Registrar by either 1) physically visiting the office in the Pudong Academic Campus Building, Suite 1049; or 2) sending an email from their NYU email account to shanghai.registrar@nyu.edu.

The following should be included in the request:

1. University ID Number
2. Current Name and any name under which you attended NYU
3. Date of Birth
4. School of the University attended
5. Dates of Attendance
6. Date of (Anticipated) Graduation

Seven business days should be allowed for processing from the time the Office of the Registrar is in receipt of a student’s request.

For confirmation of a student’s request, students should contact the Office of the Registrar at +86-21 2059 5750 or shanghai.registrar@nyu.edu.

**Special Handling**

If a request requires special handling, students must request a paper Enrollment Verification from the NYU Shanghai Office of the Registrar. Specific special handling instructions should be sent in writing by contacting shanghai.registrar@nyu.edu. Special handling includes:

1. Sending paper Enrollment Verification to the student in separate sealed envelopes addressed to admissions offices of other universities.
2. Sending paper Enrollment Verification with additional documents to be sent along with the NYU Shanghai Enrollment Verification.

Additional documents can be sent to the Office of the Registrar via mail or email, or may be hand-delivered.

3. Specific requirements as part of the enrollment verification request (e.g. need passport number, dates outside of China, and countries being visited for visa purposes, etc.)

4. Requesting Enrollment Verification in Chinese/Bilingual form.

5. Express Delivery: The Office of the Registrar can assist students that are not on campus to deliver the paper Enrollment Verification via express mail. Please note that requesting documents to be sent via express service does not guarantee the processing time. All requests are processed in the order in which the requests are received.
   • For express delivery, send the request to shanghai.registrar@nyu.edu with detailed contact information of receiver(s) (i.e. name of school/institute/company, address, post code, contact person, telephone number).

*Note that all express-related expenses incurred shall be borne by the student requestor.*

**Arrears Policy**

NYU Shanghai reserves the right to deny registration and withhold all information regarding the record of any student who is in arrears in the payment of tuition, fees, loans, or other charges (including charges for housing, dining, or other activities or services) for as long as any arrears remain.

**Diploma Arrears Policy**

Diplomas of students in arrears will be held until their financial obligations to NYU Shanghai are fulfilled and they have been cleared by the Bursar. Graduates with a diploma hold may contact the Office of the Bursar to clear arrears or to discuss their financial status at NYU Shanghai.

**Diploma Application**

Students may officially graduate in September, January, or May. NYU Shanghai holds a baccalaureate ceremony in May. Students must apply for graduation on Albert, and they must be enrolled for either course work, leave of absence, or maintenance of matriculation during their final semester.
To graduate in a specific semester, students must apply for graduation within the application deadline period indicated by the Office of the Registrar. It is recommended that students apply for graduation no later than the beginning of the semester in which they plan to complete all program requirements. Students who do not successfully complete all academic requirements by the end of that semester must reapply for graduation for the following cycle.
The Academic Standards & Discipline policies of NYU Shanghai are summarized here. Unless otherwise noted, students should direct all questions or concerns regarding these policies to their Academic Advisor, who will liaise with the appropriate members of the university administration as needed.
Academic Standards

The NYU Shanghai Academic Standards Committee reviews student records throughout the academic year. All of its actions are based on the grades to date at the end of the term.

Academic Warning

Students with cumulative grade point averages of 2.0 to 2.25 will receive an academic warning letter with recommendations for achieving an appropriate standard for academic performance. Students who are on academic warning are invited and encouraged to participate in the Academic Support Program to support them in improving their GPA.

Academic Probation

Any student whose record is deemed unsatisfactory will be placed on academic probation and will be so informed by letter. A record will be deemed unsatisfactory if, in any semester, the student fails to meet standards for good academic standing, defined as cumulative and semester grade point average above 2.0 and maintaining steady and substantial progress toward the degree. Steady and substantial progress toward the degree entails the completion, with satisfactory grades, of more than half of the courses (and credits) for which a student registers in any semester. In addition, it entails satisfactory progress in the student’s major.

Failure to satisfy the conditions of probation will result in further academic sanctions and possibly dismissal from NYU Shanghai. The conditions usually require that the student (a) achieve a cumulative and semester grade point average of at least 2.0 during the probationary term, (b) not receive any grade below a C or any grade of I or P, (c) not withdraw from any course without securing the permission of the NYU Shanghai Academic Standards Committee prior to the withdrawal, and (d) participate fully in the Academic Support Program. More specific requirements may be imposed.

Students on academic probation may engage in co-curricular activities but may not hold office in university clubs or organizations without the approval of the NYU Shanghai Academic Standards Committee.

NYU Shanghai follows the Office of Global Programs policy regarding academic probation and study away admission. Students currently on academic probation are ineligible for study away.

Students on academic probation should be aware that they are usually ineligible for financial aid.

Students who are on academic probation are required to participate in the Academic Support Program, which includes additional meetings with advising and engaging with other resources to which students are referred.

Suspension

If a student fails to meet the minimal standards stated above at the end of the probation semester, the school will suspend them. Suspension is for a minimum of two semesters (Fall/Spring or Spring/Fall) and the student is required to follow NYU Shanghai procedures for departing from campus.

Suspended students may not:

- register for courses
- attend classes
- live in residence halls
- use campus facilities, such as athletic facilities, the library, and computer labs (and including all NYU facilities in other cities as well)
- participate in student activities
- be members of student organizations
- have student jobs

Note: Students on academic suspension may appeal to complete a summer/J-term course or hold a summer campus job if they started the class or job before they were suspended.

At the end of the two semesters, the student may petition to return to NYU Shanghai by completing the following steps:

1. Ask the Associate Provost for Academic Affairs in writing for permission to resume their studies.
2. Provide transcripts for any courses taken at other colleges or universities during the suspension even though academic credits earned during a suspension do not transfer back to NYU Shanghai.

To get approval to resume their studies the student must demonstrate that they are better prepared to perform above the minimum standards for graduation than before they were suspended.
Students return from suspension on probation. They may only resume studies during a fall or spring semester and must study in Shanghai.

**Academic Dismissal**

A student who fails to meet minimum standards at any point after returning from a suspension is subject to a dismissal action. A dismissal action is a permanent severance; the student is required to follow NYU Shanghai procedures for departing from campus and may not enroll again in the future.

The typical progression of academic actions is Probation, Suspension, and then Dismissal but the intent of the academic actions are to take measures that are in the student’s best interest and therefore the school may bypass one or more of these steps in an unusual case.

Students suspended or dismissed from NYU Shanghai for failing to meet academic performance standards will be informed via e-mail two to three weeks after their most recent grades are posted for the enrolled semester. Students who have paid tuition for the next term at the time of dismissal will receive a full refund of those tuition and fees.

**Academic Integrity**

*This policy sets forth core principles and standards with respect to academic integrity for students at NYU Shanghai.*

NYU Shanghai is a “community of the mind.” Its students, faculty, and staff all share the goal of pursuing truth through free and open inquiry, and we support one another’s endeavors in this regard. As in any community, membership comes with certain rights and responsibilities. Foremost among these is academic integrity. Cheating on an exam, falsifying data, or having someone else write a paper undermines others who are “doing it on their own”; it makes it difficult or impossible to assess fairly a student’s interest, aptitude, and achievement; and it diminishes the cheater, depriving him or her of an education. Most important, academic dishonesty is a violation of the very principles upon which the academy is founded. For this reason, violations of these principles are treated with the utmost seriousness.

At NYU Shanghai, a commitment to excellence, fairness, honesty, and respect within and outside the classroom is essential to maintaining the integrity of our community. By accepting membership in this community, students take responsibility for demonstrating these values in their own conduct and for recognizing and supporting these values in others. In turn, these values will create a campus climate that encourages the free exchange of ideas, promotes scholarly excellence through active and creative thought, and allows community members to achieve and be recognized for achieving their highest potential.

In pursuing these goals, NYU Shanghai expects and requires its students to adhere to the highest standards of scholarship, research and academic conduct. Essential to the process of teaching and learning is the periodic assessment of students’ academic progress through measures such as papers, examinations, presentations, and other projects. Academic dishonesty compromises the validity of these assessments as well as the relationship of trust within the community. Students who engage in such behavior will be subject to review and the possible imposition of penalties in accordance with the standards, practices, and procedures of NYU and its colleges and schools. Violations may result in failure on a particular assignment, failure in a course, suspension or expulsion from NYU Shanghai, or other penalties.

Faculty are expected to guide students in understanding other people’s ideas, in developing and clarifying their own thinking, and in using and conscientiously acknowledging resources - an increasingly complex endeavor given the current environment of widely available and continually emerging electronic resources. In addition, students come to NYU Shanghai from diverse educational contexts and may have understandings regarding academic expectations that differ from those at NYU Shanghai. NYU values and respects all academic traditions; however, while at NYU Shanghai, students are expected to adhere to the norms and standards of academic integrity espoused by the NYU Shanghai community and will be assessed in accordance with these standards. Students should ask their professors for guidance regarding these standards as well as style guide preferences for citation of sources for assignments in their courses.

Following are examples of behaviors that compromise the academic and intellectual community of NYU Shanghai and that are unacceptable.
1. Plagiarism: presenting others’ work without adequate acknowledgement of its source, as though it were one’s own. Plagiarism is a form of fraud. We all stand on the shoulders of others, and we must give credit to the creators of the works that we incorporate into products that we call our own. Some examples of plagiarism:

- A sequence of words incorporated without quotation marks
- An unacknowledged passage paraphrased from another’s work
- The use of ideas, sound recordings, computer data or images created by others as though it were one’s own

2. Cheating: deceiving a faculty member or other individual who assess student performance into believing that one’s mastery of a subject or discipline is greater than it is by a range of dishonest methods, including but not limited to:

- Bringing or accessing unauthorized materials during an examination (e.g., notes, books, or other information accessed via phones, computers, other technology or any other means)
- Providing assistance to acts of academic misconduct/dishonesty (e.g., sharing copies of exams via phones, computers, other technology or any other means; allowing others to copy answers on an exam)
- Submitting the same or substantially similar work in multiple courses, either in the same semester or in a different semester, without the express approval of all instructors
- Submitting work (papers, homework assignments, computer programs, experimental results, artwork, etc.) that was created by another, substantially or in whole, as one’s own
- Submitting answers on an exam that were obtained from the work of another person or providing answers or assistance to others during an exam when not explicitly permitted by the instructor
- Submitting evaluations of group members’ work for an assigned group project which misrepresent the work that was performed by another group member
- Altering or forging academic documents, including but not limited to admissions materials, academic records, grade reports, add/drop forms, course registration forms, etc.

3. Any behavior that violates the academic policies set forth by NYU Shanghai.

**NYU Shanghai Honor Code (adopted from the CAS Honor Code)**

As a student in NYU Shanghai, you belong to a community of scholars who value free and open inquiry. Honest assessment of ideas and their sources is the foundation of what we do.

NYU Shanghai is a community of mutual trust and respect in which personal prejudice has no part in the critical evaluation of ideas. It is a place where differences of opinion can be subjected to deliberate and reasonable examination without animus.

As scholars, it is therefore as a matter of honor and good repute that we each commit ourselves to assuring the integrity of our academic community and of the educational pursuits we undertake together.

As a student in NYU Shanghai, I pledge that:

- I will perform honestly all my academic obligations. I will not represent the words, works, or ideas of others as my own; will not cheat; and will not seek to mislead faculty or other academic officers in their evaluation of my course work or in any other academic affairs.
- I will behave with decorum and civility, and with respectful regard for all members of the University—faculty, staff, and fellow students—our guests, and members of our wider communities.
- I will abide by NYU Shanghai and by NYU rules of conduct and policies on academic integrity and by the special requirements of any individual course of study or other academic activity.
- I will endeavor earnestly to uphold the values, standards, and ideals on which our university community depends and call on others to do so.

**Procedures and Sanctions**

The penalty for academic dishonesty is severe. The following are the procedures followed at NYU Shanghai:

1. If a student cheats on an examination or in laboratory work or engages in plagiarism, appropriate disciplinary action should be taken. The following actions may be taken:
A. The faculty member, with the approval of the Assistant Dean for Academic Affairs, may reduce the student’s grade or give the student an F in the course.

B. If after lowering the grade or assigning an “F”, the faculty member or the Assistant Dean for Academic Affairs believes a more severe penalty (i.e., probation, suspension, or expulsion) is warranted, they can refer the case to the Associate Provost for Academic Affairs for further action.

2. In all cases of either (a) or (b), the Assistant Dean for Academic Affairs will inform the student of any action in writing and send a copy of this letter to the Associate Provost for Academic Affairs. The letter will include the nature of the offense, the penalty, and the right of the student to appeal such penalty. A copy of the letter will be kept in a confidential file. The Associate Provost for Academic Affairs’ office copy will also be kept in a confidential file. (The faculty member and/or the Assistant Dean for Academic Affairs will meet with the student and discuss the nature of the offense and the action taken.)

3. For cases involving a second offense, the Associate Provost for Academic Affairs will determine if a mediated outcome is possible or proceed as follows:

A. Convene a five-member ad hoc committee of three faculty members, one staff member, and one student to examine the evidence. This ad hoc committee will consider if there are reasonable grounds to believe that an academic integrity violation has occurred and if so, will affirm the penalty. If the committee affirms the penalty, the Associate Provost will send the student by e-mail a penalty letter. The letter will advise the student of his or her right to appeal. The student will have two business days from the letter’s delivery to request an appeal. The penalty will ordinarily be stayed during the pendency of appeal.

B. If the committee does not affirm the penalty, the report will be kept on file for a one-year period.

4. The student in all cases has the right to appeal to the Associate Provost for Academic Affairs.

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Community Standards

Academic communities exist to facilitate the process of acquiring and exchanging knowledge and understanding, to enhance the personal and intellectual development of its members, and to advance the interests of society. In order to realize its purpose, the University and its members must be free from personal injury or harm; bias or harassment; intimidation or coercion; damage or loss of property; disruption of educational and social activities; unreasonable interference with the exchange of concepts and ideas; and unreasonable interference with the administrative and supporting services offered by the University. Accordingly, all student members of the University community are expected to conduct themselves in a manner that demonstrates mutual respect for the rights and personal/academic well-being of others, preserves the integrity of the social and academic environment, upholds the core values of the institution and supports the mission of the University. The University has an inherent right to address behavior that impedes, obstructs, or threatens the maintenance of order and attainment of the aforementioned goals by violating the standards of conduct set forth in the NYU Shanghai Student Conduct Policies and the Academic Standards set forth in this bulletin as well as other policies that may be established by the respective NYU Schools, Global Sites, and administrative offices of the University. Students are expected to familiarize themselves and comply with all University policies; the NYU Shanghai Student Conduct Policies and Process are available at https://shanghai.nyu.edu/campuslife/community-standards/.
University Policies

- Privacy of Student Records
- Computing and Information Resources Code of Ethics
- Emergency Temporary Closing of the University
- Freedom of Expression
- Human Subjects in Research at NYU Shanghai
A. Privacy of Student Records

NYU Shanghai is fully committed to the protection of the privacy of student records. To assist with the guarding of this privacy, NYU Shanghai complies with the U. S. Family Educational Rights and Privacy Act (FERPA). This specifically means that any education records maintained by NYU or NYU Shanghai and directly related to students — such as grades, transcripts, and test scores — will not be released to others, including parents or guardians, without the student's consent, except as provided by U. S. federal regulations.

Education records refers to any record or document containing information directly related to a student (including computerized and electronic files, audio and video tape, photographic images, film, email, etc.) and is not limited to hard-copy documents or to a file with a student's name on it.

Family Educational Rights and Privacy Act (FERPA)

FERPA was enacted by the U. S. Congress to protect the privacy of students' education records, to establish the rights of students to inspect and review their education records, and to provide students with an opportunity to have information in their records corrected which is inaccurate, misleading, or otherwise in violation of their rights of privacy. FERPA also permits the disclosure by an institution without a student's prior consent of so-called “directory information” (see definition below), and of other personally identifiable information under certain limited conditions. Students have the right to file complaints with the U. S. Department of Education's Family Policy Compliance Office concerning alleged failures by an institution to comply with FERPA.

NYU Shanghai and NYU have designated the following student information as “directory information:” Name, dates of attendance, NYU school or college (i.e., NYU Shanghai), class, previous institution(s) attended, major field of study, full- or part-time status, degree(s) conferred (including dates), honors and awards (including dean’s list), past and present participation in officially recognized activities (including positions held and official statistics related to such participation and performance), email address, and NetID. Important: See notes (1) and (2) below.

1. Email address and NetID are directory information for internal purposes only and will not be made available to the general public except in specified directories from which students may opt out.
2. Under U. S. federal law, address information, telephone listings, and age are also considered directory information for military recruitment purposes. Address refers to “physical mailing address” but not email address.

FERPA governs the release of personally identifiable information to both external and internal parties, including other University employees, parents, and government agents. The NYU Guidelines for Compliance with FERPA (accessible as indicated below) describe the circumstances and procedures governing the release of information from a student’s education records to such parties.

Disclosure of Personally Identifiable Information

Among other exceptions authorized by FERPA, prior consent of the student is not needed for disclosure of directory information or for disclosure to school officials with a legitimate educational interest in access to the student’s educational record. School officials having a legitimate educational interest include any NYU Shanghai or NYU employee acting within the scope of her or his employment, and any duly appointed agent or representative of NYU Shanghai or NYU acting within the scope of their appointment. In addition, NYU or NYU Shanghai may, at its sole discretion, forward education records to the officials of another institution (a) in which a student seeks or intends to enroll if that institution requests such records, or (b) if the student is enrolled in or receiving services from that institution while she or he is attending NYU Shanghai or NYU. Other exceptions are listed in the NYU FERPA Guidelines.

Additional Information for Students about Records Access

Students may obtain additional information about access to their records from the NYU FERPA Guidelines. The NYU FERPA Guidelines may be viewed online, or by contacting the NYU Shanghai registrar. Students should also read the FERPA Annual Notice to Students.
B. Computing and Information Resources Code of Ethics

The ethical principles which apply to everyday community life also apply to computing. Every member of NYU Shanghai has two basic rights: privacy and a fair share of resources. It is unethical for any other person to violate these rights.

Privacy
- On shared computer systems every user is assigned an ID. Nobody else should use an ID without explicit permission from the owner.
- All files belong to somebody. They should be assumed to be private and confidential unless the owner has explicitly made them available to others.
- Messages sent to other users should always identify the sender.
- Network traffic should be considered private.
- Obscenities should not be sent by computer.
- Records relating to the use of computing and information resources are confidential.
- Nobody should deliberately attempt to degrade or disrupt system performance or to interfere with the work of others.
- Loopholes in computer systems or knowledge of a special password should not be used to alter computer systems, obtain extra resources, or take resources from another person.
- Computing equipment owned by departments or individuals should be used only with the owner’s permission.
- NYU Shanghai computing resources are provided for university purposes and are governed by the NYU Shanghai IT Guidelines. Any use of computing resources for commercial purposes or personal financial gain must be authorized in advance. Many of the agreements that the university has specifically forbid this kind of activity.
- Computing and information resources are community resources and may not be used to violate applicable law. Theft, mutilation, and abuse of these resources violate the nature and spirit of community and intellectual inquiry.

System Administration
- On rare occasions, computing staff may access others’ files, but only when strictly necessary for the maintenance of a system.
- If a loophole is found in the security of any computer system, it should be reported to the system administrator and not used for personal gain or to disrupt the work of others.
- The distribution and copying of programs, digital information and databases are controlled by the laws of copyright, licensing agreements, and trade secret laws. These must be observed.

This code of ethics lays down general guidelines for the use of computing and information resources, which are primarily governed by the NYU Shanghai IT Guidelines. Failure to observe the code may lead to disciplinary action. Offenses that involve academic dishonesty will be considered particularly serious.
C. Emergency Temporary Closing of the University

NYU Shanghai has an important commitment to students, parents, sponsors, benefactors and the community. Accordingly, the university will make every attempt to operate normally during severe weather or other emergencies. This includes holding classes, conducting research programs, and operating facilities and services. The university will attempt to operate normally unless such operation represents a clear danger to students, staff or faculty.

There may be occasions when the university community is served best by suspending normal operations. In that event, only the Vice-Chancellor (or the Provost if the Vice-Chancellor is away) has the authority to close NYU Shanghai and to specify those persons or group of persons who are free to leave or refrain from coming to campus.

Standard Operations

Unless the Vice Chancellor announces that NYU Shanghai is closed, everyone is expected to be in attendance as usual. When the university is in session, faculty members are expected to meet their scheduled classes and other obligations. If a faculty member is unable to meet a scheduled class, he or she should notify the relevant Dean and arrange either for a qualified substitute or for a future make-up session.

D. Freedom of Expression

NYU Shanghai values the freedoms of speech, thought, expression and assembly - in themselves and as part of our core educational and intellectual mission. If individuals are to cherish freedom, they must experience it. The very concept of freedom assumes that people usually choose wisely from a range of available ideas and that the range and implications of ideas cannot be fully understood unless we hold vital our rights to know, to express, and to choose. NYU Shanghai must be a place where all ideas may be expressed freely and where no alternative is withheld from consideration. The only limits on these freedoms are those dictated by law and those necessary to protect the rights of other members of the university community and to ensure the normal functioning of NYU Shanghai.

Rights

Within NYU Shanghai’s campus buildings, any member of the NYU Shanghai community may distribute printed material, offer petitions for signature, make speeches, and hold protests or demonstrations. All such activities must be peaceful, avoiding acts or credible threats of violence and preserving the normal operation of NYU Shanghai. No event will infringe upon the rights or privileges of others, and no one will be permitted to cause significant harm to others, damage or deface property, block access to NYU Shanghai buildings or disrupt classes. The enforcement of these conditions will not depend in any way on the message or sponsorship of the act or event. When guests are invited by the university or by a recognized campus organization, they may express their ideas not because they have a right to do so, but because members of the campus community have a right to hear, see, and experience diverse intellectual and creative inquiry. Defending that right is a fundamental obligation of NYU Shanghai. Controversy cannot be permitted to abridge the freedoms of speech, thought, expression or assembly. They are not matters of convenience, but of necessity.

Responsibilities

Freedom of expression must be at once fiercely guarded and genuinely embraced. Those who exercise it serve the NYU Shanghai community by accepting the responsibilities attendant to free expression. NYU Shanghai organizations
that sponsor invited guests to campus are expected to uphold NYU Shanghai’s educational mission by planning carefully to create safe and thoughtful experiences for those involved. Hosts are responsible for the behavior of their guests and should exercise due care to ensure that all participants abide by relevant laws and NYU Shanghai policies.

E. Human Subjects in Research at NYU Shanghai

NYU Shanghai is committed to the protection of the rights and welfare of human subjects in research projects conducted by NYU Shanghai faculty, staff, and students. All research involving human subjects must be reviewed and approved by the NYU Shanghai’s Institutional Review Board (IRB) prior to being conducted. Our policies and procedures manual, “NYU Shanghai Institutional Review Board Procedures for Human Subjects Research Protection”, details not only the policies and regulations governing research with human subjects, but also the procedures for submitting research proposals for review.

The IRB is responsible for ensuring compliance with all applicable regulations (US and Chinese), local laws and customs, and institutional policies. All human subjects research at NYU Shanghai is conducted in accordance with the US policy and regulations found in 45CFR46, as well as in accordance with Chinese policy and regulations found in Measures for the Examination of Ethics for Biomedical Research Involving Humans. In the event of conflict between applicable standards of protection, NYU Shanghai follows the standard that provides greater protection to human subjects.

The Principal Investigator (PI) is ultimately responsible for assuring compliance with applicable University IRB policies and procedures, and for the oversight of the research study. The IRB recognizes one PI for each study. The PI is expected to abide by the highest ethical standards and to develop a protocol that incorporates the principles of the Belmont Report. He/she is expected to conduct research in accordance with the approved research protocol and to oversee all aspects of the research by providing supervision of support staff, including oversight of the informed consent process. The PI is responsible for obtaining prior IRB review and approval for any proposed changes to research methodology, recruitment, consent procedures, etc. to a previously approved protocol, except where an immediate change in protocol is warranted to protect the health and welfare of subject(s).

Information about and policies applicable to human subjects in research at NYU Shanghai are available at https://research.shanghai.nyu.edu/resources/human-subjects.
Honors and Awards

Matriculated students with superior academic records are honored in various ways, such as by placement on the Dean’s Honors List, election to honor societies, and admission to major honors programs.

Additional information may be obtained from a student’s advisor and from the Academic Affairs Office.
Honors

Dean's Honors List
A Dean's Honors List is compiled at the end of each academic year, in June. This is an honors roll of matriculated students who have achieved an average of 3.65 or higher for that academic year (September to May) in at least 28 graded credits. To be listed, a student must not have any grades of Incomplete or N at the time when the list is compiled. Note that grade point averages are carried to two decimal places (but are not rounded off).

Eligibility for Graduation With Latin Honors
All graded courses taken before a student’s final semester while enrolled either in NYU Shanghai [or in another school of NYU] will be used in computing the grade point average on which Latin honors are based. Pass grades are not counted; grades received in courses taken at other institutions are also not counted. The student must also have a clean record of conduct.

The GPA cutoffs for each category are determined by the combined GPA distribution from all graded courses taken through the J-term before the graduating cohort’s final spring semester. This means that final spring semester grades are not used for determining Latin Honors and no adjustments are made to a student’s status regarding Latin Honors based on final spring grades. Latin Honors are calculated once a year and only students who have at least 110 earned credits before the spring semester and have their degree conferred that spring or earlier are eligible for consideration. Students who complete their graduation requirements before the beginning of the final spring semester have all grades counted toward calculating Latin Honors.

The GPA cutoff for summa cum laude is the GPA included within the top 5 percent of the graduating class. The cut off for magna cum laude is the GPA included within the next 10 percent of the class. The cutoff for cum laude is the GPA included within the next 15 percent of the class.

Major Honors
Students may be awarded degrees with major honors if they complete the designated honors sequence in the major, maintain the requisite grade point average, and are selected by their major faculty. No more than 10 percent of students in a major may graduate with major honors.

Students seeking admission to and graduation with major honors are expected to have a minimum grade point average of 3.65, both overall and in the major. Majors may exercise some flexibility in admissions, as follows. In rare cases where a candidate for admission to a major honors program falls short of the expected minimum GPA, the major leader may petition the Associate Provost for Academic Affairs for an exception. In all cases, once admitted, students are expected to maintain the GPA at the stipulated level in order to graduate with major honors. Should there be an exceptional circumstance in which the stipulated GPA is not maintained, the Associate Provost for Academic Affairs may be petitioned for an exception. If the case is compelling, the latter will inform the Registrar’s office of the waiver.

All students completing departmental honors must make public presentations of their work, preferably at the NYU Shanghai Undergraduate Research Symposium held at the end of the academic year, or in a major forum (e.g., oral defenses or presentations) held in conjunction with the Undergraduate Research Symposium.

Provost’s Award for Scholarship and/or Service
Presented by the Provost of NYU Shanghai to a graduating senior for outstanding accomplishment in either or both of these areas.

Dean’s Award in Arts and Sciences
Awarded to the graduating senior who has excelled in arts and sciences and who has contributed in a noteworthy way to the life of the campus during four years.

Dean’s Award in Business
Awarded to the graduating senior who has excelled in business and who has contributed in a noteworthy way to the life of the campus during four years.

Dean’s Award in Computer Science, Data Science, and Engineering
Awarded to the graduating senior who has excelled in computer science, data science, and engineering and who has contributed in a noteworthy way to the life of the campus during four years.
Part IV

Academic Overview
Ever since Cicero, the Roman statesman, invented the phrase “artes liberales,” the liberal arts and sciences have been the touchstone of excellence in education for all individuals, regardless of their professional aspirations. This is because these studies liberate an individual from narrowly vocational concerns and have been shown to free the mind to be creative. Today, this educational approach focuses on direct and critical engagement with the great ideas of the past and the present, on the development of the essential skills of analysis and communication, and on in-depth knowledge of one or more disciplines. A shared background in the liberal arts and sciences also has the power to transform a diverse group of students into a real community organized around the life of the mind.

Our aim is to give NYU Shanghai students a strong, globally-oriented foundation in the liberal arts and sciences. This curriculum will help students develop the ability to think analytically, read critically, and write effectively. It will also cultivate their creativity in solving problems, their tolerance for ambiguity, and their respect for diversity of opinion and the exchange of ideas. Finally, through the core curriculum, the majors, and international experiences in the NYU global network, students will learn to recognize themselves as part of a global community. The crucial role that China plays in that global community will be emphasized throughout the curriculum.

Academic Program

Three unique features define the NYU Shanghai approach and set it apart from most other undergraduate programs:

- A core curriculum for the 21st century, with globally-oriented as well as China-focused social and cultural courses, writing and language courses which develop students’ communication skills in both English and Chinese, and courses which introduce or strengthen a student’s understanding of Mathematics, science, and algorithmic thinking;

- A carefully selected set of majors (or specializations) that capitalize on the world-class strengths of NYU’s research faculty, departments, and programs, as well as on the limitless opportunities that Shanghai presents;

- Access to the NYU global network through an unparalleled array of study-abroad opportunities, which are available at NYU sites around the world and which are easily integrated into students’ programs of study.

Program of Study

NYU Shanghai students will take 128 credits of coursework to graduate; these courses will be distributed among core curriculum requirements, major requirements, and general electives. Students will typically complete the core curriculum during their first two years and the bulk of their major requirements during their second two years. Students considering some of the STEM majors (Science, Technology, Engineering, and Mathematics), however, may take longer to complete the core courses since they must begin taking required courses in their intended major as early as the first semester.

Orientation

Orientation will be held in Shanghai in the week prior to the start of the fall semester. The primary goals of this program are: to help new students smoothly transition to college life by introducing students to NYU Shanghai’s liberal arts and sciences curriculum; provide information and resources to help students settle down in a new living and learning environment; help students get to know their peers; and foster an understanding and appreciation of the diverse community at NYU Shanghai. In addition to lectures and panels on academic and university resources, students will also benefit from a series of fun events, dialogues and tours during the orientation week.

Study Away

Students are required to spend one semester studying at one of NYU’s global academic centers or degree-granting campuses or at an approved International Exchange Programs (IEPs).

The earliest a student may study away and maximum semesters they may study away:

- Students may choose to study away for up to two semesters within the 4-semester window of second semester sophomore year through first semester senior year, but study away during spring of sophomore year may not be NY or AD.
• Students are required to have satisfactorily completed Elementary Chinese II or 8 credits of English for Academic Purposes (EAP) before they are eligible to study away. Students should develop a study away plan in consultation with their academic advisor.

• Students must be in attendance in Shanghai in their final semester. NYU’s global network recommends students to have a 3.00 cumulative grade point average to study away.

• Courses that students need for their major are offered at the NYU global academic centers and degree-granting campuses allowing students to continue to fulfill many of their major requirements and make normal progress toward graduation. Students can reference global course options at NYU’s degree-granting campuses and study away sites through the spreadsheet Courses Satisfying Shanghai Degree Requirements. Cost of attendance varies between the Global Academic Centers and degree-granting campuses. Students can reference the cost estimator to get an estimate of their expected cost of attendance per semester.
Majors and Minors
NYU Shanghai offers its students an array of majors and minors. Our majors and minors showcase NYU’s world-class faculty, major research strengths, and international distinction. These include:

Majors
NYU Shanghai majors are organized into three divisions each overseen by a Dean.

Arts & Sciences
Dean Maria Montoya
- Biology
- Chemistry
- Economics
- Global China Studies
- Humanities
- Interactive Media Arts
- Interactive Media and Business
- Mathematics
- Honors Mathematics
- Neural Science
- Physics
- Social Science

Business
Dean Yuxin Chen
- Business and Finance
- Business and Marketing

Computer Science, Data Science, and Engineering
Dean Keith Ross
- Computer Science
- Computer Systems Engineering
- Data Science
- Electrical and Systems Engineering

Self-Designed Honors Major

Minors
Shanghai Minors
- Biology
  - Molecular and Cell Biology
  - Genomics and Bioinformatics
- Business
- Chemistry
- Chinese Language
- Chinese Language and Literature
- Computer Science
- Computer Systems Engineering
- Creativity and Innovation
- Creative Writing

Global Network Minors
For the list of Global Network Minors, see https://shanghai.nyu.edu/academics/minors.

NYU Cross-school Minors
For the list of cross-school minors, see http://www.nyu.edu/students/undergraduates/academic-services/undergraduate-advisement/unique-academic-opportunities/cross-school-minors/cross-school-minors-by-school.html.
Part V

Core Curriculum Overview
The Core Curriculum forms the center of NYU Shanghai’s globally-oriented liberal arts and sciences education. Through Core courses, students deepen their intellectual engagement with diverse perspectives from the past and present; they gain increased awareness of distinct disciplinary approaches to problem-posing and analysis; and they develop skills to ethically and effectively respond to global challenges.

**Core Curriculum Components**

<table>
<thead>
<tr>
<th>Core Component</th>
<th>Required Courses</th>
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<tbody>
<tr>
<td><strong>Social and Cultural Foundations</strong></td>
<td>Global Perspectives on Society (4 credits)</td>
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<td></td>
<td>Perspectives on the Humanities (4 credits) (also fulfills Writing)</td>
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<tr>
<td></td>
<td>Interdisciplinary Perspectives on China (2 courses/8 credits total)</td>
</tr>
<tr>
<td><strong>Writing</strong></td>
<td>Writing as Inquiry (4 credits)</td>
</tr>
<tr>
<td></td>
<td>Perspectives on the Humanities (4 credits) (also fulfills Social and Cultural Foundations)</td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td>Chinese (through Intermediate II or equivalent competency)</td>
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<td></td>
<td><em>OR</em></td>
</tr>
<tr>
<td></td>
<td>English for Academic Purposes (8 credits in a two-semester course sequence or equivalent competency)</td>
</tr>
<tr>
<td><strong>Mathematics</strong></td>
<td>Mathematics course (4 credits)</td>
</tr>
<tr>
<td><strong>Science</strong></td>
<td>Experimental Discovery in the Natural World course (4 credits)</td>
</tr>
<tr>
<td></td>
<td>Science, Technology and Society course (4 credits)</td>
</tr>
<tr>
<td><strong>Algorithmic Thinking</strong></td>
<td>Algorithmic Thinking course (4 credits)</td>
</tr>
</tbody>
</table>
Courses in the Social and Cultural Foundations sequence will provide students with a thematic framework within which to study influential works of diverse cultures, from the beginnings of history to the present, and from global and interdisciplinary perspectives. Students will reflect on fundamental and enduring questions about what it means to be human and how we as individuals live in society. These courses will teach students to take a global perspective as they read and interpret great works and ideas of the past and present; to ask critical questions, find unstated assumptions, and assess evidence presented in empirical and theoretical scholarship; to deepen their understanding of the history and development of contemporary China; and to communicate complex ideas with clarity.

The Social and Cultural Foundations component includes four required courses:

- A survey course called *Global Perspectives on Society*
- A writing course called *Perspectives on the Humanities*
- Two courses from the category *Interdisciplinary Perspectives on China*

**Global Perspectives on Society (GPS)**

In the survey course *Global Perspectives on Society*, students will engage in the comparative study of primary works of social thought from across the globe. The course addresses ways that writers in different times and cultures have sought to situate humans within the universe, and to promote ideal standards for human behavior. Each week, students will be expected to engage one or more central texts by an important thinker on a given topic. The expectation is that *Global Perspectives on Society* will be taken in the first semester of students' first year at NYU Shanghai.

**Perspectives on the Humanities (PoH)**

*Perspectives on the Humanities* is a content-based writing seminar, which introduces students to the questions asked and methods used by a variety of disciplines in the humanities, including philosophy, history, and literature. In the fall of their second year at NYU Shanghai, students choose from a variety of *Perspectives on the Humanities* topics. *Perspectives on the Humanities* is also designed to reinforce and advance the writing and thinking skills learned in the first-year *Writing as Inquiry* workshop. In addition to satisfying one Social and Cultural Foundations requirement, this course satisfies one of two writing requirements (see *Writing*).

**Interdisciplinary Perspectives on China (IPC)**

By completing two *Interdisciplinary Perspectives on China* courses, students will be able to identify basic dimensions of China's current and historical contexts, and they will be able to combine this knowledge with disciplinary theory to analyze past and present issues confronting Chinese society. Through their ability to identify important dimensions of Chinese culture and society and their familiarity with relevant theoretical approaches, students will develop an analytically engaged perspective on their own immediate context in Shanghai and China, in all of its cultural richness, social diversity, and political and economic complexity.

*Interdisciplinary Perspectives on China* courses cover a wide range of disciplinary and interdisciplinary approaches. They include history, philosophy, culture, art, and literature disciplines that use critical methods and primarily take a comparative and historical approach. They may also engage in both qualitative and quantitative analyses, using a range of analytical, interpretive, and experimental tools from anthropology, economics, sociology, political science, and psychology. *Interdisciplinary Perspectives on China* courses may be taken at any point in a student's undergraduate experience.
NYU Shanghai writing courses serve as an introduction to academic writing and inquiry at the university level. Students learn how to closely read academic, argumentative, and narrative texts; how to provide an interpretation supported by evidence; how to build logical arguments and develop research questions; and how to adapt their writing to different genres and audiences. In these courses, students come to see writing as a process, one that sharpens their thinking and allows them to pursue the questions that feel most urgent to them. The habits, dispositions, and skills taught in these classes may be transferred to communication in a variety of channels—academic, civic, business, personal, and creative. The capacities for critical analysis and nuanced self-expression developed in Writing Program classes will prove useful whatever a student’s future endeavors.

Required courses: Students must complete two writing courses. Students take *Writing as Inquiry*, the first-year writing workshop, in the spring of their first year. Students are placed in either Writing I or Writing II; in Writing I, students spend additional time focused on areas of rhetoric, grammar, and style that are relevant to second language learners. Students must complete *Writing as Inquiry* (receiving a C or higher) before advancing to *Perspectives on the Humanities*, which is offered in the fall of the sophomore year (*Perspectives on the Humanities* also satisfies one Social and Cultural Foundations requirement; see “Social and Cultural Foundations”).
Language study is central to NYU’s educational mission to develop well-rounded global citizens. Through language study, students gain the ability to operate effectively in multilingual and multicultural contexts. All NYU Shanghai students will be able to use English and Chinese for a range of communicative aims.

**Chinese Language**
Core Chinese language courses prepare students to develop the communicative skills and competencies that allow them to engage in interpersonal and intercultural exchanges in the target language. Students will develop a greater cultural awareness of the context in which they study.

Required courses or proficiencies for Chinese: Students are required to successfully complete the intermediate two level of Chinese, or to demonstrate an equivalent competency through a placement exam. They are encouraged to develop as much proficiency in Chinese as their major course of study allows. In the summer before the first year, students who did not attend a Chinese-medium high school will have their Chinese language level assessed and will be placed into the appropriate level course. Engineering and Foundations of Science students are unable to take 4-credit courses in Chinese in their first year because of the course requirements of their major. Therefore, they will be able to complete the Elementary and Intermediate Chinese course requirements by completing two-credit Chinese classes throughout their fall and spring semesters. These two-credit Chinese classes are not open to other major or study-away students. The Chinese language program offers multiple modalities of instruction, including formal intensive coursework during Summer Sessions, online self-study, and co-curricular language coaching with immersion experiences. In order to study away, students must successfully complete Elementary Chinese II with a grade of C or better. To satisfy the language requirement, students must earn a grade of C or better in Intermediate Chinese II or equivalent. In addition, students may demonstrate equivalent proficiency by applying to take and scoring an 80 or higher on a placement exam.

**English for Academic Purposes**
Core English for Academic Purposes (EAP) courses prepare students who did not attend an English-medium high school to engage communicatively at the high level demanded by the university’s liberal arts context.

Required courses or proficiencies for English: Chinese speakers who did not attend an English-medium high school are required to complete up to 8 credits of EAP in the first two years, following a two-semester course sequence from EAP 100 to EAP 101. EAP 100 must be completed in the first year. Most students will complete a four-credit EAP seminar in the fall term and an EAP 101 seminar in the spring term. A small number of students taking course sequences in the sciences will be eligible to take two two-credit EAP 100 seminars in the first year and to complete EAP 101 in the following year. Academic advisors will notify students if they are eligible for the two-credit seminar. Students must successfully complete EAP 101 before the end of their second year and before they study away. Students who demonstrate exceptionally strong competence on all learning outcomes as they complete EAP 100 may be recommended by faculty for exemption from EAP 101. Exemptions are rare and most students should expect to complete the full eight credits of EAP.
Math core courses are an initiation to the use of mathematics to model and understand natural phenomena. Students are expected to acquire basic computational skills and the understanding of foundational mathematical notions. In addition, students are exposed to proofs and logical operations in mathematics.

Students may fulfill their math requirement by taking *Precalculus* or *Great Ideas in Mathematics*, by taking other courses designated as fulfilling the Mathematics component, or by placing out of the requirement.

The relevant exam scores which may be used to fulfill the core curriculum mathematics requirement are listed below. No corresponding credit is awarded and test scores cannot be used to fulfill a prerequisite for an upper-level course in that area.

- AP Calculus AB or BC: Score of 4 or higher
- IB Mathematics HL: Score of 6 or higher
- A Level Mathematics: Score of B or higher
- NYU Shanghai Placement into Calculus
Scientific knowledge and inquiry are central to human society, and science and technology play an increasingly important role in our lives. At the heart of the natural sciences is a quest to understand the universe, the biosphere, and who we humans are. The special feature of science is that its hypotheses can be tested under controlled conditions by appealing to evidence external to the inquirer. Thus, science provides a consistent framework for proposing ideas and testing potential answers to these questions. NYU Shanghai students will become conversant with the fundamental concepts and applications, intellectual methods and analytical techniques that define modern science.

The science component has two required courses:

1. One lab-based course to fulfill *Experimental Discovery in the Natural World*;
2. One non-laboratory-based course to fulfill *Science, Technology, and Society*.

**Experimental Discovery in the Natural World**

In *Experimental Discovery in the Natural World* (ED) courses, students are introduced to the foundations and frontiers of scientific investigation in the physical and life sciences. Through the laboratory experience, students develop the ability to use experimental methods to understand the world.

**Science, Technology, and Society**

In *Science, Technology, and Society* (STS) courses, students study science and/or technology in their wider context. This may involve thinking about science and technology from a different disciplinary perspective—philosophical, historical, sociological, economic or political, for example. But it may also involve taking science and technology themselves as the focus of scientific investigation, as for example in a course that focuses on the limits of statistical methods, or on formal approaches to the social structure of science. Alternatively, STS courses may examine a single topic from a range of perspectives that include, but are not limited to, scientific and technological perspectives, such as in a course that focuses on environmental politics, global health, bioinformatics, or smart cities. What unites STS courses is a reflective attitude to the nature of science and technology, and taking science and technology themselves as the primary objects of study.

*ED and STS courses cover a wide range of disciplinary and interdisciplinary approaches; these courses may be taken at any point in a student’s undergraduate experience.*

Students who pursue degrees in some STEM disciplines\(^1\) will complete the Science core requirements by fulfills the requirements in those majors.

The relevant exam scores which may be used to fulfill the Core Curriculum *Experimental Discovery in the Natural World* requirement are listed below. No corresponding credit is awarded and test scores cannot be used to fulfill a prerequisite for an upper-level course in that area.

- A Level Psychology: Score of B or higher fulfills core; score of A fulfills core and course equivalency for PSYCH-SHU 101
- AP Psychology: Score of 4 or higher fulfills core; score of 5 fulfills core and course equivalency for PSYCH-SHU 101
- IB Psychology HL (Higher Level): Score of 6 or higher fulfills core; score of 7 fulfills core and course equivalency for PSYCH-SHU 101
- AP Physics C- Mech OR AP Physics C– E&M: Score of 4 or higher
- IB Biology HL, Chemistry HL, OR Physics HL: Score of 6 or higher
- A Level Biology, Chemistry, OR Physics: Score of B or higher
- AP Physics 1, Chemistry, OR Biology: Score of 4 or higher

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1 Biology, Chemistry, Physics, Neural Science, Computer Systems Engineering, Electrical Systems, Engineering, Math, or Honors Math.
In Algorithmic Thinking (AT) courses, students acquire an understanding of the nature of computation, by studying the formal or mathematical properties of computation, by applying the concrete forms computation has taken, either historically or in the present, or by learning how to program. Students also will learn to critically engage with computation, by studying at least one context in which computation is embedded, whether historical, social, political, philosophical, mathematical or creative.

AT courses cover a wide range of disciplinary and interdisciplinary approaches; the AT course may be taken at any point in a student’s undergraduate experience.

The relevant exam scores which may be used to fulfill the Core Curriculum Algorithmic Thinking requirement are listed below. No corresponding credit is awarded.

- AP Computer Science: Score of 4 or higher
- IB HL (Higher Level) Computer Science: Score of 6 or higher
- NYU Shanghai Placement into Introduction to Computer Science
Exam Scores At-A-Glance

The following exam scores may be used to fulfill Core Curriculum requirements. No corresponding credit is awarded and test scores cannot be used to fulfill a prerequisite for an upper-level course in that area.

<table>
<thead>
<tr>
<th>Core Curriculum Requirement</th>
<th>Can be fulfilled by these exams (though no credit is given)</th>
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<tbody>
<tr>
<td>Mathematics</td>
<td>AP Calculus AB or BC: Score of 4 or higher</td>
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<tr>
<td></td>
<td>IB Mathematics HL: Score of 6 or higher</td>
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<tr>
<td></td>
<td>A Level Mathematics: Score of B or higher</td>
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<tr>
<td></td>
<td>NYU Shanghai Placement into Calculus</td>
</tr>
<tr>
<td>Experimental Discovery (ED)</td>
<td>AP Psychology: Score of 4 or higher fulfills core; score of 5 fulfills core and course equivalency for PSYCH-SHU 101</td>
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<td></td>
<td>IB Psychology HL (Higher Level): Score of 6 or higher fulfills core; score of 7 fulfills core and course equivalency for PSYCH-SHU 101</td>
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<td></td>
<td>A Level Psychology: Score of B or higher fulfills core; score of A fulfills core and course equivalency for PSYCH-SHU 101</td>
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<tr>
<td></td>
<td>AP Physics C-Mech OR AP Physics C–E&amp;M: Score of 4 or higher</td>
</tr>
<tr>
<td></td>
<td>AP Physics 1, Chemistry, OR Biology: Score of 4 or higher</td>
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<tr>
<td></td>
<td>IB Biology HL, Chemistry HL, OR Physics HL: Score of 6 or higher</td>
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<td></td>
<td>A Level Biology, Chemistry, OR Physics: Score of B or higher</td>
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<tr>
<td>Algorithmic Thinking (AT)</td>
<td>AP Computer Science: Score of 4 or higher</td>
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<td></td>
<td>IB Computer Science HL: Score of 6 or higher</td>
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<td></td>
<td>NYU Shanghai Placement into Introduction to Computer Science</td>
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Part VI
Overview of Majors
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<th>Program</th>
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<td>GLOBAL CHINA STUDIES</td>
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<td>INTERACTIVE MEDIA ARTS</td>
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<tr>
<td>INTERACTIVE MEDIA + BUSINESS</td>
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<td>NEURAL SCIENCE</td>
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<td>PHYSICS</td>
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Biology is concerned with the workings of life in all its varied forms. Over the past few decades, the life sciences have been revolutionized by the development of molecular, cellular, genomic, and bioinformatics techniques that are now being utilized to study fundamental processes in organisms as well as applying this information to improve human health, enhance rational management of our environment, develop forensic science, and augment the production of renewable energy with the concomitant sequestering of pollutants, as well as approach ethical and legal issues that impinge on biological discoveries and their applications. The Biology curriculum aims to produce scientists with inquisitive minds who are self-reliant and who seek high quality of information about how the natural world works.

Building on the foundational science courses in chemistry, physics, biology, students in the Biology major learn to use the contemporary tools and approaches that are available to solve problems in areas of the current life sciences. In developing the major, we are first focusing on covering the essential “pillars of biological concepts”: molecular and cellular biology, genetics, and evolution. We also ensure that students are trained in modern methods of quantitative and computational analysis. The major is structured so that students can take a diversity of upper-level courses upon completion of the core courses. These intermediate and advanced courses provide a broad and intensive background in modern biology for those interested in careers in research, health-related fields, biotechnology, and education, among others. The biology major allows students to pursue independent research that could lead to an undergraduate thesis.

The Biology program at NYU Shanghai has strong interactive ties with the Department of Biology and the Center for Genomics and Systems Biology at NYU in New York, and the Biology program at NYU Abu Dhabi, as well as with other laboratories across NYU’s global network.
REQUIREMENTS FOR THE MAJOR

Note: Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement. Requirements may be met through equivalent courses in NYU’s global network with prior approval. Students may not double-major in Biology and Neural Science.

Foundational Courses

- BIOL-SHU 21  Foundations of Biology I
- BIOL-SHU 22  Foundations of Biology II
- BIOL-SHU 123  Foundations of Biology Lab
- CHEM-SHU 125  Foundations of Chemistry I
- CHEM-SHU 126  Foundations of Chemistry II
- CHEM-SHU 127  Foundations of Chemistry I Lab OR CHEM-SHU 128  Foundations of Chemistry II Lab
- PHYS-SHU 11  General Physics I OR PHYS-SHU 91  Foundations of Physics I Honors
- PHYS-SHU 12  General Physics II OR PHYS-SHU 93  Foundations of Physics II Honors
- PHYS-SHU 71  Foundations of Physics Lab I
- PHYS-SHU 94  Foundations of Physics Lab II

Notes:
1) Biology majors are encouraged to complete the above classes in their first 2 years.
2) Biology majors are not required to take Foundations of Physics III Honors.
3) Relationship between General Physics and Foundations of Physics Honors: General Physics I & II are calculus-based courses for science majors, pre-meds, engineers and others who want a broad introduction and survey of basic physics including classical mechanics, electricity and magnetism, optics and waves, and thermal and statistical physics. Foundations of Physics I-IV Honors covers a similar set of topics in considerably greater depth, plus special relativity and an introduction to quantum mechanics, over four semesters, and these courses are recommended for students with a strong high-school background in physics and mathematics. While Foundations of Physics I & II Honors meet the requirements for a Biology major, taken alone, these courses do not include some important topics, such as optics, thermal and statistical physics, mechanics, and which are included in Foundations of Physics III Honors, and introduction to mechanics and condensed matter physics in Foundations of Physics IV Honors. Therefore, students electing to take the Honors Physics track are recommended to also take Foundations of Physics III & IV Honors.

Required Courses

- NEUR-SHU 100  Math Tools for Life Sciences or Biostatistics
- BIOL-SHU 250  Organismal Systems
- CHEM-SHU 225  Organic Chemistry I
- CHEM-SHU 225L  Organic Chemistry I Lab
- BIOL-SHU 998  Integrated Science Capstone (This course must be taken in senior year)

Biology Electives - Choose Five

Students are strongly encouraged (but not required) to take Organic Chemistry II as a general elective.

Sample Courses:

- BIOL-SHU 30  Genetics
- BIOL-SHU 31  Genetics Laboratory
- BIOL-SHU 271  Cell Biology: Body’s Battle with Cancer
- BIOL-SHU 261  Genomics and Bioinformatics
- BIOL-SHU 263  Developmental Biology
- BIOL-SHU 314  Advanced Cell Biology Lab
- BIOL-SHU 997  Independent Research (Note that one 4-credit Independent Study is allowed to count towards the Biology major elective)
• CHEM-SHU 881  Biochemistry I
• CHEM-SHU 882  Biochemistry II
• NEUR-SHU 201  Introduction to Neuroscience

Note: Pre-health students may wish to take Introduction to Psychology or another relevant social sciences course, as required or recommended by some medical schools. Students interested in pursuing careers in the health sciences should meet with advising staff early on to ensure adequate course planning.

**Biology Minor (For details see “Requirements for Minors” section)**
This is just one example of how a student could organize their courses if pursuing a Biology major. It assumes a student begins taking Biology major courses in the first semester of their first year. Sample Schedule 2 offers an alternate plan that involves beginning to pursue a Biology major in the spring semester of the first year. Students may propose alternative schedules to their advisors as well.

### Year 1

**Fall Semester**
- Global Perspectives on Society
- Core Class (Calculus)
- 8 credits: General Physics I/Foundations of Physics I Honors, Foundations of Chemistry I, and Foundations of Physics Lab I
- 2 credits: Chinese or EAP

**Spring Semester**
- Writing as Inquiry
- Core Class
- 8 credits: Foundations of Biology I, Foundations of Chemistry II, and Foundations of Chemistry II Lab
- 2 credits: Chinese or EAP

### Year 2

**Fall Semester**
- Perspectives on the Humanities
- 5 credits: Organic Chemistry I + Organic Chemistry I Lab
- 5 credits: Foundations of Biology II and Foundations of Biology Lab
- Chinese or General Elective

**Spring Semester**
- 5 credits: General Physics II/Foundations of Physics II Honors, and Foundations of Physics Lab II
- Organismal Systems
- Math Tools for Life Sciences
- Chinese or EAP, or General Elective (Organic Chemistry II for pre-med students)

### Year 3

**Fall Semester**
- Biology Elective
- Biology Elective
- Chinese or General Elective
- General Elective

**Spring Semester**
- Biology Elective
- General Elective
- General Elective
- General Elective

### Year 4

**Fall Semester**
- Biology Elective
- General Elective
- General Elective
- General Elective

**Spring Semester**
- Integrated Science Capstone
- Biology Elective
- General Elective
- General Elective
## BIOLOGY
### SAMPLE SCHEDULE 2

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<tr>
<th>Year 1</th>
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<th>Spring Semester</th>
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<tr>
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<td>Global Perspectives on Society</td>
<td>Writing as Inquiry</td>
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<tr>
<td></td>
<td>Core Class (Calculus)</td>
<td>Core Class</td>
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<tr>
<td></td>
<td>3 credits: Foundations of Biology I</td>
<td>Chinese or EAP, or General Elective</td>
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<table>
<thead>
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<th>Spring Semester</th>
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<td>Perspectives on the Humanities</td>
<td>Math Tools for Life Sciences</td>
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<tr>
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<td>Chinese or General Elective</td>
<td>3 credits: Foundations of Chemistry II</td>
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<tr>
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<td>5 credits: Organic Chemistry I + Organic Chemistry I Lab</td>
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<tr>
<td></td>
<td>5 credits: General Physics I/Foundations of Physics I Honors, and Foundations of Physics Lab I</td>
<td>General Elective</td>
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|        | 5 credits: General Physics II/Foundations of Physics II Honors, and Foundations of Physics Lab II | Integrated Science Capstone |

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Chemistry is the study of the world of molecules: how they are created from atoms, how their structures affect their chemical and physical properties, and how they unite or assemble to form the matter that makes up the physical world. Knowledge of chemistry is fundamental to an in-depth understanding of the structural properties and biochemical reactions that define all living systems. Chemistry is therefore the central science that bridges physics and the life sciences, and is a foundation to many other fields, such as materials science, earth science, and forensic science. The challenges that society faces in the twenty-first century, such as managing climate change, sourcing clean energy, and ensuring food security, are at their root chemical problems. With a global perspective and a broad science curriculum at its core, our chemistry major program gives students a comprehensive outlook necessary to tackle these challenges.

A key characteristic of the chemistry major at NYU Shanghai is a good balance between depth and breadth of study: following the foundational science courses in chemistry and physics, students take the essential “canon” of organic chemistry and physical chemistry lectures and labs. Students then have flexibility in choosing three or more chemistry electives in areas of specialization that interest them, including Inorganic Chemistry, Analytical Chemistry, Computational Chemistry, and Biochemistry courses. A distinguishing feature of chemistry is the importance of creativity, whether it be in synthesizing new molecules, discovering novel reactions and materials, or developing new theories of matter. All chemistry students undertake a research or literature review project during their senior year in an Integrate Science Capstone course. Students who are pursuing careers in academic or industrial research are encouraged to undertake two or more semesters of research with faculty, potentially culminating in an undergraduate thesis and chemistry honors.

Majoring in chemistry provides good preparation for graduate study in chemistry and related fields, such as biochemistry, biomedicine, and materials science. Chemistry major students are also well prepared for professional school, including medical, pharmacy, dental, optometry, veterinary, forensic, and law school. Students who, instead, decide to enter industry after graduation are well-served by the combination of creative and quantitative skills developed in the chemistry major that transfer to diverse sectors from data science to biotechnology to finance.
REQUIREMENTS FOR THE MAJOR

Note: Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement. Requirements may be met through equivalent courses in NYU’s global network with prior approval.

Foundational Courses

- CHEM-SHU 125 Foundations of Chemistry I
- CHEM-SHU 126 Foundations of Chemistry II
- CHEM-SHU 127 Foundations of Chemistry I Lab
- CHEM-SHU 128 Foundations of Chemistry II Lab
- PHYS-SHU 11 General Physics I OR
- PHYS-SHU 91 Foundations of Physics I Honors
- PHYS-SHU 12 General Physics II OR
- PHYS-SHU 93 Foundations of Physics II Honors
- PHYS-SHU 71 Foundations of Physics Lab I
- PHYS-SHU 94 Foundations of Physics Lab II

Notes:
1) Chemistry majors are strongly encouraged to complete the above classes in their first 2 years.

2) Chemistry majors are not required to take Foundations of Physics III Honors and may substitute Foundations of Physics I & II Honors for General Physics I & II.

3) Relationship between General Physics and Foundations of Physics Honors: General Physics I & II are a calculus-based courses for science majors, pre-meds, engineers and others who want a broad introduction and survey of basic physics including classical mechanics, electricity and magnetism, optics and waves, and thermal and statistical physics. Foundations of Physics I-IV Honors cover a similar set of topics in considerably greater depth, plus special relativity and an introduction to quantum mechanics, over four semesters, and these courses are recommended for students with a strong high-school background in physics and mathematics. While Foundations of Physics I & II Honors meet the requirements for a Chemistry major, taken alone, these courses do not include some important topics, such as optics, thermal and statistical physics, mechanics, and condensed matter physics. Therefore, students electing to take the Honors Physics track are recommended to also take Foundations of Physics III & IV Honors. Students with a strong high-school background in physics and mathematics are also recommended to take Foundations of Physics I-IV Honors.

Required Courses

- CHEM-SHU 225 Organic Chemistry I + Organic Chemistry I Lab
- CHEM-SHU 226 Organic Chemistry II + Organic Chemistry II Lab
- CHEM-SHU 651 Physical Chemistry: Quantum Mechanics and Spectroscopy (taken in Shanghai)
- CHEM-SHU 652 Physical Chemistry: Thermodynamics and Kinetics (taken in Shanghai)
- CHEM-SHU 661 Physical Chemistry Laboratory
- MATH-SHU 151 Multivariable Calculus
- CHEM-SHU 998 Integrated Science Capstone

Chemistry Electives - Choose Three

- CHEM-SHU 285 Experimental Biochemistry
- CHEM-SHU 310 Biophysical Chemistry
- CHEM-SHU 312 Analytical Chemistry
- CHEM-SHU 711 Inorganic Chemistry
- CHEM-SHU 752 Computational Chemistry
- CHEM-SHU 881 Biochemistry I
- CHEM-SHU 882 Biochemistry II
- CHEM-SHU 997 Independent Study
Notes:
1) The Integrated Science Capstone must be taken in the year of graduation.

2) Physical Chemistry: Quantum Mechanics and Spectroscopy and Physical Chemistry: Thermodynamics and Kinetics should be taken in Shanghai. In the event that either of these courses is not offered, students may take an equivalent course in NYU’s global network, with prior approval.

3) Students interested in pursuing graduate study in Chemistry are strongly encouraged to take Inorganic Chemistry.

4) Graduate courses in chemistry may be taken for undergraduate credit and can satisfy a Chemistry Elective requirement, with prior approval. Graduate courses offered in Shanghai include CHEM-GA 9627: Computational Chemistry and CHEM-GA 9666: Advanced Statistical Mechanics and Quantum Chemistry.

5) Additional advanced chemistry courses in NYU’s global network can also meet the Chemistry Electives requirement. Students should consult with their Academic Advisor for further details.

General Electives
Students may take any courses in NYU’s global network to satisfy the general elective requirements, but are strongly encouraged to take the following mathematics and computer science courses.

Recommended Mathematics General Electives:
- MATH-SHU 235 Probability and Statistics
- MATH-SHU 265 Linear Algebra and Differential Equations

Recommended Computer Science General Electives:
- CSCI-SHU 11 Introduction to Computer Programming
- CSCI-SHU 101 Introduction to Computer and Data Science

Research Opportunities
NYU Shanghai boasts a world-class research environment across multiple fields of Chemistry. Students are strongly encouraged to begin research with faculty members as early as freshman or sophomore year, and research opportunities are available during the semesters and over the winter and summer breaks. Students particularly interested in conducting research in Shanghai over the summer are encouraged to apply for DURF grants awarded by the university.

Chemistry Honors
Students who meet GPA eligibility requirements laid out elsewhere in the bulletin may pursue Chemistry Honors. Honors-track students conduct two semesters of research with a faculty member for a total of 6 credits of Independent Study and culminating in a 2-credit Undergraduate Thesis course in the year of graduation. Honors-track students are not required to take the Integrated Science Capstone course, although they are strongly encouraged to audit it. Students who switch to the Honors track after taking the Integrated Science Capstone may have 4 credits of Independent Study waived with prior approval, but will need to complete an additional 2 credits of Independent Study and the 2-credit Undergraduate Thesis course.

Chemistry Minor (For details see “Requirements for Minors” section)
This is just one example of how a student could organize their courses if pursuing a chemistry major. It assumes a student begins taking chemistry courses in the first semester of their first year. Sample Schedule 2 offers an alternate plan that pursues a chemistry major beginning in the fall semester of the second year. Students may propose alternative schedules to their advisors as well.

### Year 1

#### Fall Semester

| Global Perspectives on Society | Core Class (Calculus) | 8 credits: Foundations of Chemistry I, Foundations of Chemistry I Lab, and General Physics I/Foundations of Physics I Honors | 2 credits: Chinese or EAP |
| Writing as Inquiry | Multivariable Calculus | 8 credits: Foundations of Chem. II, Foundations of Chemistry II Lab, General Physics II/Foundations of Physics II Honors | 2 credits: Chinese or EAP |

#### Spring Semester


### Year 2

#### Fall Semester

| Perspectives on the Humanities | 5 credits: Organic Chemistry I + Lab | 2 credits: Foundations of Physics Lab I | Core, Chinese or General Elective |
| Core Class | 5 credits: Organic Chemistry II + Lab | 2 credits: Foundations of Physics Lab II | Chinese or EAP, or General Elective |

#### Spring Semester


### Year 3

#### Fall Semester

| Physical Chemistry: Quantum Mechanics and Spectroscopy | Chemistry Elective | Chinese or General Elective | General Elective |
| Physical Chemistry Laboratory | Chemistry Elective, e.g., Inorganic Chemistry | Chemistry Elective | Chinese or General Elective |

#### Spring Semester (Study Away)


### Year 4

#### Fall Semester

| Integrated Science Capstone | Physical Chemistry: Thermodynamics and Kinetics | General Elective | General Elective |
| General Elective | General Elective | General Elective | General Elective |

#### Spring Semester

| General Elective | General Elective | General Elective | General Elective |
CHEMISTRY
SAMPLE SCHEDULE 2

Year 1

Fall Semester
- Global Perspectives on Society
- Core Class
- Core or General Elective
- Chinese or EAP

Spring Semester
- Writing as Inquiry
- Core Class (Calculus)
- Core or General Elective
- Chinese or EAP

Year 2

Fall Semester
- Perspectives on the Humanities
- 10 credits: Foundations of Chemistry I, Foundations of Chemistry I Lab, General Physics I/Foundations of Physics I Honors, and Foundations of Physics I Lab II
- No Class
- Chinese or General Elective

Spring Semester
- Multivariable Calculus
- 10 credits: Foundations of Chemistry II, Foundations of Chemistry II Lab, General Physics II/Foundations of Physics II Honors, and Foundations of Physics II Lab II
- No Class
- Chinese or General Elective

Year 3

Fall Semester
- 5 credits: Organic Chemistry I + Lab
- Physical Chemistry: Quantum Mechanics and Spectroscopy
- Chemistry Elective
- Chinese or General Elective

Spring Semester (Study Away)
- 5 credits: Organic Chemistry II + Lab
- Physical Chemistry Laboratory
- Chemistry Elective
- Chinese or General Elective

Year 4

Fall Semester
- Integrated Science Capstone
- Physical Chemistry: Thermodynamics and Kinetics
- Chemistry Elective
- General Elective

Spring Semester
- General Elective
- General Elective
- General Elective
- General Elective
The best way to understand the world you live in is arguably to understand the economics that drive it. The world is constantly and increasingly confronted with public policy issues that are essentially economic in character. Economic analysis provides a coherent and logical ordered framework for examining these issues and understanding the tradeoffs involved in attempting to solve social and business problems.

The economics curriculum at NYU Shanghai is designed to introduce students to these fundamental dynamics of human life and, in doing so, is grounded in three basic pedagogical principles:

• Undergraduate students must be exposed to the “big ideas” and pressing social issues of our world and given economic frameworks for thinking about them.

• Meaningful study of economics requires being able to think about problems from local, regional, and global perspectives. Understanding how individuals make decisions also requires incorporating insights from neuroscience and psychology.

• Effective economic analysis increasingly involves both conducting and effectively communicating the results from quantitative analyses of data using econometric methods.

Building on these principles, the Economics major is designed to foster rigorous analytical abilities both in neoclassical and behavioral economics, critical writing and communication skills, and the capacity to use and interpret statistical data—all in the service of developing sound economic reasoning and problem-solving skills. These transferable strengths are of value in a broad array of academic and professional paths, from economics, business, or law, to public service or graduate studies.
REQUIREMENTS FOR THE MAJOR

Economics major students must either take Calculus (MATH-SHU 131), place out of Calculus, or take Honors Calculus, in order to satisfy the Mathematics requirement in the core curriculum.

Required Courses

- ECON-SHU 1 Principles of Macroeconomics OR ECON-SHU 251 Economics of Global Business
- ECON-SHU 3 Microeconomics OR ECON-SHU 2 Principles of Microeconomics
- ECON-SHU 10 Intermediate Microeconomics
- ECON-SHU 202 Intermediate Macroeconomics
- ECON-SHU 301 Econometrics
- MATH-SHU 235 Probability and Statistics OR BUSF-SHU 101 Statistics for Business and Economics

Economics Electives - 24 Credits, at least 8 credits must be from “Advanced Economics Electives” and one course must be from “Economics Capstone Electives”

Advanced Economics Electives

- ECON-SHU 201 Mathematics for Economists (substituted by taking both Linear Algebra AND Multivariable Calculus)
- ECON-SHU 210 Market Design
- ECON-SHU 225 Advanced Economic Theory
- ECON-SHU 315 Competitive Analysis
- ECON-SHU 402 Advanced Econometrics
- ECON-SHU 409 Advanced Topics in Macroeconomics
- ECON-SHU 416 Game Theory: Advanced Applications
- ECON-SHU 423 Econometrics for High Dimensional and Financial Data

Economics Electives

- BPEP-SHU 9042 The Political Economy of East Asia
- BPEP-SHU 238 International Economics
- ECON-SHU 5 Math for Econ 1: Optimization
- ECON-SHU 207 Urban and Real Estate Economics
- ECON-SHU 208 Money and Banking
- ECON-SHU 213 Causal Inference in the Social Sciences
- ECON-SHU 215 Economic History
- ECON-SHU 216 Introduction to Game Theory
- ECON-SHU 218 International Trade and Chinese Economy
- ECON-SHU 219 China's Economics Transition
- ECON SHU 221 China's Financial System
- ECON-SHU 232 Blockchain, Cryptocurrency, and Money
- ECON-SHU 238 History of Modern Economic Growth: Exploring China From a Comparative Perspective
- ECON-SHU 239 Topics in Economics in Transition: Exploring China
- ECON-SHU 260 International Trade
- ECON-SHU 306 Economics of Education
- ECON-SHU 316 Industrial Organization
• ECON-SHU 317 Quantitative Methods for the Economics of Gender
• ECON-SHU 332 Monetary Economics
• ECON-SHU 335 Development Economics
• ECON-SHU 336 Macroeconomic Policy
• ECON-SHU 338 International Economics
• ECON-SHU 342 Behavioral Economics
• ECON-SHU 349 Health Economics
• ECON-SHU 351 Labor Economics
• ECON-SHU 353 Public Economics
• ECON-SHU 355 Law and Economics
• ECON-SHU 356 Antitrust and Competition Policy in the Digital Era
• ECON-SHU 360 Experimental Economics
• ECON-SHU 368 Financial Economics
• ECON-SHU 360 Experimental Economics
• ECON-SHU 368 Financial Economics
• ECON-SHU 997 Economics Independent Study

Economics Capstone Electives
Note: Both courses are offered in fall-spring sequences, with 2 credits each semester.

• ECON-SHU 400 Economics Capstone Research OR
  ECON-SHU 453 Economics Honors Program (same as BUSF-SHU 3 Business Honors Program)

Economics Minor (For details see “Requirements for Minors” section)
This is just one example of how a student could organize their courses if pursuing an Economics major. It assumes a student begins taking Economics major courses in the first year. Sample Schedule 2 offers an alternate plan that begins in the second year. Students may propose alternative schedules to their advisors as well.

### Sample Schedule 1

#### Year 1

**Fall Semester**
- Global Perspectives on Society
- Core Class (Calculus)
- Core or Principles of Macroeconomics
- Chinese or EAP

**Spring Semester**
- Writing as Inquiry
- Microeconomics
- Probability and Statistics or alternate courses
- Chinese or EAP

#### Year 2

**Fall Semester**
- Perspectives on the Humanities
- Intermediate Microeconomics
- Principles of Macroeconomics or Econometrics
- Chinese or Core

**Spring Semester**
- Intermediate Macroeconomics
- Econometrics or Multivariate Calculus
- Economics Elective or Core
- Chinese or Core

#### Year 3

**Fall Semester**
- Core Class
- Economics Elective
- General Elective
- General Elective

**Spring Semester**
- Core Class
- Economics Elective
- Advanced Economics Elective
- General Elective

#### Year 4

**Fall Semester**
- Core Class
- Economics Capstone Elective (2 credits)
- Advanced Economics Elective
- General Elective

**Spring Semester**
- Core Class
- Economics Capstone Elective (2 credits)
- General Elective
- General Elective
# ECONOMICS

## SAMPLE SCHEDULE 2

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<td>Principles of Macroeconomics</td>
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</table>
China is once again a major force in the world. Beyond the scope of conventional area studies, the innovative interdisciplinary major in Global China Studies allows students to cultivate up-to-date knowledge and critical skills about China. It aims at deepening their understanding of China's interactions with the wider world as well as comprehending the trends within China, at individual, societal, state, and global levels, and in the context of socio-economic, religious, cultural, and political transformations.

The Global China Studies major offers two options. Students may opt to take the track that requires an extensive study of China in a global setting through the completion of an interdisciplinary curriculum without the need for additional Chinese language courses. They could also choose the advanced track option, which trains students to acquire a higher level of Chinese proficiency in addition to developing focused research skills needed for postgraduate professional and academic pursuits. In either case, majors in Global China Studies will graduate with the capacity to become qualified practitioners and thinkers of a changing China in the world.
REQUIREMENTS FOR THE MAJOR

GCS Major Requirements: 36 credits
This track is for students interested in developing in-depth knowledge about China through the study of Chinese history, society, literature, arts, and politics in a global setting with an emphasis on innovative research methods. Students must take a wide range of courses on China and are encouraged to complete a minor of their choosing. This track is recommended for students who plan to seek employment in the private sector, research institutions, or admission into graduate school.

Required Courses: 20 credits

GCHN-SHU 110 The Concept of China (4 credits)

China and the World: Choose Two (8 credits)
Courses in this category focus on China in a broader global setting, concentrating on its contacts, historical and/or contemporary, with the outside world. The aim is to examine the dynamics of Chinese history, politics, economy, and culture as interconnected and integrated with various regions of the world. Select two of the following:

- GCHN-SHU 164 The History of the Silk Road
- GCHN-SHU 165 China and the Islamic World
- GCHN-SHU 234 Dunhuang and Its Global Connections
- GCHN-SHU 264 Chinese Migrant and Diasporic Network
- HIST-SHU 250 Tianxia: Traditional China and the World
- HIST-SHU 312 China Encounters the World
- SCA-SHU 9634 Global Connections: Shanghai
- SOCS-SHU 341 Cross-Strait Relations

Two-semester Capstone Course (8 credits)
Fall Semester: Methodologies in China Studies; Spring Semester: Research Project Seminar.

The first semester of this two-semester capstone course will focus on the methodologies of China-related research, examining the importance and shortcomings of Chinese primary sources and data, familiarizing with and learning how to access and use key archives, museums, libraries, research tools, databases, and digital websites, and analyzing some of the pivotal books and articles on China. Students will also draft a research proposal, with a preliminary bibliography, and identify a faculty mentor for the second semester of the capstone course. During the second semester, students will work primarily with their respective mentors, but are required to also participate and make presentations at a weekly research seminar. Those opting for GCS major do not have to demonstrate competency in reading and analyzing Chinese language sources.

Global China Studies Electives (16 credits)
Choose four courses from the list, with at least one course from each of the following three categories:

1. Chinese History, Society, and Culture
Courses in this category focus on the examination of aspects and periods of Chinese history, social values and conditions, and cultural traditions and practices.

Sample Courses:
- GCHN-SHU 224 Chinese Maritime History
- GCHN-SHU 231 Social and Cultural Debates in 20th Century China
- GCHN-SHU 236 Immersive Narrative of Chinese Monuments
- GCHN-SHU 255 Eat, Pray, Ponder: Chinese Intellectual Culture Through Ages
- GCHN-SHU 267 The Cultivated City
- GCHN-SHU 275 Memory Politics in China
- GCHN-SHU 351 Buddhism, Nature and Technology in the Chinese World
- HIST-SHU 145 Food in Chinese History
- HIST-SHU 153 History of Modern China
2. Chinese Media, Arts, and Literature
Courses in this category examine the artistic and literary productions by the Chinese in and outside China, as well as the trends in print, audio-visual, digital and social media.

Sample Courses:
- GCHN-SHU 116 Traditional Chinese Literature from the Beginning to 1911
- GCHN-SHU 156 History of Chinese Art
- GCHN-SHU 205 Hong Kong Cinema
- GCHN-SHU 211 Chinese Architecture
- GCHN-SHU 263 Voices from the Margin: Modern Chinese and Sinophone Studies
- ART-SHU 9077 Contemporary Art & New Media in China
- LIT-SHU 226 History of Chinese Cinemas
- JOUR-SHU 203 Journalism and Society in China
- HUMN-SHU 366 Shanghai Stories
- MCC-SHU 9451 The Media in China

3. The Politics, Economy, and Environment of China
Courses in this category examine the contemporary political, economic, legal, and environmental theories, policies, and practices in the People’s Republic of China.

Sample Courses:
- GCHN-SHU 240 Modern Chinese Governance
- GCHN-SHU 243 Chinese Environmental Studies
- GCHN-SHU 246 Youth and Consumer Culture in China
- GCHN-SHU 250 Geographies of China
- GCHN-SHU 265 Women in China: From May 4th to Me Too & Beyond
- SOCS-SHU 133 Urbanization in China
- BUSF-SHU 288 Doing Business in China
- CCSF-SHU 123 Contemporary Chinese Political Thought
- ECON-SHU 238 History of Modern Economic Growth: Exploring China from a Comparative Perspective

Study Abroad: Students enrolled in this track may study abroad for a maximum of two semesters.

Global China Studies Minor (For details see “Requirements for Minors” section)
Global China Studies
SAMPLE SCHEDULE 1

Year 1
Fall Semester
- Global Perspectives on Society
- Core Class
- Core Class
- Chinese or EAP, Core, or General Elective

Spring Semester
- Writing as Inquiry
- Core Class
- The Concept of China
- Chinese or EAP, Core, or General Elective

Year 2
Fall Semester
- Perspectives on the Humanities
- China and the World
- GCS Elective
- Core, Chinese, or General Elective

Spring Semester
- China and the World
- GCS Elective
- Core Class
- Core, Chinese, or General Elective

Year 3
Fall Semester
- GCS Elective
- General Elective
- General Elective
- General Elective

Spring Semester
- GCS Elective
- General Elective
- General Elective
- General Elective

Year 4
Fall Semester
- General Elective
- GCS Capstone
- Core Class
- General Elective

Spring Semester
- General Elective
- GCS Capstone
- General Elective
- General Elective
Requirements for the Major

Advanced GCS Track Major Requirements: 40 credits
This advanced track is for students interested in combining advanced training in the Chinese language with a deep knowledge of Chinese history, society, literature, arts, and politics in a global setting, as well as with an exploration of innovative research methodologies. It is recommended for students who plan to seek admission into graduate school, or employment in research institutions, governmental and non-governmental organizations in China or elsewhere that focus on China-related issues.

Required Courses: 28 credits

GCHN-SHU 110 The Concept of China (4 credits)

China and the World (4 credits)
Courses in this category focus on China in a broader global setting, focusing on its contacts (historical and/or contemporary) with the outside world. The aim is to examine the dynamics of Chinese history, politics, economy, and culture as interconnected and integrated with various regions of the world. Select one of the following:

- GCHN-SHU 164 The History of the Silk Road
- GCHN-SHU 165 China and the Islamic World
- GCHN-SHU 234 Dunhuang and Its Global Connections
- GCHN-SHU 264 Chinese Migrant and Diasporic Networks
- HIST-SHU 250 Tianxia: Traditional China and the World
- HIST-SHU 312 China Encounters the World
- SCA-SHU 9634 Global Connections: Shanghai
- SOCS-SHU 341 Cross-Strait Relations

Language Courses (8 credits)

Non-Native Chinese Speakers: Any two Chinese language courses on or beyond the level of Advanced I (e.g., Advanced I & II; or Advanced II & one post-advanced course; or two post-advanced courses)
Native Chinese speakers are required to further develop their academic reading and writing skills as well as Classical Chinese reading abilities through two of the following classes

- GCHN-SHU 283 Reading and Viewing Modern China
- GCHN-SHU 233 Foreign Societies in Classical Chinese Writing
- GCHM-SHU 255 Eat, Pray, Ponder: Chinese Intellectual Culture Through Ages with special requirements
- Other courses with special requirements (ask GCS Area Leader)

Chinese for Advanced Undergraduate Research (4 credits)
This aim of these courses is to expand Chinese language research skills. Students will read, analyze, and use Chinese language sources to write, in English, response reports and research paper(s). The courses under this category will be taught in English. Select one of the following:

- GCHN-SHU 200 Topics in Global China Studies: Introduction to Classical Chinese
- GCHN-SHU 233 Foreign Societies in Classical Chinese Writing
- GCHN-SHU 283 Reading and Viewing Modern China
- GCHN-SHU 316 Chinese Art and Architecture in Cross-Cultural Contexts

Two-semester Capstone Course (8 credits)
Fall Semester: Methodologies in China Studies; Spring Semester: Research Project Seminar.

The first semester of this two-semester capstone course will focus on the methodologies of China-related research, examining the importance and shortcomings of Chinese primary sources and data, familiarizing with and learning how to access and use key archives, museums, libraries, research tools, databases, and digital websites, and analyzing some of the pivotal books and articles on China. Students will also draft a research proposal, with a preliminary bibliography, and identify a faculty mentor for the second semester of the capstone course. During the second semester, students will work primarily with their respective mentors, but are required to also participate and make presentations at a weekly research seminar. Those opting for Advanced GCS major must demonstrate competency in reading and analyzing Chinese language sources.
Global China Studies Electives (12 credits)
Take one course each from the following three categories:

1. Chinese History, Society, and Culture
Courses in this category focus on the examination of aspects and periods of Chinese history, social values and conditions, and cultural traditions and practices.

Sample Courses:
- GCHN-SHU 224 Chinese Maritime History
- GCHN-SHU 231 Social and Cultural Debates in 20th Century China
- GCHN-SHU 236 Immersive Narrative of Chinese Monuments
- GCHN-SHU 255 Eat, Pray, Ponder: Chinese Intellectual Culture Through Ages
- GCHN-SHU 267 The Cultivated City
- GCHN-SHU 275 Memory Politics in China
- GCHN-SHU 351 Buddhism, Nature and Technology in the Chinese World
- HIST-SHU 145 Food and Drugs in Chinese History
- HIST-SHU 153 History of Modern China
- PHIL-SHU 105 Introduction to Chinese Philosophy
- RELS-SHU 9270 Religion and Society in China
- SOCS-SHU 236 The Chinese Family
- SOCS-SHU 254 Ethnographies of Change in China

2. Chinese Media, Arts, and Literature
Courses in this category examine the artistic and literary productions by the Chinese in and outside China, as well as the trends in print, audio-visual, digital and social media.

Sample Courses:
- GCHN-SHU 116 Traditional Chinese Literature from the Beginning to 1911
- GCHN-SHU 156 History of Chinese Art
- GCHN-SHU 205 Hong Kong Cinema
- GCHN-SHU 211 Chinese Architecture
- GCHN-SHU 263 Voices from the Margin: Modern Chinese and Sinophone Studies
- ART-SHU 9077 Contemporary Art & New Media in China
- LIT-SHU 226 History of Chinese Cinemas
- JOUR-SHU 203 Journalism and Society in China
- HUMN-SHU 366 Shanghai Stories
- MCC-SHU 9451 The Media in China

3. The Politics, Economy, and Environment of China
Courses in this category examine the contemporary political, economic, legal, and environmental theories, policies, and practices in the People's Republic of China.

Sample Courses:
- GCHN-SHU 240 Modern Chinese Governance
- GCHN-SHU 243 Chinese Environmental Studies
- GCHN-SHU 246 Youth and Consumer Culture in China
- GCHN-SHU 250 Geographies of China
- GCHN-SHU 265 Women in China: From May 4th to Me Too & Beyond
- SOCS-SHU 133 Urbanization in China
- BUSF-SHU 288 Doing Business in China
- CCSF-SHU 123 Contemporary Chinese Political Thought
- ECON-SHU 238 History of Modern Economic Growth: Exploring China from a Comparative Perspective

Study Abroad: Students enrolled in the Advanced Global China Studies track may only spend no more than one semester abroad.

Global China Studies Minor (For details see “Requirements for Minors” section)
# Advanced Global China Studies

## SAMPLE SCHEDULE 1

For students who have advanced Chinese language skills and start to take Advanced Chinese I course in their first semester of second year.

Students enrolled in the Advanced Global China Studies track may only spend no more than one semester abroad.

### Year 1

<table>
<thead>
<tr>
<th>Fall Semester</th>
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<tbody>
<tr>
<td><strong>Global Perspectives on Society</strong></td>
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<tr>
<td><strong>Core Class</strong></td>
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<td><strong>Core Class</strong></td>
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<td>Chinese or EAP, Core, or General Elective</td>
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<th>Spring Semester</th>
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<tbody>
<tr>
<td><strong>Writing as Inquiry</strong></td>
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<tr>
<td><strong>Core Class</strong></td>
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<tr>
<td><strong>The Concept of China</strong></td>
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<tr>
<td>Chinese or EAP, Core, or General Elective</td>
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### Year 2

<table>
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<th>Fall Semester</th>
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<tbody>
<tr>
<td><strong>Perspectives on the Humanities</strong></td>
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<tr>
<td><strong>China and the World</strong></td>
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<tr>
<td><strong>Advanced Chinese Course 1</strong></td>
</tr>
<tr>
<td>Core or General Elective</td>
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</tbody>
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<table>
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<tr>
<th>Spring Semester</th>
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<tr>
<td><strong>GCS Elective</strong></td>
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<tr>
<td><strong>Advanced Chinese Course 2</strong></td>
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<tr>
<td><strong>Core Class</strong></td>
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<td>Core, Chinese, or General Elective</td>
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### Year 3

<table>
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<td><strong>General Elective</strong></td>
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<td><strong>General Elective</strong></td>
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<td>General Elective</td>
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<th>Spring Semester</th>
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<tbody>
<tr>
<td><strong>GCS Elective</strong></td>
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<tr>
<td><strong>Chinese for Advanced Undergraduate Research</strong></td>
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<tr>
<td><strong>General Elective</strong></td>
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<td>General Elective</td>
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### Year 4

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<tbody>
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<td><strong>General Elective</strong></td>
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<tr>
<td><strong>GCS Capstone</strong></td>
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<tr>
<td><strong>Core Class</strong></td>
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<td>General Elective</td>
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<table>
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<tr>
<th>Spring Semester</th>
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<tbody>
<tr>
<td><strong>GCS Capstone</strong></td>
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<td><strong>General Elective</strong></td>
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<td><strong>General Elective</strong></td>
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<tr>
<td>General Elective</td>
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</tbody>
</table>
# Advanced Global China Studies

**SAMPLE SCHEDULE 2**

## Year 1

### Fall Semester
- **Global Perspectives on Society**
- **Core Class**
- **Core Class**
- **Chinese or EAP, Core, or General Elective**

### Spring Semester
- **Writing as Inquiry**
- **Core Class**
- **Core or General Elective**
- **Chinese or EAP, Core, or General Elective**

## Year 2

### Fall Semester
- **Perspectives on the Humanities**
- **The Concept of China**
- **Core or General Elective**
- **Core or Chinese**

### Spring Semester
- **China and the World**
- **GCS Elective**
- **Core Class**
- **Core or Chinese**

## Year 3

### Fall Semester
- **General Elective**
- **Advanced Chinese Language Course 1**
- **GCS Elective**
- **General Elective**

### Spring Semester
- **GCS Elective**
- **Advanced Chinese Language Course 2**
- **General Elective**
- **General Elective**

## Year 4

### Fall Semester
- **GCS Capstone**
- **Chinese for Advanced Undergraduate Research**
- **Core Class**
- **General Elective**

### Spring Semester
- **GCS Capstone**
- **General Elective**
- **General Elective**
- **General Elective**

For students who start to take Advanced Chinese I in their first semester of third year.
The Humanities major combines a rigorous general education in the humanities with a concentrated focus on a particular discipline or theme. The requirements for the major are designed to allow students to construct a program of study that fits their own intellectual interests.

The curriculum is cross-cultural in foundation and reflects the interdisciplinary strength of our faculty in areas including art history, history, philosophy, literature, religion, film and media, the visual and performing arts, and science and technology studies. The Humanities faculty teach courses that span the globe, covering the histories and contemporary cultures of Asia, Africa, Europe and the Americas. In these courses, students learn to employ multiple disciplinary perspectives and to engage with a wide range of different sources, from literary fiction to courtroom trial transcripts, from classical paintings to contemporary political cartoons and posters.

The Humanities major provides students with advanced skills in critical reading, academic writing, visual arts creation, interpretation, analysis and argument that are highly valuable and readily transferable to a spectrum of careers, including law, cultural production, contemporary art curation, journalism, and non-fiction writing. While some Humanities majors pursue post-graduate degrees, many others successfully use the skills they develop in their Humanities studies to pursue a wide range of career paths.

In introductory and foundations courses, students acquire a set of methods for humanistic inquiry. Students then develop an area of thematic or disciplinary focus by choosing advanced courses in Shanghai and other NYU sites in consultation with their advisors. While students may choose to focus on a particular discipline, at least one advanced course must be explicitly interdisciplinary in orientation. In their senior year, students take the two semester Capstone Course sequence and produce a final thesis that marks the culmination of their intellectual development.
REQUIREMENTS FOR THE MAJOR

Humanities Major Requirements: 46 credits
Students must take the following courses in order to meet the requirements for the Humanities major:

Introductory Courses (16 credits total, at least 8 credits of which must be Foundations courses)

Foundations Courses - Choose at least 8 credits from this category
Foundations Courses are a sub-species of Introductory Courses that provide students with a reflective introduction to the methods and/or fundamental theories in a particular discipline. Appropriate introductory courses offered by faculty from other majors may also be classified as Foundations courses for purposes of the Humanities major.

Courses that satisfy this requirement include but are not limited to:
- ART-SHU 101 What is Art?
- ART-SHU 111 Foundations: What is Art History?
- HIST-SHU 101 Foundations: What is History?
- HUMN-SHU 110 Foundations: What is Science and Technology Studies?
- LIT-SHU 101 Foundations: What is Literature?
- PHIL-SHU 101 Foundations: What is Philosophy?

Other Introductory Courses
If you take more than two Foundations courses, the first two count towards the Foundations requirement, and the remaining count towards the general Introductory course requirement.
Additional courses that satisfy the general Introductory course requirement include but are not limited to:
- ART-SHU 610 Art is a Hammer
- HIST-SHU 110 U.S. History Through Literature and Film
- HIST-SHU 130 Western Culture is not I, II, Ill: Arab-Islamic Influences on the West
- HIST-SHU 153 History of Modern China Since 1840
- HIST-SHU 155 Chinese American History: From the California Gold Rush to the Cold War (fulfills IPC requirement)
- HIST-SHU 156 Europe since 1945
- HIST-SHU 208 Europe's Long Twentieth Century
- HIST-SHU 210 History of Death, Dying & Grief
- HIST-SHU 302 History of Water (fulfills STS requirement)
- HUMN-SHU 168 Penning the Self(ie): Orality, Literacy, Digitality, and the Literary Subject
- HUMN-SHU 180 Korean Culture and Society through K-pop
- HUMN-SHU 200 French Cinema: The Birth of the Seventh Art
- HUMN-SHU 231 Contemporary Art History and Theory in North America and Europe
- LIT-SHU 125 Literature in La Belle Époque
- LIT-SHU 190 Women's World Literature in the Long 19th Century
- PHIL-SHU 40 Ethics
- PHIL-SHU 70 Logic (fulfills AT requirement)
- PHIL-SHU 80 Philosophy of Mind
- PHIL-SHU 105 Introduction to Chinese Philosophy (fulfills IPC requirement)
- PHIL-SHU 107 Great Works in Philosophy
- CRWR-SHU 159 Introduction to Creative Writing

Visual Arts Praxis Foundational and Introductory Level Courses
Foundational and Introductory level Visual Arts Praxis Courses do not satisfy the general Humanities requirements but fulfill elective requirements and are a requirement for a Creative Capstone in the Visual Arts:
- ART-SHU 103 Foundations in Visual Arts
- ART-SHU 211 Foundations in Painting
- ART-SHU 255 Printmaking in an Expanded Field
Advanced Courses (24 credits total, at least 4 credits of which must be an Interdisciplinary Course, and at least 12 credits total must fit together thematically in a way that can serve as a basis for a capstone project)

Advanced Interdisciplinary Courses - Choose at least 4 credits from this category
Advanced Interdisciplinary Courses are a sub-species of Advanced Courses that are explicitly interdisciplinary in orientation. For example, they may involve both historical and literary approaches to a topic, or philosophical and historical approaches to a topic, or literary and philosophical approaches to a topic.

If you take more than one Advanced Interdisciplinary courses, the first counts towards the Advanced Interdisciplinary requirement, and the remainder count towards the general Advanced course requirement. Courses that fulfill this requirement include but are not limited to the following:

- HIST-SHU 303 Histories and Politics of Noise
- HUMN-SHU 366 Shanghai Stories
- HUMN-SHU 300 Representation, Language, and Power
- SOCS-SHU 229 Capitalism, Socialism, Communism: Theory and Practice
- SOCS-SHU 272 The U.S. Constitution: Is It Relevant to China?
- PHIL-SHU 90 Philosophy of Science (fulfills STS requirement)
- PHIL-SHU 91 Philosophy of Biology (fulfills STS requirement)
- PHIL-SHU 130 Philosophy of Technology (fulfills STS requirement)

Other Advanced Courses
In addition to those courses listed above as Advanced Interdisciplinary courses, additional courses that satisfy this requirement include but are not limited to:

- ART-SHU 629 The Villian
- HIST-SHU 232 Moments of Europe
- HIST-SHU 303 Histories and Politics of Noise
- HIST-SHU 239 New York: History of the City and its People
- HIST-SHU 225 Global Space Age
- HIST-SHU 209 Witches, Magic and the Witch Hunts in the Atlantic World, 1400-1700
- HIST-SHU 313 China Goes Global: How China and the World Transformed Each Other
- LIT-SHU 280 Empire and Literature in the 19th Century Britain
- CRWR-SHU 209 Intermediate Fiction Workshop: The Art of Personal Narrative

Advanced Visual Arts Praxis Courses
Advanced Visual Arts Praxis Courses do not satisfy the general Humanities requirements but fulfill elective requirements and are a requirement for a Creative Capstone in the Visual Arts:

- ART-SHU 250 Visual Culture and Social Art Practice
- ART-SHU 302 Photography II
- ART-SHU 307 Moving Images II
- ART-SHU 375 The Graphic Novel
- ART-SHU 1911 Projects in Studio Art

Advanced Courses - Explanation of 12-credit thematic requirement
At least 12 credits (usually three 4-credit courses) of your Advanced Courses must fit together thematically in a way that can serve as a basis for a capstone project. The aim of this requirement is to allow students to select a set of courses that builds towards a capstone project. Students should consult with their academic advisor and with Humanities professors to discuss how best to fulfill this requirement.

One example of a thematically linked sequence of courses (in this case a multidisciplinary sequence, linked by the topic of gender):
Another example of a thematically linked sequence of courses (in this case a disciplinary sequence, linked by the methodology of philosophy):

- PHIL-SHU 80 Philosophy of Mind
- PHIL-SHU 90 Philosophy of Science
- PHIL-SHU 91 Philosophy of Biology

**Capstone Sequence (6 credits total)**

In their final year, Humanities majors are required to complete a substantial research project during a two-semester sequence of courses. In the Fall semester, students earn 2 credits for enrolling in the Humanities Capstone Seminar (HUMN-SHU 400A). In the Spring semester, they may choose to either:

1. Complete their research project while again enrolling in the Humanities Capstone Seminar (HUMN-SHU 400), this time earning 4 credits; or
2. Complete their research project while enrolling in an Advanced 4-credit course, with the approval of the course instructor. Students selecting this option should inform their academic advisor and the Humanities Area Leader of their decision before the end of Fall semester.

**Creative Capstone in the Visual Arts**

Qualifying students may elect to complete a Creative Capstone in the Visual Arts. This requires completing an artistic project in addition to the research-based Capstone thesis: the Creative Capstone in Visual Arts is comprised of an artistic project, the research-based Humanities capstone thesis, and an artist statement. These three elements should form a unified project, with the expectation that the research-based capstone thesis is still the primary focus.

In order to qualify for the Creative Capstone in the Visual Arts, students must take ART-SHU 101 What is Art?, three Visual Arts Praxis courses at any level, and ART-SHU 1911 Projects in Studio Art.

**History Minor, Humanities Minor, Literature Minor, and Philosophy Minor (For details see “Requirements for Minors” section)**
This is just one example of how a student could organize their courses if pursuing a Humanities major. It assumes a student begins taking Humanities major courses in the first year. Sample Schedule 2 offers an alternate plan that begins in the second year. Students may propose alternative schedules to their advisors as well.

### Year 1

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Core Class</th>
<th>Core Class</th>
<th>Chinese or EAP, Core, or General Elective</th>
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<tbody>
<tr>
<td>Global Perspectives on Society</td>
<td>Writing as Inquiry</td>
<td>Humanities Introductory Course (Foundations)</td>
<td>Core Class or General Elective</td>
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<td>Chinese or EAP, Core, or General Elective</td>
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### Year 2

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Core Class</th>
<th>Humanities Introductory Course</th>
<th>Core Class or General Elective</th>
<th>Chinese, General Elective, or Chinese</th>
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</thead>
<tbody>
<tr>
<td>Perspectives on the Humanities</td>
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<td>Humanities Introductory Course (Foundations)</td>
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### Year 3

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<th>Fall Semester</th>
<th>Core or General Elective</th>
<th>Humanities Advanced Course (Interdisciplinary)</th>
<th>Humanities Advanced Course</th>
<th>General Elective</th>
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### Year 4

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<th>Fall Semester</th>
<th>Humanities Advanced Course</th>
<th>Humanities Advanced Course</th>
<th>2-credit Humanities Capstone Seminar</th>
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<table>
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</table>
# Humanities

## SAMPLE SCHEDULE 2

### Year 1

#### Fall Semester
- Global Perspectives on Society
- Core Class
- Core Class
- Chinese or EAP, or General Elective

#### Spring Semester
- Writing as Inquiry
- Core Class
- Core or General Elective
- Chinese or EAP, or General Elective

### Year 2

#### Fall Semester
- Perspectives on the Humanities
- Humanities Introductory Course (Foundations)
- Humanities Introductory Course
- Core, General Elective, or Chinese

#### Spring Semester
- Core Class
- Humanities Introductory Course (Foundations)
- Humanities Introductory Course
- Core, General Elective, or Chinese

### Year 3

#### Fall Semester
- Humanities Advanced Course (Interdisciplinary)
- Humanities Advanced Course
- Core Class
- Core or General Elective

#### Spring Semester
- Humanities Advanced Course
- Humanities Advanced Course
- General Elective
- General Elective

### Year 4

#### Fall Semester
- Humanities Advanced Course
- Humanities Advanced Course
- 2-credit Humanities Capstone Seminar
- General Elective

#### Spring Semester
- 4-credit Humanities Capstone
- General Elective
- General Elective
- General Elective
Interactive Media Arts (IMA) encourages students to explore the expressive possibilities of emerging media. Our students are challenged to combine practice and theory, connecting technical skills with historical knowledge, cultural understanding, and conceptual thinking. Areas of expertise include the development of software, the manipulation of digital media, the fabrication of material objects, the production of electronic devices, the construction of virtual and physical spaces, media theory, interactive installation, and the philosophy of technology. Our curriculum, community, and active learning environment facilitate student acquisition of both conceptual insights and practical skills, encouraging our students to explore their personal interests whilst engaging both critically and creatively with new technologies.

All IMA majors take a required foundation course, What is New Media? A course designed to give students a strong theoretical and historical background in new media arts. They may then choose between 4 other foundation courses. Interaction Lab, Communications Lab, Application Lab, and Creative Coding Lab. Interaction Lab introduces students to the fields of interaction design, physical computing, and digital fabrication and provides students with foundational skills in electronics prototyping and an introduction to basic computer programming. Communications Lab introduces students to concepts and tools in order to produce multimedia content for print, photography, audio, and video. Application Lab introduces modern rapid digital and physical prototyping techniques and user experience design. Creative Coding Lab introduces students to the fundamentals of computation, software design, and web technologies.

Students then choose from a range of electives across the disciplines of art & design, humanities, science, and computation, with great freedom to make selections based on their personal interest and future career goals. Starting from their sophomore year, students are introduced to advanced labs and seminars where they can sharpen their technical skills, learn about professional environments and develop richer and more complex conceptual frameworks. Every student will receive guidance in their choices and - in their junior and senior years - be encouraged to specialize in a particular area of concentration. All majors finish with a two semester Capstone Studio course based on a topic of their own choosing. The IMA capstone synthesizes theoretical research and practice to produce an emerging media project that is critically informed by a related research essay.
REQUIREMENTS FOR THE MAJOR

Note: Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill a particular requirement. Requirements may be met through equivalent courses in the global network with prior approval.

Foundations - 12 credits
This foundation is required:
- INTM-SHU 205 What is New Media?

Students may choose any two of the following courses:
- INTM-SHU 101 Interaction Lab
- INTM-SHU 103 Creative Coding Lab
- INTM-SHU 110 Application Lab
- INTM-SHU 120 Communications Lab

Electives - 20 credits
Sample Courses:
- INTM-SHU 125 Digital Arts and New Media
- INTM-SHU 129 Industrial Design in Action
- INTM-SHU 138 Responsive Environments: Designing Interactive, Sentient, and Intelligent Spaces
- INTM-SHU 151 Learning With Turtles
- INTM-SHU 185 Interactive Fashion
- INTM-SHU 194 Global Media Cultures
- INTM-SHU 201 Expanded Web
- INTM-SHU 202 Media Architecture
- INTM-SHU 214 User Experience Design
- INTM-SHU 217 Make Believe
- INTM-SHU 222 Introduction to Robotics
- INTM-SHU 227 ABC Browser Circus
- INTM-SHU 242 Exhibition: Next
- INTM-SHU 243 Introduction to Animation
- INTM-SHU 247 Creative Game Design and Development
- INTM-SHU 254 Nature of Code
- INTM-SHU 257 Immersive Arts
- INTM-SHU 259 Immersive Design for Video Game
- INTM-SHU 261 Data: Code it, Make it
- INTM-SHU 262 Urban Farm Lab
- INTM-SHU 280C VR/AR Fundamentals
- INTM-SHU 284 Digital Sculpting for Facial Animation
- INTM-SHU 294 History of Human-Computer Interaction
- INTM-SHU 296 The Planetary: Computation in the Anthropocene

Advanced Electives - 8 credits
Sample Courses:
- INTM-SHU 301 Advanced Lab: Open Project
- INTM-SHU 304 Advanced Lab: Web Page to Web Space
- INTM-SHU 305 Advanced Seminar: Hello Metaverse
- INTM-SHU 350 Advanced Seminar: Seminar in Media Studies: Media’s Material and Environmental Relations

Capstone - 8 credits
- INTM-SHU 400 Capstone Studio I
- INTM-SHU 401 Capstone Studio II

Interactive Media Arts Minor (For details see “Requirements for Minors” section)
This is just one example of how a student could organize their courses if pursuing an IMA major. It assumes a student begins taking IMA major courses in the first year. Sample Schedule 2 offers an alternate plan that begins in the second year. Students may propose alternative schedules to their advisors as well.
INTERACTIVE MEDIA ARTS
SAMPLE SCHEDULE 2

Year 1

Fall Semester
- Global Perspectives on Society
- Core Class
- Core or General Elective
- Chinese or EAP, Core, or General Elective

Spring Semester
- Writing as Inquiry
- Core or General Elective
- Core Class
- Chinese or EAP, Core, or General Elective

Year 2

Fall Semester
- Perspectives on the Humanities
- What is New Media? or Interaction Lab or Application Lab or Communications Lab or Creative Coding Lab
- IMA Elective
- Core, Chinese, or General Elective

Spring Semester
- What is New Media? or Interaction Lab or Application Lab or Communications Lab or Creative Coding Lab
- What is New Media? or Interaction Lab or Application Lab or Communications Lab or Creative Coding Lab
- Core Class
- Core, Chinese, or General Elective

Year 3

Fall Semester
- IMA Elective
- IMA Elective
- Core Class
- General Elective

Spring Semester
- Advanced IMA Elective
- IMA Elective
- General Elective
- General Elective

Year 4

Fall Semester
- Capstone I
- Advanced IMA Elective
- IMA Elective
- General Elective

Spring Semester
- Capstone II
- General Elective
- General Elective
- General Elective
The Interactive Media + Business (IMB) major is where innovation + business meet through emerging media technology. It teaches how innovative ideas combine with technology, creativity and business principles to yield viable products, services and experiences. Students of Interactive Media + Business (IMB), will be challenged to imagine and implement interactive products and services that fearlessly investigate the recently possible in media, technology, and communication. IMB majors are also expected to think holistically about the impact of their work in society as well as the business value, whether it involves software or hardware, virtual or physical, product or experiment. The IMB major welcomes interest in entrepreneurship in all forms — large organizations or startups, for-profit or not-for-profit — that bring about disruptive changes and create positive social impact. Students of IMB will acquire a design-and-build mindset and gain experience by implementing creative solutions to real business problems in order to graduate well prepared for stimulating careers or future learning journeys in diverse organizations across the globe.

IMB majors and minors will take a unique blend of interactive media and business foundation courses, including Application Lab, which introduces modern rapid software prototyping, theories of innovation, early-stage business concepts, creative coding and user experience design. For their second emerging media foundation, IMB students will choose between one of 4 courses: Interaction Lab, which covers interaction design, electronics, computation, and digital fabrication, Communications Lab, which covers digital media production methods, including imaging, audio, video, and Web development, or What is New Media? A course designed to give students a strong theoretical and historical background in new media arts and Creative Coding Lab, which introduces students to the fundamentals of computation, software design, and web technologies. Business foundations include Economics of Global Business and Principles of Financial Accounting.

Students also choose from a range of flexible core and elective categories across the disciplines of business, emerging media, art and design, the humanities, social and physical sciences, as well as computation and data. Majors finish with a year-long Capstone Studio course by synthesizing methods of research and practice to produce an interactive project and business plan.
REQUIREMENTS FOR THE MAJOR

Note: Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill a particular requirement. Requirements may be met through equivalent courses in the global network with prior approval.

Emerging Media Foundation Courses: 8 credits
- INTM-SHU 110 Application Lab AND
- INTM-SHU 101 Interaction Lab OR
- INTM-SHU 103 Creative Coding Lab OR
- INTM-SHU 120 Communications Lab OR
- INTM-SHU 205 What is New Media?

Required Business Foundation Course: 8 credits
- ECON-SHU 251 Economics of Global Business
- BUSF-SHU 250 Principles of Financial Accounting

Business Flexible Core Courses: 8 credits
Choose 2 from the following (sophomore standing required):
- BUSF-SHU 210 Business Analytics
- BUSF-SHU 351 Operations Management
- MGKT-SHU 301 Management and Organizations
- MKTG-SHU 1 Introduction to Marketing
- BUSF-SHU 142 Information Technology in Business and Society
- BUSF-SHU 202 Foundations of Finance

Business Elective Courses: 12 credits
Any Business core or elective
Sample Courses:
- BUSF-SHU 311 New Venture Strategy
- MKTG-SHU 57 Digital Marketing
- MKTG-SHU 110 Branding and Innovation

Interactive Media Arts/Business Elective Courses: 20 credits
Sample Courses:
- INTM-SHU 226 Artificial Intelligence Arts
- INTM-SHU 232 Critical Data and Visualization
- IMBX-SHU 211 Design Thinking
- IMBX-SHU 101T Life Design
- IMBX-SHU 102T Global Experience Design
- IMBX-SHU 103T Understanding Financial Technology
- CCST-SHU 132 Creativity Considered

Note: A complete and current list of courses is available via Albert Course Search.

Capstone Studio: 8 credits
Important Notes:
- IMB majors are subject to the general degree requirements of NYU Shanghai. They must complete 128 total credits with a cumulative grade point average of at least 2.0.
- IMB majors are not able to double major in either Business & Finance, Business & Marketing, or Interactive Media Arts.
- The required Business & Finance and Business & Marketing course, Foundations of Finance, is optional for IMB majors. Students wishing to take Foundations of Finance must fulfill these prerequisites: Calculus, Microeconomics, and Statistics for Business and Economics.
• IMB students can take Economics of Global Business at other locations only if they meet the prerequisites (Microeconomics and Calculus).

• Microeconomics and Statistics for Business and Economics can be counted as Business electives for IMB majors.

• Students who began at NYU Shanghai before the 2018-2019 academic year who have already taken Communications Lab and Interaction Lab may substitute one of them for Application Lab.

Interactive Media + Business Minor (For details see “Requirements for Minors” section)

Creativity and Innovation Minor
The minor in Creativity and Innovation is designed to help students gain a deeper understanding of their existing and evolving creative and innovative selves and, importantly, to help everyone gain greater confidence in these areas. The minor in Creativity and Innovation complements other studies that students undertake by equipping them with tools that enable them to develop further the ideas and artifacts they build in their majors. Beyond this, creativity and innovation are very significant tools that will pay dividends to students in future careers of any type. For details see “Requirements for Minors” section.
### INTERACTIVE MEDIA + BUSINESS

#### SAMPLE SCHEDULE 1

This is just one example of how a student could organize their courses if pursuing a IMB major. It assumes a student begins taking IMB major courses in the first year. Sample Schedule 2 offers an alternate plan that begins in the second year. Students may propose alternative schedules to their advisors as well.

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<tr>
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<th>Fall Semester</th>
<th>Spring Semester</th>
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<tbody>
<tr>
<td></td>
<td>Global Perspectives on Society</td>
<td>Writing as Inquiry</td>
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<tr>
<td></td>
<td>Core Class</td>
<td>Core Class</td>
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<td></td>
<td>Core Class</td>
<td>Application Lab</td>
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<td>Chinese or EAP, Core, or General Elective</td>
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<tr>
<th>Year 2</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
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<tr>
<td></td>
<td>Perspectives on the Humanities</td>
<td>Economics of Global Business</td>
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<tr>
<td></td>
<td>Emerging Media Foundation Course</td>
<td>Principles of Financial Accounting</td>
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<td>Interactive Media Elective</td>
<td>Core, Chinese, or General Elective</td>
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<tr>
<th>Year 3</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
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<tr>
<td></td>
<td>Interactive Media Elective</td>
<td>Core Class</td>
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<td></td>
<td>Business Flexible Core</td>
<td>Business Flexible Core</td>
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<td></td>
<td>Core or General Elective</td>
<td>Business Elective</td>
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<th>Year 4</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
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<tr>
<td></td>
<td>Capstone Seminar (IMB)</td>
<td>Core or General Elective</td>
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<td></td>
<td>Business Elective</td>
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<td>General Elective</td>
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|                  | Capstone Seminar (IMB)         | Interactive Media Elective    |
|                  | General Elective               | General Elective              |

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INTERACTIVE MEDIA + BUSINESS
SAMPLE SCHEDULE 2

Year 1
Fall Semester
- Global Perspectives on Society
- Core Class
- Core Class
- Chinese or EAP, Core, or General Elective

Spring Semester
- Writing as Inquiry
- Core or General Elective
- Core Class
- Chinese or EAP, Core, or General Elective

Year 2
Fall Semester
- Perspectives on the Humanities
- Application Lab
- Interactive Media Elective
- Core, Chinese, or General Elective

Spring Semester
- Economics of Global Business
- Emerging Media Foundation Course
- Principles of Financial Accounting
- Core, Chinese, or General Elective

Year 3
Fall Semester
- Interactive Media Elective
- Interactive Media Elective
- Core Class
- Business Flexible Core

Spring Semester
- Interactive Media Elective
- Business Flexible Core
- Business Elective
- Interactive Media Elective

Year 4
Fall Semester
- Capstone Seminar (IMB)
- Business Elective
- Core or General Elective
- General Elective

Spring Semester
- Capstone Seminar (IMB)
- Business Elective
- General Elective
- General Elective
Mathematics is the cornerstone of science. It provides both the language and framework for scientific thought, incorporating logical rigor and the power of abstraction. These attributes allow human ingenuity to extract deep scientific understanding from relatively simple experiments and physical observations. Mathematics plays a double role: On the one hand, it is a scientific field of its own that has yielded powerful and surprisingly beautiful theoretical constructions. On the other hand, mathematics provides the toolbox needed to solve problems and to model phenomena observed in nature or of interest in industry and technology. As such, mathematics allows humans to model the physical universe, to build efficient algorithms in computing, to develop powerful artificial intelligence methods, to analyze financial markets, to produce predictions for climate science, to map and study the human genome, to analyze the structure of the human brain, and a long list of etcetera's.

NYU Shanghai offers two tracks for a degree in Mathematics: Mathematics and Honors Mathematics. Both tracks develop the pure and applied aspects of the discipline. Math majors acquire a solid grasp of the main areas of mathematics while being invited, through a number of electives courses, to apply this knowledge in a wide range of areas, including computer science, physics, chemistry, engineering, data science, operations research, finance, etc. Graduates are qualified either to continue with further graduate education, or to start a career in industry, financial institutions, logistics, statistical consulting, or any activity requiring abstraction capability, mathematical modeling skills or relying on intensive computational or quantitative techniques.

The Honors Math track requires students to take the Honors version of the mandatory Math courses and to keep both a general and a Math GAP higher or equal to 3.65. Honors courses have a broader scope and breadth than the regular courses, exposing students to general definitions and complete proofs. The Honors program is very demanding, as the combination of distinguished professors and a homogeneous selected audience results in fast moving courses that often become undistinguishable from graduate courses.
REQUIREMENTS FOR THE MAJOR

The program is formed by three components: (1) Core courses, (2) required Math courses, (3) Math electives.

Math Requirements: MATH-SHU 131 Calculus, or place out of Calculus or take MATH-SHU 201 Honors Calculus, in order to satisfy the Mathematics requirement in the core curriculum.

Science Requirements: Students must choose two lectures plus one lab of the following list:

Lecture Sections (choose two):
- BIOL-SHU 21 Foundations of Biology I, BIOL-SHU 22 Foundations of Biology II
- PHYS-SHU 11 General Physics or PHYS-SHU 91 Foundations of Physics Honors, PHYS-SHU 12 General Physics II or PHYS-SHU 93 Foundations of Physics II Honors;
- CHEM-SHU 125 Foundations of Chemistry I, CHEM-SHU 126 Foundations of Chemistry II

Lab Sections (choose one associated to one of the lecture sections chosen above):
- BIOL-SHU 123 Foundations Biology Lab
- PHYS-SHU 71 Foundations Physics Lab I, PHYS-SHU 94 Foundations of Physics Lab II
- CHEM-SHU 127 Foundations Chemistry I Lab

Alternative courses may be accepted upon prior approval by the program leader. These courses must make a substantial use of Mathematics and mathematical modeling. Not every course listed is taught every semester, and in any given semester other courses may be offered as a replacement. Requirements may be met through equivalent courses in the global network with prior approval. 3-credit versions of courses can generally substitute for a full 4-credit course requirement. A 2-credit course with a similar title or content will not by itself meet the requirement of the named course.

Required Mathematics Courses
Note: Students wishing to major in Mathematics are strongly advised to take the course MATH-SHU 140 Linear Algebra in their first year, as it is a prerequisite for most advanced math courses. This course can be taken at the same time as MATH-SHU 131 Calculus.
- MATH-SHU 140 Linear Algebra
- MATH-SHU 143 Foundations of Mathematical Methods OR MATH-SHU 201 Honors Calculus
- MATH-SHU 151 Multivariable Calculus
- MATH-SHU 235 Probability and Statistics OR MATH-SHU 233 Honors Theory of Probability
- MATH-SHU 262 Ordinary Differential Equations OR MATH-SHU 362 Honors Ordinary Differential Equations

Math Electives
Additionally to Calculus and the five required mathematics course, students are required to choose eight Math Electives. At least two must be from the category “Constrained Math Electives”. Note that most elective courses require either the course MATH-SHU 143 Foundations of Mathematical Methods or the course MATH-SHU 201 Honors Calculus. Courses with a * can be used to complete the senior thesis projects in the senior year (see below).

Constrained Math Electives
Note: This list is not exhaustive; other courses may be added if approved.
- MATH-SHU 141 Honors Linear Algebra I
- MATH-SHU 142 Honors Linear Algebra II*
- MATH-SHU 236 Mathematics of Data Science and Machine Learning*
- MATH-SHU 282 Functions of a Complex Variable
- MATH-SHU 328 Honors Analysis I
- MATH-SHU 329 Honors Analysis II*
- MATH-SHU 339 Real Variables*
• MATH-SHU 348 Abstract Algebra I*
• MATH-SHU 349 Abstract Algebra II*
• MATH-SHU 350 Probability Limit Theorems*
• MATH-SHU 375 Topology*
• MATH-SHU 377 Differential Geometry*
• MATH-SHU-G 2550 Functional Analysis*

**Additional Mathematics Electives**
Note: This list is not exhaustive; other courses may be added if approved.
- CSCI-SHU 2314 Discrete Mathematics
- MATH-SHU 160 Networks and Dynamics
- MATH-SHU 226 Functional Analysis
- MATH-SHU 234 Mathematics of Statistics and Data Science I
- MATH-SHU 236 Mathematics of Statistics and Data Science II*
- MATH-SHU 250 Mathematics of Finance*
- MATH-SHU 251 Introduction to Math Modeling*
- MATH-SHU 252 Numerical Analysis
- MATH-SHU 263 Partial Differential Equations*
- MATH-SHU 345 Introduction to Stochastic Processes*
- MATH-SHU 997 Math Independent Study*
- PHYS-SHU 201 Introduction to Quantum Information
- PHYS-SHU 135 Solid State Physics

**Senior Thesis**
In their senior year, every student who opts for Mathematics as their primary major is required to complete a Senior Thesis, ending with a written report and an oral presentation. This thesis can be carried out as part of any of your senior courses if indicated in the above list by an *.

**Mathematics as a Secondary Major**
Students with double majors who take Mathematics as their secondary major must choose one of the following: either complete a senior thesis, or take an additional elective among the constrained electives listed above, or complete an independent study with a professor at NYU Shanghai.

**Mathematics Minor (For details see “Requirements for Minors” section)**
### Mathematics

**Sample Schedule 1**

This is one example of how a student could organize their courses if pursuing a Mathematics major. All the required courses are taken in the first two years, which opens the doors to most mathematics electives. It is strongly advised to take Linear algebra in the first year as it is a prerequisite for most of the other Mathematics courses.

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Fall Semester</th>
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<th>Spring Semester</th>
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<tbody>
<tr>
<td><strong>Global Perspectives on Society</strong></td>
<td><strong>Calculus (Core Class)</strong></td>
<td><strong>Linear Algebra</strong></td>
<td>Chinese or EAP, Core, or General Elective</td>
</tr>
<tr>
<td><strong>Writing as Inquiry</strong></td>
<td><strong>Multivariate Calculus</strong></td>
<td><strong>Foundations of Mathematical Methods</strong></td>
<td>Chinese or EAP, Core, or General Elective</td>
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<th>Spring Semester</th>
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<tbody>
<tr>
<td><strong>Perspectives on the Humanities</strong></td>
<td><strong>Probability and Statistics</strong></td>
<td><strong>Math or General Elective</strong></td>
<td>Chinese, Core, or General Elective</td>
</tr>
<tr>
<td><strong>Core Class</strong></td>
<td><strong>Ordinary Differential Equations</strong></td>
<td><strong>Math or General Elective</strong></td>
<td>Chinese, Core, or General Elective</td>
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<tr>
<td><strong>Core or General Elective</strong></td>
<td><strong>Math Elective</strong></td>
<td><strong>Math Elective</strong></td>
<td>General Elective</td>
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<td><strong>Math or General Elective</strong></td>
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<th>Spring Semester</th>
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<tbody>
<tr>
<td><strong>General Elective</strong></td>
<td><em><em>Math Elective</em>/ Math Elective</em>*</td>
<td><strong>Math or General Elective</strong></td>
<td>General Elective</td>
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<td><strong>General Elective</strong></td>
<td><em><em>Math Elective</em>/ Math Elective</em>*</td>
<td><strong>Math or General Elective</strong></td>
<td>General Elective</td>
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</table>
This schedule is an example for students who want to explore topics in computer science in the course of their studies. These could be replaced for instance by courses in physics, chemistry, economics, or finance.

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<td><strong>Spring Semester</strong></td>
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<td><strong>Spring Semester</strong></td>
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<td>Core Class</td>
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<td><strong>Spring Semester</strong></td>
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<td>General Elective</td>
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</table>
REQUIREMENTS FOR THE MAJOR

Students wishing to major in Honors Mathematics must have achieved a general GPA of 3.65 or higher, and a GPA of 3.65 or higher in the major sequence. The earliest students are able to declare the major is after completion of Honors Analysis I and Honors Linear Algebra II and posting of their spring semester freshman year grades. If the GPA requirements are not met, the students may graduate as Mathematics majors but retain the Honors designation of the individual courses they took on their transcripts.

The program is formed by three components: (1) Core courses, (2) required Math courses and (3) Math electives.

Math Requirements: They are satisfied by approving either MATH-SHU 201 Honors Calculus or the combination of Calculus plus Foundations of Mathematical Methods. Acceptance in MATH-SHU 328 Honors Analysis I automatically entails the satisfaction of the core math requirements.

Science Requirements: Students must choose two lectures plus one lab of the following list.

Please note prerequisite courses for planning and course selection:

Lecture Sections (choose two):
- BIOL-SHU 21 Foundations of Biology I, BIOL-SHU 22 Foundations of Biology II
- PHYS-SHU 11 General Physics or PHYS-SHU 91 Foundations of Physics Honors, PHYS-SHU 12 General Physics II or PHYS-SHU 93 Foundations of Physics II Honors;
- CHEM-SHU 125 Foundations of Chemistry I, CHEM-SHU 126 Foundations of Chemistry II

Lab Sections (choose one associated to one of the lecture sections chosen above):
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Required Mathematics Courses
- MATH-SHU 141 Honors Linear Algebra I
- MATH-SHU 233 Honors Theory of Probability
- MATH-SHU 282 Functions of a Complex Variable
- MATH-SHU 328 Honors Analysis I
- MATH-SHU 329 Honors Analysis II*
- MATH-SHU 348 Honors Algebra I
- MATH-SHU 362 Honors Ordinary Differential Equations

Math Electives
Note: Honors students are required to choose five Math Electives. It is strongly encouraged to take the required mathematics courses first. This list is not inclusive; other courses may be added if approved. Courses with a * can be used to complete the Senior Thesis in the senior year (see below).
- MATH-SHU 160 Networks and Dynamics
- MATH-SHU 226 Functional Analysis
- MATH-SHU 234 Mathematics of Statistics
- MATH-SHU 236 Mathematics of Data Science and Machine Learning*
- MATH-SHU 250 Mathematics of Finance*
- MATH-SHU 251  Introduction to Math Modeling
- MATH-SHU 252  Numerical Analysis*
- MATH-SHU 263  Partial Differential Equations*
- MATH-SHU 329  Honors Analysis II*
- MATH-SHU 339  Real Variables*
- MATH-SHU 345  Introduction to Stochastic Processes*
- MATH-SHU 349  Abstract Algebra II
- MATH-SHU 350  Probability Limit Theorems*
- MATH-SHU 375  Topology*
- MATH-SHU 377  Differential Geometry
- MATH-SHU 997  Math Independent Study*
- MATH-SHU-G 2550  Functional Analysis
- PHYS-SHU 201  Introduction to Quantum Information
- PHYS-SHU 135  Solid State Physics

**Senior Thesis**

In their senior year, each Honors Mathematics student is additionally required to complete a capstone project, ending with a written report and an oral presentation. This thesis can be completed as part of any of your senior courses if indicated in the above list by an *.
This is just one example of how a student could organize their courses if pursuing an Honors Mathematics major. Taking all required courses in the first two years allows access to most honors math electives.

### Year 1

#### Fall Semester
- **Global Perspectives on Society**
- **Honors Calculus (Core Class)**
- **Honors Linear Algebra I**
- **Chinese or EAP, Core, or General Elective**

#### Spring Semester
- **Writing as Inquiry**
- **Honors Analysis I**
- **Honors Linear Algebra II**
- **Chinese or EAP, Core, or General Elective**

### Year 2

#### Fall Semester
- **Perspectives on the Humanities**
- **Honors Analysis II**
- **Honors Ordinary Differential Equations**
- **Core, General Elective, or Chinese**

#### Spring Semester
- **Core Class**
- **Functions of a Complex Variable**
- **Honors Theory of Probability**
- **Core, General Elective, or Chinese**

### Year 3

#### Fall Semester
- **Core Class**
- **Math Elective**
- **Math or General Elective**
- **Core or General Elective**

#### Spring Semester
- **Core Class**
- **Math Elective**
- **Math or General Elective**
- **General Elective**

### Year 4

#### Fall Semester
- **General Elective**
- **Honors Algebra**
- **Math or General Elective**
- **General Elective**

#### Spring Semester
- **General Elective**
- **Math Elective**
- **Math or General Elective**
- **General Elective**
This is an alternative schedule for students who decide to enroll in the Honors Mathematics track at a later time.

## Year 1

### Fall Semester
- **Global Perspectives on Society**
- **Calculus (Core Class)**
- **Chinese or EAP, Core, or General Elective**
- **General Elective**

### Spring Semester
- **Writing as Inquiry**
- **Multivariable Calculus**
- **Chinese or EAP, Core, or General Elective**
- **General Elective**

## Year 2

### Fall Semester
- **Perspectives on the Humanities**
- **Honors Calculus**
- **Honors Linear Algebra I**
- **Honors Ordinary Differential Equations**

### Spring Semester
- **Core, Chinese, or General Elective**
- **Honors Analysis I**
- **Honors Linear Algebra II**
- **Honors Theory of Probability**

## Year 3

### Fall Semester
- **Core Class**
- **Math Elective**
- **Core or General Elective**

### Spring Semester
- **Core Class**
- **Math Elective**
- **General Elective**

## Year 4

### Fall Semester
- **Core, General Elective, or Chinese**
- **Honors Analysis II**
- **Honors Algebra I**
- **General Elective**

### Spring Semester
- **Core, General Elective, or Chinese**
- **Functions of a Complex Variable**
- **Math Elective**
- **General Elective**
Neural science (NS) is a collection of disciplines unified by a concern for the function of the brain. Experimental approaches in neural science vary from analyses of molecular and cellular mechanisms in nerve cells and groups of nerve cells to behavioral and psychological studies of whole organisms. Theoretical tools include mathematical and computational modeling approaches that have proved useful in other areas of science. We attract students who are interested in understanding the brain’s command of all its diverse functions including but not limited to the following questions: How do cell circuits enable us to read and speak? How and why do we form relationships? How do we think, remember, despair, or motivate? What are possible causes of devastating disorders of the brain and body, as well as ways to prevent or cure them?

The NS major studies the brain and its impact on behavior and cognitive functions, the understanding of which is regarded as the Holy Grail of the current century. Increasing understanding of the brain will enable scientists to develop treatments for neurodegenerative diseases (such as Parkinson’s disease & Alzheimer’s disease) and mental illnesses. NS research will also help us find out more about normal human behavior and mental wellbeing, and can thus help develop artificial intelligence as well as treating illnesses. NS research could also lead to better understanding of how we learn, allowing us to optimize our intelligence. These developments are likely to provide significant benefits for society and have implications for a diverse range of public policy areas such as health, education, law, and security.

The undergraduate NS curriculum blends courses from many of the basic sciences (such as mathematics, biology, physics, & chemistry) as a foundation for higher level work in NS. NS major requirement contains 6 required courses including one capstone course and 2 elective courses. In addition, students who demonstrate a genuine interest in research and achieve a grade point average of 3.65 or higher in all courses required for the major and over all courses taken for credit can apply to be on Honors Track.
REQUIREMENTS FOR THE MAJOR

Note: Not every course listed below is taught in every semester. In any given semester, other courses may be offered that fulfill the requirement. Requirements may be met through taking equivalent courses in the Global Network with the prior approval from the Director of Undergraduate Studies (DUS) for Neural Science. Students may not double major in Neural Science and Biology.

Foundational Courses

- BIOL-SHU 21  Foundations of Biology I
- BIOL-SHU 22  Foundations of Biology II
- BIOL-SHU 123 Foundations of Biology Lab
- CHEM-SHU 125 Foundations of Chemistry I
- CHEM-SHU 126 Foundations of Chemistry II
- CHEM-SHU 127 Foundations of Chemistry I Lab OR CHEM-SHU 128 Foundations of Chemistry II Lab
- PHYS-SHU 11  General Physics I OR
- PHYS-SHU 91  Foundations of Physics I Honors
- PHYS-SHU 12  General Physics II OR
- PHYS-SHU 93  Foundations of Physics II Honors
- PHYS-SHU 71  Foundations of Physics Lab I
- PHYS-SHU 94  Foundations of Physics Lab II

Notes:
1) NS majors are encouraged to complete the above classes in their first 2 years.

2) NS majors are not required to take Foundations of Physics III Honors and may substitute General Physics I & II for Foundations of Physics I & II Honors.

3) Relationship between General Physics and Foundations of Physics Honors: General Physics I & II is a calculus-based course for pre-meds, engineers and others who want a broad introduction and survey of basic physics including classical mechanics, electricity and magnetism, optics and waves, and thermal and statistical physics. Foundations of Physics I-IV Honors covers a similar set of topics in considerably greater depth, plus special relativity and an introduction to quantum mechanics, over four semesters. Please note that Foundations of Physics I & II Honors alone do not include some important topics, such as optics, thermal and statistical physics, which are included in Foundations of Physics III Honors, and introduction to mechanics and condensed matter physics in Foundations of Physics IV Honors. Therefore, students electing to take the Honors Physics track are highly recommended to take Foundations of Physics III Honors and Foundations of Physics IV Honors as well. Students with a strong high-school background in physics and mathematics are also highly recommended to take Foundations of Physics Honors I-IV.

Required Major Courses (All Six)

- NEUR-SHU 100  Math Tools for Life Sciences (Spring)
- NEUR-SHU 201  Introduction to Neural Science (Fall)
- NEUR-SHU 251  Behavioral and Integrative Neuroscience (Spring)
- NEUR-SHU 210  Cellular and Molecular Neuroscience (Fall)

One approved upper-level course in either Psychology or Biology:

Approved upper-level Psychology courses:

- NEUR-SHU 222  Perception
- NEUR-SHU 265  Neural Bases of Speech and Language

*The following courses will not be offered at NYU Shanghai but students may take one of them at New York to fulfill the requirement.

- PSYCH-UA 29  Cognition
• PSYCH-UA 44  Lab in Perception  
• PSYCH-UA 46  Lab in Human Cognition  
• PSYCH-UA 55  Psychology, Neuropsychology, and Medicine  
• PSYCH-UA 300  From Illusions to Inference

Approved upper-level Biology courses:
• BIOL-SHU 30  Genetics  
• BIOL-SHU 50  Immunology  
• BIOL-SHU 263  Developmental Biology  
• CHEM-SHU 881  Biochemistry I  
• CHEM-SHU 882  Biochemistry II

*The following courses will not be offered at NYU Shanghai but students may take one of them at New York to fulfill the requirement.
• BIOL-UA 25  Principles of Animal Physiology  
• BIOL-GA 1501  Mathematics in Medicine and Biology  
• BIOL-GA 1502  Computers in Medicine and Biology

Major Capstone Course
NEUR-SHU 997/998 Independent Study in Neural Science (2-4 credits, can be repeated once):
Open to senior neural science majors with permission of DUS.

Prerequisite: All Neural Science Major Required Courses (Introduction to Neural Science, Cellular and Molecular Neuroscience, Behavioral and Integrative Neuroscience, Math Tools for Behavioral Science), permission of a neural science faculty member (at NYU-Shanghai, NYU-Abu Dhabi, or NYU-New York) who will act as a sponsor and mentor, and approval of the Director of Undergraduate Studies for Neural Science.

Independent Study must have a combined total of at least 4 credits but no more than 8 credits to fulfill the major capstone course requirement. The 4-credit requirement can be fulfilled in 1 semester with a 4-credit load or over 2 semesters with a 2-credit load in each semester.

Major Electives (Choose Two)
• MATH-SHU 160  Networks and Dynamics (Spring)  
• NEUR-SHU 222  Perception (Spring, can count as an approved upper-level Psychology course)  
• NEUR-SHU 261  Neurobiology of Decision Making (Spring)  
• NEUR-SHU 265  Neural Bases of Speech and Language (Fall, can count as an approved upper-level Psychology course)  
• NEUR-SHU 270  Introduction to Theoretical Neuroscience (Fall)  
• NEUR-SHU 275  Action and Cognition (Fall)  
• NEUR-SHU 303  Introduction to Linguistics: The Science of Human Language (Fall)  
• NEUR-SHU 304  Texts and Ideas: Meaning (Spring)

*The following courses will not be offered at NYU Shanghai but students may take one of them at New York to fulfill the requirement.
• NEURL-UA 302  Special Topics in Neural Science  
• NEURL-UA 305  Development and Dysfunction of the Nervous System

General Electives
Students may take any courses in the NYU system to meet the general elective requirements. They are strongly encouraged (but not required) to take Introduction to Programming and choose from the following listed courses to develop research skills.

Recommended Computer Science General Electives:
• CSCI-SHU 101  Introduction to Computer and Data Science
• CSCI-SHU 220  Algorithms
• CSCI-SHU 358  Theory of Computation
• CSCI-SHU 360  Machine Learning
• CSCI-SHU 372  Artificial Intelligence
• CSCI-SHU 402  Advanced Algorithms
• EENG-SHU 2054 Signals and Systems
• EENG-SHU 251  Circuits
• EENG-SHU 352  Control Systems
• EENG-SHU 375  Robotic Systems

Recommended Mathematics General Electives:
• MATH-SHU 151  Multivariable Calculus
• MATH-SHU 140  Linear Algebra
• MATH-SHU 233  Honors Theory of Probability
• MATH-SHU 235  Probability and Statistics
• MATH-SHU 263  Partial Differential Equations

Neural Science Minor (For details see “Requirements for Minors“ section)
This is just one example of how a student could organize their courses if pursuing a NS major. It assumes a student begins taking NS major courses in the first semester of their first year. Sample Schedule 2 offers an alternate plan that involves beginning to pursue a NS major in the spring semester of the first year. Students may propose alternative schedules to their advisors as well.
# NEURAL SCIENCE

## SAMPLE SCHEDULE 2

### Year 1

**Fall Semester**
- Global Perspectives on Society
- Core Class (Calculus)
- Core Class
- Chinese or EAP, or General Elective

**Spring Semester**
- Writing as Inquiry
- Core Class
- 3 credits: Foundations of Biology I
- Chinese or EAP, or General Elective

### Year 2

**Fall Semester**
- Perspectives on the Humanities
- Intro to Neural Science
- 8 credits: Foundations of Chemistry I, Foundations of Biology II, and Foundations of Biology Lab
- No class

**Spring Semester**
- Math Tools for Life Sciences
- Behavioral and Integrative Neuroscience
- 5 credits: Foundations of Chemistry II and Foundations of Chemistry II Lab
- Chinese or General Elective

### Year 3

**Fall Semester**
- Cellular and Molecular Neuroscience
- NS Elective
- General Elective
- Chinese or General Elective

**Spring Semester**
- Approved upper-level course in either Psychology or Biology
- NS Elective
- General Elective
- General Elective

### Year 4

**Fall Semester**
- 5 credits: General Physics I/Foundations of Physics I, Honors and Foundations of Physics Lab I
- Major Capstone or General Elective
- General Elective
- General Elective

**Spring Semester**
- 5 credits: General Physics II/Foundations of Physics II Honors and Foundations of Physics Lab II
- Major Capstone or General Elective
- General Elective
- General Elective


Physics is a broad discipline, ranging from fundamental scientific questions to sophisticated technological applications. At its most basic, it is the study of matter and energy and their manifold interactions. Physicists study topics as wide-ranging as the underlying nature of space and time; the origins, large-scale structure, and future evolution of the universe; the behavior of stars and galaxies; the fundamental constituents of matter; the many different patterns in which matter is organized, including superconductivity, liquid crystals, or the various forms of magnetism in solids; the workings of biological matter, whether in molecules such as DNA, or cellular structures, or the transport of matter and energy in and across cells; and many others. Basic physics research has led to myriad technological advances, which have transformed society in the 20th century through the present day; a small list includes: radio and television; computers; lasers; X-rays; magnetic resonance imaging and CAT scans; and the World Wide Web.

Physics is a hands-on discipline, and our students gain expertise not only in the classroom but also in the laboratory. They may participate in activities ranging from the writing of realistic computer modeling of fundamental physical principles to the modeling of financial activities, as well as the more traditional activities of physicists and mathematicians. Those trained in physics are found in many occupations, such as various fields of engineering, computer technology, health, environmental and earth sciences, communications, finance, and science writing. A higher degree opens the possibility of creative research in industry, or teaching and research in colleges and universities. Outstanding and highly motivated students are offered special opportunities for honors work, independent study, summer laboratory research, internships, and other enhancements. Our interdisciplinary approach and experimental work is geared to meet the current demand for scientists with well-integrated backgrounds who became the leaders in modern scientific scholarship and who pursue careers in research, education, industry, health care, business, and publishing.
REQUIREMENTS FOR THE MAJOR

Note: Not every course listed below is taught in every semester. In any given semester, other courses may be offered that fulfill the requirement. Requirements may be met through taking equivalent courses in NYU’s global network with prior approval.

GPA Minimum Requirement
Physics, Chemistry and Electrical Engineering majors’ students must achieve and maintain a minimum 3.0 cumulative and major GPA in order to declare the major. Since they are required to study away in NY or AD for their junior year in order to complete major coursework offered at those campuses, they must complete all of the prerequisite courses at NYU Shanghai for the junior year major classes they need to take in New York or AD before they will be admitted to study away. If declared majors fail to maintain a 3.0 GPA or do not complete the required courses during study away, they may be required to declare a different major to be able to graduate.

Foundational Courses

• BIOL-SHU 21 Foundations of Biology I
• BIOL-SHU 123 Foundations of Biology Lab
• CHEM-SHU 125 Foundations of Chemistry I
• CHEM-SHU 126 Foundations of Chemistry II
• CHEM-SHU 127 Foundations of Chemistry I Lab OR
  CHEM-SHU 128 Foundations of Chemistry II Lab
• PHYS-SHU 91 Foundations of Physics I Honors OR
  PHYS-SHU 11 General Physics I (with a B+ or better grade)
• PHYS-SHU 93 Foundations of Physics II Honors
• PHYS-SHU 95 Foundations of Physics III Honors
• PHYS-SHU 96 Foundations of Physics IV Honors
• PHYS-SHU 71 Foundations of Physics Lab I
• PHYS-SHU 94 Foundations of Physics Lab II

Notes:

1) Relationship between General Physics and Foundations of Physics Honors: General Physics I & II is a calculus-based course for pre-meds, engineers and others who want a broad introduction and survey of basic physics including classical mechanics, electricity and magnetism, optics and waves, and thermal and statistical physics. Foundations of Physics I-IV Honors covers a similar set of topics in considerably greater depth, plus special relativity and an introduction to quantum mechanics, over four semesters. It should be emphasized that Foundations of Physics I & II Honors alone do not include some important topics, such as optics, thermal and statistical physics, which are included in Foundations of Physics III Honors, and introduction to quantum mechanics and condensed matter physics in Foundations of Physics IV Honors. Therefore, students electing to take the Honors Physics track are highly recommended to take Foundations of Physics III Honors and Foundations of Physics IV Honors as well.

2) Students who have taken General Physics I and received a B+ or better grade also satisfy the prerequisite to take Foundations of Physics II Honors. Such students may also become Physics Majors and do not have to retake Foundations of Physics I Honors. However, students who already are interested in majoring in Physics, as well as those interested in the honors track, or those with a strong high-school background in physics and mathematics are strongly recommended to take Foundations of Physics I-IV Honors.

3) Physics majors are not required to take Foundations of Biology II.

4) Physics majors are required to take Linear Algebra and Differential Equations. They should not take Linear Algebra.

Required Courses

• MATH-SHU 151 Multivariable Calculus
• MATH-SHU 235 Probability and Statistics
• MATH-SHU 265 Linear Algebra and Differential Equations
• PHYS-SHU 106 Mathematical Physics
• PHYS-SHU 251 Electricity and Magnetism
• PHYS-SHU 301 Quantum Mechanics
• PHYS-SHU 302 Statistical Mechanics and Thermodynamics
• PHYS-SHU 303 Advanced Physics Laboratory
• PHYS-SHU 998 Integrated Science Capstone *(This course must be taken in the senior year)*

**Physics Electives - Choose Two**

• PHYS-SHU 135 Solid State Physics
• PHYS-SHU 201 Introduction to Quantum Information
• PHYS-SHU 210 Computational Physics
• PHYS-SHU 255 Biophysics
• PHYS-SHU 315 Nuclear and Particle Physics

**Physics Minor (For details see “Requirements for Minors” section)**
This is just one example of how a student could organize their courses if pursuing a Physics major. It assumes a student begins taking Physics major courses in the first semester of their first year. Sample Schedule 2 offers an alternate plan that involves beginning to pursue a Physics major in the spring semester of the first year. Students may propose alternative schedules to their advisors as well.

### Year 1

#### Fall Semester
- **Global Perspectives on Society**
- **Core Class** (Calculus)
- **8 credits: Foundations of Physics I Honors, Foundations of Chemistry I, and Foundations of Physics Lab I**
- **2 credits: Chinese or EAP**

#### Spring Semester
- **Writing as Inquiry**
- **Multivariable Calculus**
- **8 credits: Foundations of Physics II Honors, Foundations of Physics Lab II and Foundations of Biology I**
- **2 credits: Chinese or EAP**

### Year 2

#### Fall Semester
- **Perspectives on the Humanities**
- **Linear Algebra and Differential Equations**
- **5 credits: Foundations of Physics III Honors and Foundations of Biology Lab**
- **Probability and Statistics**

#### Spring Semester
- **8 credits: Foundations of Physics IV Honors, Foundations of Chemistry II, and Foundations of Chemistry II Lab**
- **Mathematical Physics**
- **Core or General Elective**
- **Chinese or EAP**

### Year 3 (These classes are only offered in NY or AD)

#### Fall Semester
- **Electricity and Magnetism**
- **Quantum Mechanics**
- **Physics Elective**
- **Chinese or General Elective**

#### Spring Semester
- **Statistical Mechanics and Thermodynamics**
- **Physics Elective**
- **General Elective**
- **Chinese or General Elective**

### Year 4

#### Fall Semester
- **Advanced Physics Lab**
- **General Elective**
- **General Elective**
- **Chinese or General Elective**

#### Spring Semester
- **Integrated Science Capstone**
- **General Elective**
- **General Elective**
- **Chinese or General Elective**
# Physics

## Sample Schedule 2

### Year 1

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Perspectives on Society</td>
<td>Writing as Inquiry</td>
</tr>
</tbody>
</table>

| Core Class (Calculus) | Core Class | Chinese or EAR, or General Elective |

### Year 2

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
</table>

| Perspectives on the Humanities | Linear Algebra and Differential Equations | No Class |

| Probability and Statistics | General Elective | No Class |

### Year 3

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 credits: Foundations of Physics III Honors and Foundations of Biology Lab</td>
<td>Mathematical Physics</td>
</tr>
</tbody>
</table>

| Chinese or General Elective | General Elective | General Elective |

| 8 credits: Foundations of Physics IV Honors, Foundations of Chemistry II, Foundations of Chemistry II Lab |Chinese or General Elective | No Class |

### Year 4 (These classes are only offered in NY or AD; requires exceptional permission from Academic Standards Committee to complete senior year away)

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics Elective</td>
<td>Statistical Mechanics and Thermodynamics</td>
</tr>
</tbody>
</table>

| Electricity and Magnetism | Advanced Physics Lab | Physics Elective |

| Quantum Mechanics | General Elective | Integrated Science Capstone |

| No Class | No Class | No Class |
Social scientists study human interactions among individuals, families, communities, nations, and the built and natural environments. Using a range of analytical, interpretive, and experimental tools from anthropology, economics, epidemiology, political science, psychology and sociology, social scientists seek to understand conflict and cooperation, epidemics of disease and poverty, social organization and social change, kinship and belonging, human development, systems of exchange, and other enduring questions at the center of our shared humanity.

Students who complete the Social Science major at NYU Shanghai will be prepared to pursue careers and advanced study in fields as diverse as anthropology, business, development, economics, education, environmental studies, journalism, law, psychology, political science, public health, public service, sociology, and social policy. The major offers students a unique opportunity to explore broad areas of social science research and thought, while also allowing a concentration in one of multiple tracks within the major. The Social Science major encourages interdisciplinary inquiry into the complex problems of our contemporary world and the cross-disciplinary exchange that is at the heart of many of the most interesting advances in social science research today.

Social Science majors at NYU Shanghai develop competence in a variety of research tools in two methods courses and complete two interdisciplinary core courses unique to the major. Social Science majors select two foundational courses in the social science disciplines, and three focus courses in one track to deepen their intellectual specialization (tracks include: anthropology, environmental studies, global public health, international relations, political economy, political science, psychology, sociology, or urban studies)*. China – its peoples and politics – is an important focus for teaching and learning in the major, but the Social Science Area is purposefully global in perspective and heterogeneous in the methodological and analytical scope of its course offerings. Social Science majors complete an independent research project as a senior year capstone.

*NYU Shanghai students interested in a disciplinary focus in Economics are advised to pursue the Economics major instead of the Social Science major.
REQUIREMENTS FOR THE MAJOR

Social Science Major Requirements: 40 credits

Notes:
• While Calculus is not a requirement in the Social Science major, some methods course options and some focus courses do require Calculus as a prerequisite. Thus, students are encouraged to consider what courses and track they plan to take for the Social Science major and whether Calculus is a prerequisite.
• Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill these requirements. Requirements may be met through equivalent courses in NYU's global network with prior approval.
• Requirement to declare the major: Currently enrolled in or have a final grade of C or above in a Social Science foundational course

Foundational Courses (100-200 level) - Two Courses (8 credits)
These courses provide an introduction to the foundational knowledge and building blocks of analytic methods in a range of Social Science disciplines and areas of focus. Typical coursework: A mix of lectures, discussion, assignments, shorter essays, quizzes, and/or exams.

Sample Courses:
- PSYC-SHU 101 Introduction to Psychology
- SOCS-SHU 110 Introduction to Sociology
- SOCS-SHU 130 Introduction to Political Theory
- SOCS-SHU 133 Urbanization in China
- SOCS-SHU 135 Environment and Society
- SOCS-SHU 136 Human Society and Culture
- SOCS-SHU 150 Introduction to Comparative Politics
- SOCS-SHU 160 Introduction to International Politics
- SOCS-SHU 170 Introduction to Global Health
- ECON-SHU 1 Principles of Macroeconomics
- ECON-SHU 3 Microeconomics
- ECON-SHU 251 Economics of Global Business

Methods Courses (100-300 level) - Two Courses (8 credits)
These courses equip students with tools to both critically consume and create advanced social scientific research. Methods courses include introductory courses and more advanced courses which may have one or more prerequisites. Additional methods courses are available at the study away sites, NYU New York, and NYU Abu Dhabi.

Sample Courses:
- SOCS-SHU 141 Methods of Social Research
- SOCS-SHU 205 Fundamentals of Spatial Analytics
- SOCS-SHU 210 Statistics for the Behavioral and Social Sciences
- SOCS-SHU 247 Computational Urban Science
- SOCS-SHU 318 Ethnographic Methods
- SOCS-SHU 350 Empirical Research Practice
- ECON-SHU 301 Econometrics

Core Courses (200-300 level) - Two Courses (8 credits)
The Social Science core courses are interdisciplinary courses that create unexpected connections between the Social Science disciplines. Some core courses (formerly designated as “Classic Problems”) introduce the history and philosophy of the social scientific approach. Other core courses (formerly designated as “New Challenges”) introduce new approaches to current challenges in Social Science research. Students must take two core courses in total from either of the two categories. Social Science core courses are not widely available at the study away sites, NYU New York, or NYU Abu Dhabi; students should plan to take them in Shanghai.
Sample Courses:
- SOCS-SHU 229  Capitalism, Socialism, Communism
- SOCS-SHU 236  The Chinese Family
- SOCS-SHU 238  Merchants, Chiefs, and Spirits
- SOCS-SHU 245  Ethnographic Thinking
- SOCS-SHU 250  Why is it so Hard to do Good?
- SOCS-SHU 253  Nature in Social Thought
- SOCS-SHU 270  Social Change in Contemporary China
- SOCS-SHU 334  Legal Psychology
- SOCS-SHU 378  Feminist Social Theory

Note: Students who complete two Social Science core courses may use additional core courses to complete the focus requirement if appropriate for their approved choice of focus.

Focus Courses (200-400 level, Two must be 300 or 400 level) - Three Courses (12 credits)
Students select a track in which to focus within the social science major:
- Anthropology
- Environmental Studies
- Global Public Health
- International Relations
- Political Economy
- Political Science
- Psychology
- Sociology
- Urban Studies

Students may also petition to self-design an interdisciplinary track with prior approval of the track and the focus courses for the track from the Undergraduate Coordinator; approval for interdisciplinary tracks will not be granted retroactively.

Students must complete 3 courses in one track, at least 2 of which must be at the advanced level (300 or 400 level). Your academic advisor can help you determine which courses count for each track, and at which level, if it is not clear from the course code. Tracks are noted on student transcripts; for students who self-design a track, “Self-Designed” will appear as the track of record on their transcripts. Additional 200 level focus courses are widely available at the study away sites, NYU New York, and NYU Abu Dhabi; some 300 and 400 level focus courses are available at other sites, but students should plan on taking them at NYU Shanghai or consult with their Academic Advisors to determine where 300 and 400 level focus courses in their track are offered.

Sample Courses (Note: some courses count for more than one track; consult your Academic Advisor for details):
Anthropology
- SOCS-SHU 241  Cultures of Business and Work
- SOCS-SHU 254  Ethnographies of Change in China
- SOCS-SHU 319  Visual Anthropology
- GCHN-SHU 246  Youth and Consumer Culture in China

Environmental Studies
- SOCS-SHU 200  Environmental System Science
- GCHN-SHU 243  China and the Environment
- SOCS-SHU 330  Urban Political Ecology
- SOCS-SHU 333  Global Environmental Politics

Global Public Health
- SOCS-SHU 260  Contemporary Challenges in Global Health
- SOCS-SHU 306  Pestilence: Critical Perspectives in Global Health
- SOCS-SHU 326  Global Mental Health
International Relations
- SOCS-SHU 232 International Law and Institutions
- SOCS-SHU 275 U.S. China Relations
- SOCS-SHU 370 China’s Foreign Policy

Political Economy
- SOCS-SHU 326 Poverty and Inequality Around the Globe
- SOCS-SHU 391 International Investment in Developing Countries
- ECON-SHU 260 International Trade

Political Science (see also courses listed under the Political Economy and International Relations tracks, many of which also count for the Political Science track)
- SOCS-SHU 220 Law and Society in the U.S.
- SOCS-SHU 331 Politics in China
- SOCS-SHU 339 Comparative Revolutions
- SOCS-SHU 340 Comparative Constitutions

Psychology
- PSYC-SHU 201 Social Psychology
- PSYC-SHU 238 Abnormal Psychology
- PSYC-SHU 329 Parenting and Culture
- PSYC-SHU 352 Psychology of Human Sexuality

Sociology
- SOCS-SHU 227 Inequality and Society
- SOCS-SHU 265 Population and Society
- SOCS-SHU 360 Urban Sociology
- SOCS-SHU 361 Education and Society

Urban Studies
- SOCS-SHU 201 Planning Global Cities
- SOCS-SHU 207 Urban and Architectural Design in China
- SOCS-SHU 303 Aviation and Society
- SOCS-SHU 394 Housing and Urbanization

Capstone Course - One Course (4 credits)
Students complete a capstone seminar course during the second semester of their senior year. As part of the capstone seminar students conduct an independent research project in their track using the methods, theories, and data with which they have become familiar over the course of completing the major. The capstone seminar must be completed in Shanghai.

Students who are interested in conducting an honors capstone project will need to complete an additional 4-credit Capstone course in the first semester of their senior year. Please consult with your Academic Advisor for further details.

Social Science Minor (For details see “Requirements for Minors” section)
This is just one example of how a student could organize their courses if pursuing a Social Science major. It assumes a student begins taking Social Science major courses in the first year. Sample Schedule 2 offers an alternate plan that begins in the second year. Students may propose alternative schedules to their advisors as well.

### Year 1

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Perspectives on Society</td>
<td>Writing as Inquiry</td>
</tr>
<tr>
<td>Core Class</td>
<td>Foundational Course</td>
</tr>
<tr>
<td>Core Class</td>
<td>Core Class</td>
</tr>
<tr>
<td>Chinese or EAP</td>
<td>Chinese or EAP</td>
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### Year 2

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perspectives on the Humanities</td>
<td>Core or Chinese</td>
</tr>
<tr>
<td>Foundational Course</td>
<td>Social Science Core</td>
</tr>
<tr>
<td>Social Science Core</td>
<td>Methods Course</td>
</tr>
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</table>

### Year 3

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<tr>
<th>Fall Semester</th>
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</thead>
<tbody>
<tr>
<td>Core Class</td>
<td>Focus Course</td>
</tr>
<tr>
<td>Focus Course</td>
<td>General Elective</td>
</tr>
<tr>
<td>General Elective</td>
<td>Core or General Elective</td>
</tr>
<tr>
<td>General Elective</td>
<td>General Elective</td>
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</table>

### Year 4

<table>
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<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods Course</td>
<td>Focus Course</td>
</tr>
<tr>
<td>Focus Course</td>
<td>General Elective</td>
</tr>
<tr>
<td>General Elective</td>
<td>General Elective</td>
</tr>
<tr>
<td>Capstone Course</td>
<td>Core Class</td>
</tr>
<tr>
<td>General Elective</td>
<td>General Elective</td>
</tr>
</tbody>
</table>
# Social Science

## SAMPLE SCHEDULE 2

### Year 1

**Fall Semester**
- Global Perspectives on Society
- Core Class
- Core Class
- Chinese or EAP

**Spring Semester**
- Writing as Inquiry
- Core Class
- Core Class
- Chinese or EAP

### Year 2

**Fall Semester**
- Perspectives on the Humanities
- Foundational Course
- Social Science Core
- Core or Chinese

**Spring Semester**
- Core or Chinese
- Core Class
- Social Science Core
- General Elective

### Year 3

**Fall Semester**
- Foundational Course
- Focus Course
- Core or General Elective
- General Elective

**Spring Semester**
- Methods Course
- Focus Course
- Core or General Elective
- General Elective

### Year 4

**Fall Semester**
- Focus Course
- Methods Course
- General Elective
- General Elective

**Spring Semester**
- Capstone Course
- Core Class
- General Elective
- General Elective
BUSINESS
To advance in today’s global business environment, one must develop an exceptionally broad array of intellectual skills. The modern business environment demands the ability to analyze problems rigorously, to develop innovative and creative solutions, and to work effectively within the context of an organization. That in turn demands an understanding of the customers, the cultural and scientific contexts in which businesses operate, alongside an understanding of the techniques by which firms succeed in a competitive economy.

A successful business combines labor and capital to produce a good or service at a price and quality that customers want to purchase. In a complex business, different individuals often take responsibility for different aspects of that endeavor, such as operations management, marketing and sales, information systems management, and financial management. An effective business education should provide students with an overview of all these fields, together with an opportunity to explore some areas in greater depth.

The business program at NYU Shanghai is designed to provide students with comprehensive preparation for the modern globalized business world. It builds upon the liberal education designed into the NYU Shanghai core curriculum. Before entering the major, students will have developed an essential set of skills in mathematics, critical thinking, and oral and written communication. They will also have acquired a familiarity with the general cultural and scientific contexts in which businesses operate. Within the major, students obtain:

a) a deeper understanding of the modern global business environment and its economic structure;

b) disciplinary skills in economics and statistics;

c) a focused introduction to accounting, analytics, finance, marketing, operations, and organizational management.

The Business & Finance major helps students develop knowledge and skills in corporate finance, investments management, securities trading, financial markets, and more.
REQUIREMENTS FOR THE MAJOR

Note: Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement. Requirements may be met through equivalent courses in NYU's global network with prior approval. 3-credit versions of courses can generally substitute for a 4-credit requirement but note that a 2-credit course with a similar title or content will not by itself meet the requirement of the named course. All students in their senior year are required to take at least one business course that fulfills the senior thesis requirement. (If Business is the second major, this requirement does not apply).

Business Core
- BUSF-SHU 101 Statistics for Business and Economics
- BUSF-SHU 202 Foundations of Finance
- BUSF-SHU 250 Principles of Financial Accounting
- ECON-SHU 3 Microeconomics
- ECON-SHU 251 Economics of Global Business

Finance Core
- BUSF-SHU 303 Corporate Finance

Business Core Electives - Choose Two
- BUSF-SHU 142 Information Technology in Business and Society
- BUSF-SHU 210 Business Analytics
- BUSF-SHU 351 Operations Management
- MGMT-SHU 301 Management and Organizations
- MKTG-SHU 1 Introduction to Marketing

Finance Electives - Choose Two
Note: Any 4-credit Finance elective course offered at NYU Shanghai (such as those listed below) or any 3-credit Finance elective course offered by Stern Finance Department can be counted as a Finance elective. Taking two 2-credit Finance courses will be counted as meeting the requirement of one Finance elective.
- BUSF-SHU 304 Futures and Options
- BUSF-SHU 305 Debt Instruments and Markets
- BUSF-SHU 321 Equity Valuation
- BUSF-SHU 361 Entrepreneurial Finance
- BUSF-SHU 420 Financial Market Volatility Modeling
- BUSF-SHU 441 Private Equity and Venture Capital

Non-Finance Electives - Choose Two from the Following Areas
- Accounting
- Business Analytics
- Management
- Marketing
- Operations
- Information System

China Business Studies - Choose One*
- BUSF-SHU 288 Doing Business with China
- BUSF-SHU 200D Business Consulting in China
- BUSF-SHU 286 Chinese Financial Markets

*Students who are admitted into the Business and Economics Honors Program and conduct a China related research may fulfill the China Business Studies requirement with the credits from Business and Economics Honors Program.
Business and Finance Major Tracks Requirement (Optional):

1. **Business Accounting Track**
   Business and Finance majors may complete a “Business Accounting track” within the major by taking Principles of Financial Accounting and Managerial Accounting and choosing one approved accounting course* in fulfilling their two “Non-Finance Elective” requirements. (*Students should consult their academic advisor on the approved courses.)*

2. **Business Analytics Track**
   Business and Finance majors may complete a “Business Analytics track” within the major by taking Business Analytics and Information Technology in Business & Society as the Business Electives and choosing one additional Operations/Information System/Analytics course (e.g., Operations Management) in fulfilling their two “Non-Finance Elective” requirements.

3. **Business Marketing Track**
   Business and Finance majors may complete a “Marketing track” within the major by taking Introduction to Marketing as one of their Business Electives and choosing two Marketing Elective courses in fulfilling their two “Non-Finance Elective” requirements.

4. **Business Management Track**
   Business and Finance majors may complete a “Management track” within the major by taking Management and Organizations as one of their Business Electives and choosing two approved management courses* in fulfilling their two “Non-Finance Elective” requirements. (*Students should consult their academic advisor on the approved courses.*)

**Seniors Thesis Requirement**
All NYU Shanghai Business major students are required to submit a Senior Thesis paper to satisfy their graduation requirements. It serves to showcase their accumulated knowledge in business during their undergraduate studies. The Senior Thesis requires students to write an independent paper under the supervision of a course instructor or in consultation with faculty experts. Professors from other NYU sites may also serve in this role. A panel of business professors review all the submitted Senior Theses for approval. The Senior Thesis is submitted in the final semester of a student’s senior year.

**Business Minor (For details see “Requirements for Minors” section)**
This is just one example of how a student could organize their courses if pursuing a B&F major. It assumes a student begins taking B&F major courses in the first year. Students may propose alternative course sequences to their advisors as well.

Students interested in majoring in Business are recommended to take Calculus 131 in their first semester so that they can complete the Microeconomics, Foundations of Finance, Corporate Finance sequence before studying away and have flexibility in taking upper level electives.

### Year 1

**Fall Semester**
- Global Perspectives on Society
- Core Class (Calculus)*
- Core Class
- Chinese or EAP, Core, or General Elective

**Spring Semester**
- Writing as Inquiry
- Microeconomics**
- Statistics for Business and Economics
- Chinese or EAP, Core, or General Elective

### Year 2

**Fall Semester**
- Perspectives on the Humanities
- Principles of Financial Accounting
- Foundations of Finance
- Core, General Elective, or Chinese

**Spring Semester**
- Core Class
- Economics of Global Business
- Corporate Finance
- Core, General Elective, or Chinese

### Year 3

**Fall Semester**
- Core or General Elective
- Business Core Elective
- Finance Elective or Non-Finance Elective
- Core or General Elective

**Spring Semester**
- Core or General Elective
- Business Core Elective
- Finance Elective or Non-Finance Elective
- General Elective

### Year 4

**Fall Semester**
- Non-Finance Elective or Finance Elective or China Business Studies
- Finance Elective or Non-Finance Elective
- Core or General Elective
- General Elective

**Spring Semester**
- Non-Finance Elective or Finance Elective or China Business Studies
- General Elective
- Core or General Elective
- General Elective

### Important Notes:
- *Students need to pass Calculus with a grade of C or above to fulfill the math core requirement for the business majors.
- **Students can only take ECON-SHU 3 Microeconomics in Shanghai. It is highly recommended that students complete ECON-SHU 3 Microeconomics prior to study away.
- ***Students may take up to three Stern Business courses per semester while studying away.
## BUSINESS AND FINANCE
### SAMPLE SCHEDULE 2

### Year 1

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Global Perspectives on Society</strong></td>
<td><strong>Writing as Inquiry</strong></td>
</tr>
<tr>
<td><strong>Core Class (Calculus)</strong>*</td>
<td><strong>Core or General Elective</strong></td>
</tr>
</tbody>
</table>

### Year 2

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perspectives on the Humanities</strong></td>
<td><strong>Core Class</strong></td>
</tr>
<tr>
<td><strong>Statistics for Business and Economics</strong></td>
<td><strong>Economics of Global Business or Foundations of Finance</strong></td>
</tr>
<tr>
<td><strong>Microeconomics</strong></td>
<td><strong>Principles of Financial Accounting</strong></td>
</tr>
</tbody>
</table>

### Year 3

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Foundations of Finance or Economics of Global Business</strong></td>
<td><strong>Core or General Elective</strong></td>
</tr>
<tr>
<td><strong>Business Core Elective</strong></td>
<td><strong>Finance Elective or Non-Finance Elective</strong></td>
</tr>
</tbody>
</table>

### Year 4

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-Finance Elective or Finance Elective or China Business Studies</strong></td>
<td><strong>Non-Finance Elective or Finance Elective or China Business Studies</strong></td>
</tr>
<tr>
<td><strong>Finance Elective or Non-Finance Elective</strong></td>
<td><strong>General Elective</strong></td>
</tr>
</tbody>
</table>

### Important Notes:

* Students need to pass Calculus with a grade of C or above to fulfill the math core requirement for the business majors.
** Students can only take ECON-SHU 3 Microeconomics in Shanghai. It is highly recommended that students complete ECON-SHU 3 Microeconomics prior to study away.
*** Students may take up to three Stern Business courses per semester while studying away.
To advance in today’s global business environment, one must develop an exceptionally broad array of intellectual skills. The modern business environment demands the ability to analyze problems rigorously, to develop innovative and creative solutions, and to work effectively within the context of an organization. That in turn demands an understanding of the customers, the cultural and scientific contexts in which businesses operate, alongside an understanding of the techniques by which firms succeed in a competitive economy.

A successful business combines labor and capital to produce a good or service at a price and quality that customers want to purchase. In a complex business, different individuals often take responsibility for different aspects of that endeavor, such as operations management, marketing and sales, information systems management, and financial management. An effective business education should provide students with an overview of all these fields, together with an opportunity to explore some areas in greater depth.

The business program at NYU Shanghai is designed to provide students with comprehensive preparation for the modern globalized business world. It builds upon the liberal education designed into the NYU Shanghai core curriculum. Before entering the major, students will have developed an essential set of skills in mathematics, critical thinking, and oral and written communication. They will also have acquired a familiarity with the general cultural and scientific contexts in which businesses operate. Within the major, students obtain:

a) a deeper understanding of the modern global business environment and its economic structure;

b) disciplinary skills in economics and statistics;

c) a focused introduction to accounting, analytics, finance, marketing, operations, and organizational management.

The Business & Marketing major helps students develop knowledge and skills in marketing management, customer insights, brand management, and more.
REQUIREMENTS FOR THE MAJOR

Note: Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement. Requirements may be met through equivalent courses in NYU’s global network with prior approval. 3-credit versions of courses can generally substitute for a 4-credit requirement but note that a 2-credit course with a similar title or content will not by itself meet the requirement of the named course. All students in their senior year are required to take at least one business course that fulfills the senior thesis requirement. (If Business is the second major, this requirement does not apply).

Business Core
- BUSF-SHU 101 Statistics for Business and Economics
- BUSF-SHU 202 Foundations of Finance
- BUSF-SHU 250 Principles of Financial Accounting
- ECON-SHU 3 Microeconomics
- ECON-SHU 251 Economics of Global Business

Marketing Core
- MKTG-SHU 1 Introduction to Marketing

Business Core Electives - Choose Two
- BUSF-SHU 142 Information Technology in Business and Society
- BUSF-SHU 210 Business Analytics
- BUSF-SHU 303 Corporate Finance
- BUSF-SHU 351 Operations Management
- MGMT-SHU 301 Management and Organizations

Marketing Electives - Choose Two
Note: Any 4-credit Marketing elective course offered at NYU Shanghai (such as those listed below) or any 3-credit Marketing elective course offered by Stern Marketing Department can be counted as a Marketing elective. Taking two 2-credit Marketing courses will be counted as meeting the requirement of one Marketing elective.

For Class of 2020 and beyond, either MKTG-SHU 9 or MKTG-SHU 2 below must be chosen as one of the two Marketing electives.
- MKTG-SHU 2 Consumer Behavior
- MKTG-SHU 9 Research for Customer Insights
- MKTG-SHU 3 Advertising Management
- MKTG-SHU 53 Pricing
- MKTG-SHU 57 Digital Marketing
- MKTG-SHU 64 Global Marketing Strategy

Non-Marketing Electives - Choose Two from the Following Areas
- Accounting
- Business Analytics
- Management
- Finance
- Operations
- Information System

China Business Studies - Choose One *
- BUSF-SHU 288 Doing Business within China
- BUSF-SHU 200D Business Consulting in China
- BUSF-SHU 286 Chinese Financial Markets

*Students who are admitted into the Business and Economics Honors Program and conduct a China related research may fulfill the China Business Studies requirement with the credits from Business and Economics Honors Program.
Business and Marketing Major Tracks Requirement (Optional):

1. **Business Accounting Track**
   Business and Marketing majors may complete a “Business Accounting track” within the major by taking Principles of Financial Accounting and Managerial Accounting and choosing one approved accounting course* in fulfilling their two “Non-Marketing Elective” requirements. (*Students should consult their academic advisor on the approved courses.)

2. **Business Analytics Track**
   Business and Marketing majors may complete a “Business Analytics track” within the major by taking Business Analytics and Information Technology in Business & Society as the Business Electives and choosing one additional Operations/Information System/Analytics course (e.g., Operations Management) in fulfilling their two “Non-Marketing Elective” requirements.

3. **Business Finance Track**
   Business and Marketing majors may complete a “Finance track” within the major by taking Corporate Finance as one of their Business Electives and choosing two Finance Elective courses in fulfilling their two “Non-Marketing Elective” requirements.

4. **Business Management Track**
   Business and Marketing majors may complete a “Management track” within the major by taking Management and Organizations as one of their Business Electives and choosing two approved management courses* in fulfilling their two “Non-Marketing Elective” requirements. (*Students should consult their academic advisor on the approved courses.)

**Seniors Thesis Requirement**
All NYU Shanghai Business major students are required to submit a Senior Thesis paper to satisfy their graduation requirements. It serves to showcase their accumulated knowledge in business during their undergraduate studies. The Senior Thesis requires students to write an independent paper under the supervision of a course instructor or in consultation with faculty experts. Professors from other NYU sites may also serve in this role. A panel of business professors review all the submitted Senior Theses for approval. The Senior Thesis is submitted in the final semester of a student’s senior year.

**Business Minor (For details see “Requirements for Minors” section)**
This is just one example of how a student could organize their courses if pursuing a B&M major. It assumes a student begins taking B&M major courses in the first year, see Sample Schedule 2 for a sample plan which begins in sophomore year. Students may propose alternative course sequences to their advisors as well.

Students interested in majoring in Business are recommended to take Calculus 131 in their first semester so that they can complete the Microeconomics, Foundations of Finance, Corporate Finance sequence before studying away and have flexibility in taking upper level electives.

### Year 1

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course 1</th>
<th>Course 2</th>
<th>Course 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>Global Perspectives on Society</td>
<td>Core Class (Calculus)</td>
<td>Chinese or EAP, Core, or General Elective</td>
</tr>
<tr>
<td>Spring</td>
<td>Writing as Inquiry</td>
<td>Microeconomics*</td>
<td>Statistics for Business and Economics</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Chinese or EAP, Core, or General Elective</td>
</tr>
</tbody>
</table>

### Year 2

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course 1</th>
<th>Course 2</th>
<th>Course 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>Perspectives on the Humanities</td>
<td>Principles of Financial Accounting</td>
<td>Core, General Elective, or Chinese</td>
</tr>
<tr>
<td>Spring</td>
<td>Core or General Elective</td>
<td>Economics of Global Business</td>
<td>Core, General Elective, or Chinese</td>
</tr>
</tbody>
</table>

### Year 3

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course 1</th>
<th>Course 2</th>
<th>Course 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>Core or General Elective</td>
<td>Marketing Elective or Non-Marketing Elective</td>
<td>Core or General Elective</td>
</tr>
<tr>
<td>Spring</td>
<td>Marketing Elective or Non-Marketing Elective</td>
<td>Business Core Elective</td>
<td>Core or General Elective</td>
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<td></td>
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<td></td>
<td>General Elective</td>
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</tbody>
</table>

### Year 4

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course 1</th>
<th>Course 2</th>
<th>Course 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>Non-Marketing Elective or Marketing Elective or China Business Studies</td>
<td>General Elective</td>
<td>Non-Marketing Elective or Marketing Elective</td>
</tr>
<tr>
<td>Spring</td>
<td>Non-Marketing Elective or Marketing Elective or China Business Studies</td>
<td>General Elective</td>
<td>Core or General Elective</td>
</tr>
</tbody>
</table>

**Important Notes:**

*Students need to pass Calculus with a grade C or above to fulfill the math core requirement for the business majors.

**Students can only take ECON-SHU 3 Microeconomics in Shanghai. It is highly recommended that students complete ECON-SHU 3 Microeconomics prior to study away.

***Students may take up to three Stern Business courses per semester while studying away.
BUSINESS AND MARKETING
SAMPLE SCHEDULE 2

Year 1

Fall Semester
- Global Perspectives on Society
- Core Class (Calculus)
- Core class
- Chinese or EAP, Core, or General Elective

Spring Semester
- Writing as Inquiry
- Core or General Elective
- Core or General Elective
- Chinese or EAP, Core, or General Elective

Year 2

Fall Semester
- Perspectives on the Humanities
- Statistics for Business and Economics
- Microeconomics** or Introduction to Marketing
- Core, General Elective, or Chinese

Spring Semester
- Core or General Elective
- Principles of Financial Accounting
- Microeconomics** or Introduction to Marketing
- Core, General Elective, or Chinese

Year 3

Fall Semester
- Core or General Elective
- Business Core Elective
- Marketing Elective or Non-Marketing Elective
- Foundations of Finance

Spring Semester
- Marketing Elective or Non-Marketing Elective
- Business Core Elective or Economics of Global Business
- Core or General Elective
- Core or General Elective

Year 4

Fall Semester
- Non-Marketing Elective or Marketing Elective or China Business Studies
- General Elective
- Non-Marketing Elective or Marketing Elective
- General Elective

Spring Semester
- Non-Marketing Elective or Marketing Elective or China Business Studies
- Business Core Elective or Economics of Global Business
- Core or General Elective
- General Elective

Important Notes:
*Students need to pass Calculus with a grade C or above to fulfill the math core requirement for the business majors
**Students can only take ECON-SHU 3 Microeconomics in Shanghai. It is highly recommended that students complete ECON-SHU 3 Microeconomics prior to study away.
***Students may take up to three Stern Business courses per semester while studying away.
COMPUTER SCIENCE, DATA SCIENCE, AND ENGINEERING

COMPUTER SCIENCE
COMPUTER SYSTEMS ENGINEERING
DATA SCIENCE
ELECTRICAL AND SYSTEMS ENGINEERING
Computer Science at NYU Shanghai is designed to create technological leaders with a global perspective, a broad education, and the capacity to think creatively. Computer science focuses on how to design, build, and effectively use the computers and systems that we interact with every day — from the iPhones in our hands to the complex databases in our banks and hospitals and to the self-driving cars of the future. Because computer technology powers the most essential functions of business, industry, government and entertainment, computer scientists have tremendous opportunities for growth and exploration.

The Bachelor of Science in Computer Science is a rigorous program that not only covers fundamental computer science subjects - such as object-oriented programming, computer architecture, algorithms, and operating systems – but provides a wide variety of elective courses, spanning artificial intelligence, game programming, natural language processing, information visualization, security and privacy, computer networking, machine learning, and database design. Students are actively encouraged to pursue research with NYU Shanghai computer science professors, all of whom are renown in their respective fields. Students are involved in an increasing number of interdisciplinary initiatives across the university, including the Center for Data Science and Artificial Intelligence and the Neuroscience Research Institute.

Computer science graduates have a myriad of career paths, including creating products for major high-tech companies such as Google, Tencent, Microsoft, founding or joining a high-tech startup, applying computer science savoir-faire in the public sector such as healthcare, law enforcement, or transportation, or going on to do cutting-edge research in a Ph.D. program. Household names such as Bill Gates, Mark Zuckerberg, Larry Page, Melisa Myers, Robin Li, and Kai-Fu Lee all began in computer science.
REQUIREMENTS FOR THE MAJOR

Notes:
• Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement. Requirements may be met through equivalent courses in NYU’s global network with prior approval. 3-credit versions of courses can generally substitute for a full 4-credit course requirement. A 2-credit course with a similar title or content will not by itself meet the requirement of the named course.
• Computer Science majors are not able to double major in Data Science.

Required Major Courses
• CSCI-SHU 101 Introduction to Computer and Data Science (prereq: Placement test or CSCI-SHU 11 Intro to Computer Programming)
• MATH-SHU 235 Probability and Statistics OR MATH-SHU 233 Theory of Probability OR BUSF-SHU 101 Statistics for Business and Economics
• CSCI-UA 201 Computer Systems Organization OR CSCI-SHU 202 Computer Architecture (prereq: CSCI-SHU 11 Intro to Computer Programming or CSCI-SHU 101 Intro to Computer and Data Science) OR CENG-SHU 201 Digital Logic OR CSCI-U UA 201 Computer Systems Organization
• CSCI-SHU 210 Data Structures (prereq: CSCI-SHU 101 Intro to Computer and Data Science, A- or above in CSCI-SHU 11 Intro to Computer Programming)
• CSCI-SHU 220 Algorithms (prereq: CSCI-SHU 210 Data Structures; CSCI-SHU 2314 Discrete Math or MATH-SHU 140 Linear Algebra or MATH-SHU 141 Honors Linear Algebra)
• CSCI-SHU 2314 Discrete Mathematics (co-requisite or prereq: MATH-SHU 121 Calculus)
• CSCI-SHU 420 Computer Science Senior Project (ONLY offered in the Fall)

Computer Science Electives - Choose Four
Note: The courses listed below are not an exhaustive list. In particular, most of the CS elective courses at Tandon, College of Arts and Sciences, or Abu Dhabi can be used as NYU Shanghai CS electives. If you would like to see if a course not listed below can count as an elective, please contact your advisor to have the course reviewed.
• CENG-SHU 201 Digital Logic
• CENG-SHU 350 Embedded Computer Systems
• CSCI-SHU 201 Digital Logic
• CSCI-SHU 188 Computer Music
• CSCI-SHU 213 Databases
• CSCI-SHU 222 Introduction to Game Programming
• CSCI-SHU 235 Information Visualization
• CSCI-SHU 240 Introduction to Optimization and Mathematical Programming
• CSCI-SHU 254 Distributed Systems
• CSCI-SHU 304 Network Security
• CSCI-SHU 308 Computer Networking
• CSCI-SHU 311 Functional Programming
• CSCI-SHU 360 Machine Learning
• CSCI-SHU 375 Reinforcement Learning
• CSCI-SHU 376 Natural Language Processing
• CSCI-SHU 378 Introduction to Cryptography
• CSCI-SHU 410 Software Engineering
• *INTM-SHU 231 Developing Web
• *BUSF-SHU 310 Data Science for Social and Information Networks

*Courses considered as “Interdisciplinary” CS electives. A maximum of one “interdisciplinary” CS elective class could be used to fulfill the four CS elective requirements. Please contact your advisor for more information.

Computer Science Minor (For details see “Requirements for Minors” section)
### COMPUTER SCIENCE

#### SAMPLE SCHEDULE 1

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Global Perspectives on Society</td>
<td>Writing as Inquiry</td>
</tr>
<tr>
<td></td>
<td>Core Class (Calculus)</td>
<td>Core Class</td>
</tr>
<tr>
<td></td>
<td>Core Class (Intro to Computer Programming)</td>
<td>Introduction to Computer and Data Science or Data Structures</td>
</tr>
<tr>
<td></td>
<td>Chinese or EAP, Core, or General Elective</td>
<td>Chinese or EAP, Core, or General Elective</td>
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<table>
<thead>
<tr>
<th>Year 2</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Perspectives on the Humanities</td>
<td>Core Class</td>
</tr>
<tr>
<td></td>
<td>Data Structures or Computer Science Elective</td>
<td>Computer Science Elective</td>
</tr>
<tr>
<td></td>
<td>Discrete Mathematics</td>
<td>Computer Architecture</td>
</tr>
<tr>
<td></td>
<td>Core, General Elective, or Chinese</td>
<td>Core, General Elective, or Chinese</td>
</tr>
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<table>
<thead>
<tr>
<th>Year 3</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Core or General Elective</td>
<td>Core or General Elective</td>
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<tr>
<td></td>
<td>Computer Science Elective</td>
<td>Computer Science Elective</td>
</tr>
<tr>
<td></td>
<td>Algorithms</td>
<td>Probability and Statistics or alternate statistics course</td>
</tr>
<tr>
<td></td>
<td>General Elective</td>
<td>General Elective</td>
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<table>
<thead>
<tr>
<th>Year 4</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Operating Systems</td>
<td>General Elective</td>
</tr>
<tr>
<td></td>
<td>Computer Science Elective</td>
<td>General Elective</td>
</tr>
<tr>
<td></td>
<td>Senior Project</td>
<td>General Elective</td>
</tr>
<tr>
<td></td>
<td>General Elective</td>
<td>General Elective</td>
</tr>
</tbody>
</table>

This is just one example of how a student could organize their courses if pursuing a CS major. It assumes a student begins taking CS major courses in the first year. Sample Schedule 2 offers an alternate plan that begins in the second year. Students may propose alternative schedules to their advisors as well.
COMPUTER SCIENCE
SAMPLE SCHEDULE 2

Year 1

Fall Semester
- Global Perspectives on Society
- Core Class (Calculus)
- Core Class
- Chinese or EAP, Core, or General Elective

Spring Semester
- Writing as Inquiry
- Core Class
- Core or General Elective
- Chinese or EAP, Core, or General Elective

Year 2

Fall Semester
- Perspectives on the Humanities
- Core Class
- Discrete Mathematics
- Core, General Elective, or Chinese

Spring Semester
- Computer Science Elective
- Introduction to Computer and Data Science or Data Structures
- Computer Architecture
- Core, General Elective, or Chinese

Year 3

Fall Semester
- Computer Science Elective
- Data Structures or Computer Science Elective
- Probability and Statistics or alternate statistics course
- General Elective

Spring Semester
- Algorithms
- Computer Science Elective
- General Elective
- General Elective

Year 4

Fall Semester
- Senior Project
- General Elective
- Operating Systems
- General Elective

Spring Semester
- Computer Science Elective
- Core Class
- General Elective
- General Elective
Engineering challenges of the 21st century are varied, complex, and cross-disciplinary. Ranging from the nano-scale to mega-projects, they are characterized by sustainability concerns, environmental and energy constraints, global sourcing, and humanitarian goals. In the face of global competition, dwindling natural resources and the complexity of societal needs, the leaders of technological enterprises will be those who can innovate, are inventive and entrepreneurial, and understand how technology is integrated within society.

Computer Systems Engineering at NYU Shanghai is designed to create technological leaders with a global perspective, a broad education, and the capacity to think creatively. Students enjoy a learning environment conducive to creativity which is at the heart of tomorrow’s technological innovations and enterprises. Today the products of computer engineering touch nearly every part of our lives. They let us chat with friends via webcams, send emails from cell phones, and withdraw cash from ATMs. But laptops and information networks aren’t the only products computer engineers develop; they reconstruct genomes, design robots, and develop software to make businesses more efficient.
REQUIREMENTS FOR THE MAJOR

Notes:
• To fulfill the Core Curriculum Science requirement, students must take: 1) PHYS-SHU 11 General Physics I or PHYS-SHU 91 Foundations of Physics I Honors; 2) PHYS-SHU 12 General Physics II or PHYS-SHU 93 Foundations of Physics II Honors; and 3) PHYS-SHU 94 Foundations of Physics Lab II.
• Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement. Requirements may be met through equivalent courses in NYU’s global network with prior approval. 3-credit versions of courses can generally substitute for a full 4-credit course requirement. A 2-credit course with a similar title or content will not by itself meet the requirement of the named course.

Required Courses
• CENG-SHU 201 Digital Logic
• CENG-SHU 202 Computer Architecture OR CSCI-UA 201 Computer Systems Organization
• CENG-SHU 350 Embedded Computer Systems
• CSCI-SHU 101 Introduction to Computer and Data Science
• CSCI-SHU 210 Data Structures
• CSCI-SHU 2314 Discrete Mathematics
• EENG-SHU 251 Circuits
• EENG-SHU 400 Senior Capstone Design Project (4-credit project taken in the spring semester of senior year)
• MATH-SHU 151 Multivariable Calculus
• MATH-SHU 235 Probability and Statistics OR MATH-SHU 233 Theory of Probability
• MATH-SHU 265 Linear Algebra and Differential Equations OR MATH-SHU 140 Linear Algebra OR MATH-SHU 160 Networks and Dynamics

Electives - Choose Two
Note: The courses listed below are not an exhaustive list. If you would like to see if a course not listed below can count as an elective, please contact your advisor to have the course reviewed.
• CSCI-SHU 213 Databases
• CSCI-SHU 215 Operating Systems
• CSCI-SHU 308 Computer Networking
• CSCI-SHU 361 Computer Security
• CENG-SHU 303 Parallel and Distributed Computing
• CS-UU 3393 Unix System Programming
• CS-UU 3933 Network Security
• ECE-UU 3193 Introduction to Very Large Scale Integrated Circuits
• EE-UU 3114 Fundamentals of Electronics I
• EENG-SHU 375 Robotic Systems

Note: Rapid Prototyping or a similar IMA course is highly recommended as a general elective.

Computer Systems Engineering Minor (For details see “Requirements for Minors” section)
This is just one example of how a student could organize their courses if pursuing a CSE major. It assumes a student begins taking CSE major courses in the first year. Sample Schedule 2 offers an alternate plan that begins in the second year. Students may propose alternative schedules to their advisors as well.

### Year 1

**Fall Semester**
- Global Perspectives on Society
- Core Class (Calculus)
- Intro to Computer Programming
- Chinese or EAP, Core, or General Elective

**Spring Semester**
- Writing as Inquiry
- Introduction to Computer and Data Science
- Multivariable Calculus
- Chinese or EAP, Core, or General Elective

### Year 2

**Fall Semester**
- Perspectives on the Humanities
- Digital Logic
- Physics I
- Core, General Elective, or Chinese

**Spring Semester**
- Data Structures
- Circuits
- Physics II & Lab
- Core, General Elective, or Chinese

### Year 3

**Fall Semester**
- Discrete Math
- Computer Architecture
- Probability and Statistics or Theory of Probability
- Computer Systems Engineering Elective

**Spring Semester**
- Computer Systems Engineering Elective
- Linear Algebra and Differential Equations or alternative course
- Embedded Computer Systems
- General Elective

### Year 4

**Fall Semester**
- General Elective
- Core or General Elective
- Core or General Elective
- General Elective

**Spring Semester**
- Core or General Elective
- Senior Project
- General Elective
- General Elective
### COMPUTER SYSTEMS ENGINEERING

#### SAMPLE SCHEDULE 2

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Global Perspectives</td>
<td>Writing as Inquiry</td>
</tr>
<tr>
<td></td>
<td>on Society</td>
<td>Intro to Computer</td>
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<tr>
<td></td>
<td></td>
<td>Programming</td>
</tr>
<tr>
<td></td>
<td>Core Class (Calculus)</td>
<td>Physics I</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physics II &amp; Lab</td>
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<td>Chinese or EAP, Core,</td>
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<td></td>
<td>or General Elective</td>
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<table>
<thead>
<tr>
<th>Year 2</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perspectives</td>
<td>Intro to Computer</td>
<td>Computer Architecture</td>
</tr>
<tr>
<td>the Humanities</td>
<td>and Data Science</td>
<td>Probability and</td>
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<td></td>
<td>Statistics or Theory</td>
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<tr>
<td></td>
<td>Digital Logic</td>
<td>Probability</td>
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<tr>
<td></td>
<td>Core or Chinese</td>
<td>Core or Chinese</td>
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</table>

<table>
<thead>
<tr>
<th>Year 3 (CSE Majors should spend their study away semesters in New York and/or Abu Dhabi)</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embedded Computer Systems</td>
<td>Computer Systems</td>
<td></td>
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<tr>
<td>Data Structures</td>
<td>Engineering</td>
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<tr>
<td>Linear Algebra and Differential Equations or alternative course</td>
<td>Elective</td>
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</tr>
<tr>
<td>Multivariable Calculus</td>
<td>General Elective</td>
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</table>

<table>
<thead>
<tr>
<th>Year 4</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Discrete Math</td>
<td>Senior Project</td>
</tr>
<tr>
<td></td>
<td>Core Class</td>
<td>Core Class or General Elective</td>
</tr>
<tr>
<td></td>
<td>General Elective</td>
<td>General Elective</td>
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<tr>
<td></td>
<td>General Elective or Chinese</td>
<td>General Elective or Chinese</td>
</tr>
</tbody>
</table>
Data Science at NYU Shanghai is designed to create data-driven leaders with a global perspective, a broad education, and the capacity to think creatively. Data science involves using computerized methods to analyze massive amounts of data and to extract knowledge from them. Data science addresses a wide-range of data types, including scientific and economic numerical data, textual data, and image and video data. This new discipline draws from methodologies and tools in several well-established fields, including computer science, statistics, applied mathematics, and economics. Data science has applications in just about every academic discipline, including sociology, political science, digital humanities, linguistics, finance, marketing, urban informatics, medical informatics, genomics, image content analysis, and all branches of engineering and the physical sciences. The importance of data science is expected to accelerate in the coming years, as data from the web, mobile sensors, smartphones, and Internet-connected instruments continues to grow.

Students who complete the major will not only have expertise in computer programming, statistics, and data mining, but also know how to combine these tools to solve contemporary problems in a discipline of their choice, including the social science, physical science, and engineering disciplines. Upon graduation, data science majors have numerous career paths. Data Science majors can go on to graduate school in data science, computer science, social science, business, finance, medicine, law, linguistics, education, and so on. Outside of academia, there are also myriad career paths. Not only can graduates pursue careers with traditional data-driven computer-science companies and startups such as Google, Facebook, Amazon, and Microsoft, but also they can also be valuable to companies in the transportation, energy, medical, and financial sectors. Graduates can also pursue careers in the public sector, including urban planning, law enforcement, and education.
Requirements for the Major

Notes:
• Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement. Requirements may be met through equivalent courses in the global network with prior approval. 3-credit versions of courses can generally substitute for a full 4-credit course requirement. A 2-credit course with a similar title or content will not by itself meet the requirement of the named course.
• Computer science and data science share many courses, so double-majoring is not allowed. However, Students in data science can minor in computer science.

Foundational Courses (2 Courses)
• CSCI-SHU 101 Introduction to Computer and Data Science
  Choose one below:
  • BUSF-SHU 101 Statistics for Business and Economics
  • MATH-SHU 233 Theory of Probability
  • MATH-SHU 235 Probability and Statistics

Required Major Courses (7 Courses)
Programming & Computer Science:
• CSCI-SHU 210 Data Structures

Mathematics:
  Course One: Choose one below
  • MATH-SHU 151 Multivariable Calculus
  • MATH-SHU 328 Honors Analysis I
  Course Two: Choose one below
  • MATH-SHU 140 Linear Algebra
  • MATH-SHU 141 Honors Linear Algebra I
  • MATH-SHU 265 Linear Algebra and Differential Equations

Data Analysis:
  Course One:
  • CSCI-SHU 360 Machine Learning
  Course Two: Choose one below
  • ECON-SHU 301 Econometrics
  • MATH-SHU 234 Mathematical Statistics
  Course Three: Choose one below
  • CSCI-SHU 220 Algorithms
  • CSCI-SHU 235 Information Visualization
  • CSCI-SHU 240 Introduction to Optimization and Mathematical Programming

Data Management:
• CSCI-SHU 213 Databases

Capstone Course (1 Course)
• DATS-SHU 420 Data Science Senior Project (Only offered in the Fall)

Note: Students who are admitted in Business and Econ Honors Program can enroll in ECON-SHU 453 Economics Honors Program/BUSF-SHU 3 Business Honors Program to fulfill Data Science capstone requirement.

Data Science and Economic double major students: Students who choose to enroll in ECON-SHU 453 Economics Honors Program to fulfill Data Science major capstone requirement would still need take ECON-SHU 400 Economics Capstone Research to fulfill Economic major capstone requirement.

Major Concentration
Concentration in Finance
• ECON-SHU 3 Microeconomics
• BUSF-SHU 202 Foundations of Finance
• BUSF-SHU 250 Principles of Financial Accounting
• BUSF-SHU 303 Corporate Finance
– 14 courses total

Concentration in Marketing
• ECON-SHU 3 Microeconomics
• BUSF-SHU 202 Foundations of Finance
• BUSF-SHU 250 Principles of Financial Accounting
• MKTG-SHU 1 Introduction to Marketing
– 14 courses total

Concentration in Economics
• ECON-SHU 1 Macroeconomics
• ECON-SHU 3 Microeconomics
– 12 courses total

Concentration in Genomics
• BIOL-SHU 21 Foundations of Biology I
• BIOL-SHU 22 Foundations of Biology II
• BIOL-SHU 123 Foundations of Biology Lab
• BIOL-SHU 261 Bioinformatics
– 14 courses total

Concentration in Mathematics
Choose two below:
• MATH-SHU 142 Honors Linear Algebra II
• MATH-SHU 233 Theory of Probability
• MATH-SHU 234 Mathematical Statistics
• MATH-SHU 329 Honors Analysis II
• MATH-SHU 345 Introduction to Stochastic Processes
– 12 courses total

Concentration in Artificial Intelligence
Choose two below:
• CSCI-SHU 220 Algorithms
• CSCI-SHU 235 Information Visualization
• CSCI-SHU 240 Introduction to Optimization and Mathematical Programming
• CSCI-SHU 372 Artificial Intelligence
• CSCI-SHU 375 Reinforcement Learning
– 12 courses total

Concentration in Political Science
• SOCS-SHU 150 Introduction to Comparative Politics
• SOCS-SHU 160 Introduction to International Politics
– 12 courses total

Concentration in Psychology
Two Required Courses:
• SOCS-SHU 101 Introduction to Psychology
• SOCS-SHU 350 Empirical Research Practice
Choose one below:
• PSYC-SHU 234 Developmental Psychology
• PSYC-SHU 352 Psychology of Human Sexuality
• SOCS-SHU 334 Legal Psychology
– 13 courses total

Data Science Minor (For details see “Requirements for Minors” section)
This is just one example of how a student could organize their courses if pursuing a DS major. It assumes a student begins taking DS major courses in the first year. Sample Schedule 2 offers an alternate plan that begins in the second year. Students may propose alternative schedules to their advisors as well.

### Year 1

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="#">Global Perspectives on Society</a></td>
<td><a href="#">Writing as Inquiry</a></td>
</tr>
<tr>
<td>[Core Class (Calculus)]</td>
<td><a href="#">Probability and Statistics or alternate courses</a></td>
</tr>
<tr>
<td>[Core Class (Intro to Computer Programming)]</td>
<td><a href="#">Intro to Computer and Data Science or Data Structures</a></td>
</tr>
<tr>
<td><a href="#">Chinese or EAP, Core, or General Elective</a></td>
<td><a href="#">Chinese or EAP, Core, or General Elective</a></td>
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</table>

### Year 2

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="#">Perspectives on the Humanities</a></td>
<td><a href="#">Linear Algebra</a></td>
</tr>
<tr>
<td><a href="#">Data Structures or Concentration Course</a></td>
<td><a href="#">Machine Learning</a></td>
</tr>
<tr>
<td><a href="#">Multivariable Calculus</a></td>
<td><a href="#">Econometrics or The Mathematics of Statistics and Data Science</a></td>
</tr>
<tr>
<td><a href="#">Core, General Elective, or Chinese</a></td>
<td><a href="#">Core, General Elective, or Chinese</a></td>
</tr>
</tbody>
</table>

### Year 3

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="#">Core or General Elective</a></td>
<td><a href="#">Core or General Elective</a></td>
</tr>
<tr>
<td><a href="#">Databases</a></td>
<td><a href="#">Core Class</a></td>
</tr>
<tr>
<td><a href="#">Concentration Course</a></td>
<td><a href="#">Concentration Course or General Elective</a></td>
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<td><a href="#">General Elective</a></td>
<td><a href="#">General Elective</a></td>
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### Year 4

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="#">Information Visualization</a></td>
<td><a href="#">General Elective</a></td>
</tr>
<tr>
<td><a href="#">General Elective</a></td>
<td><a href="#">General Elective</a></td>
</tr>
<tr>
<td><a href="#">Senior Project</a></td>
<td><a href="#">General Elective</a></td>
</tr>
<tr>
<td><a href="#">General Elective</a></td>
<td><a href="#">General Elective</a></td>
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This is just one example of how a student could organize their courses if pursuing a DS major. It assumes a student begins taking DS major courses in the first year. Sample Schedule 2 offers an alternate plan that begins in the second year. Students may propose alternative schedules to their advisors as well.
## DATA SCIENCE
### SAMPLE SCHEDULE 2

### Year 1

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
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<tbody>
<tr>
<td>Global Perspectives on Society</td>
<td>Writing as Inquiry</td>
</tr>
<tr>
<td>Core Class (Calculus)</td>
<td>Core Class</td>
</tr>
<tr>
<td>Core Class</td>
<td>Core or General Elective</td>
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</table>

### Year 2

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perspectives on the Humanities</td>
<td>Linear Algebra</td>
</tr>
<tr>
<td>Core Class (Intro to Computer Programming)</td>
<td>Intro to Computer and Data Science or Data Structures</td>
</tr>
<tr>
<td>Multivariable Calculus</td>
<td>Probability and Statistics or alternate courses</td>
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</tbody>
</table>

### Year 3

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Econometrics or The Mathematics of Statistics and Data Science</td>
<td>Core Class</td>
</tr>
<tr>
<td>Data Structures or Concentration Course</td>
<td>Machine Learning</td>
</tr>
<tr>
<td>Databases</td>
<td>Concentration Course</td>
</tr>
</tbody>
</table>

### Year 4

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Information Visualization</td>
<td>General Elective</td>
</tr>
<tr>
<td>General Elective</td>
<td>Concentration Course or General Elective</td>
</tr>
<tr>
<td>Senior Project</td>
<td>General Elective</td>
</tr>
</tbody>
</table>

| Core or General Elective | Core, General Elective, or Chinese |
| Core, General Elective, or Chinese | Core, General Elective, or Chinese |
Electrical and Systems Engineering at NYU Shanghai is designed to create technological leaders with a global perspective, a broad education, and the capacity to think creatively. Innovations by electrical engineers touch every aspect of modern life, from the subway systems beneath our cities to the HD televisions on our walls to the smartphones in our pockets. But this process of innovation is never complete, and new challenges await tomorrow’s electrical engineers.

The Electrical and Systems Engineering program draws upon courses across an array of disciplines. The liberal arts core provides the intellectual breadth, a “license to learn,” preparing students to thrive in a multicultural globalized world and to learn and adapt quickly in areas that evolve with ever-increasing swiftness. Students not only gain a firm grounding across various science and engineering fields that underscore the technical component of an engineering education, but also draw upon courses to develop an understanding of cultural, political, economic, environmental, and public safety considerations. These studies often include hands-on coursework in state-of-the-art laboratories. In addition, the variety of specialized subjects students can investigate through elective coursework — from wireless communication to smart grid power systems — ensures a highly flexible education suited to individual interests.
REQUIREMENTS FOR THE MAJOR

Notes:
• To fulfill the Core Curriculum Science requirement, students must take: 1) PHYS-SHU 11 General Physics I or PHYS-SHU 91 Foundations of Physics I Honors; 2) PHYS-SHU 12 General Physics II or PHYS-SHU 93 Foundations of Physics II Honors; and 3) PHYS-SHU 94 Foundations of Physics Lab II
• Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement. Requirements may be met through equivalent courses in NYU’s global network with prior approval. 3-credit versions of courses can generally substitute for a full 4-credit course requirement. A 2-credit course with a similar title or content will not by itself meet the requirement of the named course.

Required Courses
• CENG-SHU 201 Digital Logic
• CSCI-SHU 11 Introduction to Computer Programming OR CSCI-SHU 101 Introduction to Computer and Data Science
• EENG-SHU 251 Circuits
• EENG-SHU 400 Senior Capstone Design Project (4-credit project taken in the spring semester of senior year)
• *ECE-U 3054 Signals and Systems (offered in New York) OR ENGR-U 3610 Signals and Systems
• *ECE-U 3114 Fundamentals of Electronics I (offered in New York) OR ENGR-U 3611 Electronics
• *ECE-U 3604 Electromagnetic Waves (offered in New York) OR EENG-SHU 304 Electromagnetic Fields and Waves OR PHYS-U 2115 Electricity and Magnetism for Engineers
• MATH-SHU 151 Multivariable Calculus
• MATH-SHU 235 Probability and Statistics OR MATH-SHU 233 Theory of Probability
• MATH-SHU 265 Linear Algebra and Differential Equations OR MATH-SHU 140 Linear Algebra OR MATH-SHU 160 Networks and Dynamics

*Courses will not be offered in Shanghai. Students are required to complete these required major courses from NYU New York or NYU Abu Dhabi.

Electives
Choose 2 from these 4 courses:
• ECE-U 3404 Fundamentals of Communication Theory
• ECE-U 3064 Feedback Control (offered in New York)
• ECE-U 3124 Fundamentals of Electronics II (offered in New York)
• ECE-U 3824 Electric Energy Conversion Systems (offered in New York)

Choose 2 more from the following list:
• CENG-SHU 350 Embedded Computer Systems
• CENG-SHU 351 Computer Networks
• ECE-U 3193 Introduction to Very Large Scale Integrated Circuits
• ECE-U 3404 Fundamentals of Communication Theory
• EENG-SHU 375 Robotic Systems
• *INTM-SHU 234 Rapid Prototyping

*Rapid Prototyping or a similar IMA course is highly recommended as a general elective class for the major requirement.

Electrical and Systems Engineering Minor (For details see “Requirements for Minors” section)
This is just one example of how a student could organize their courses if pursuing a ESE major. It assumes a student begins taking ESE major courses in the first year. Sample Schedule 2 offers an alternate plan that begins in the second year. Students may propose alternative schedules to their advisors as well.

**ELECTRICAL AND SYSTEMS ENGINEERING**

**SAMPLE SCHEDULE 1**

**Year 1**

**Fall Semester**
- Global Perspectives on Society
- Core Class (Calculus)
- Intro to Computer Programming/Computer and Data Science
  
**Spring Semester**
- Writing as Inquiry
- Multivariable Calculus
- Linear Algebra and Differential Equations or alternate course
  
**Year 2**

**Fall Semester**
- Perspectives on the Humanities
- Physics I
- Digital Logic
  
**Spring Semester**
- Core or General Elective
- Physics II & Lab
- Circuits
  
**Year 3 (These classes are only offered in NY or AD)**

**Fall Semester**
- Core or General Elective
- Electronics
- Electromagnetic Fields and Waves
- Signals and Systems
  
**Spring Semester**
- Electrical and Systems Engineering Elective
- Electrical and Systems Engineering Elective
- Electrical and Systems Engineering Elective
  
**Year 4**

**Fall Semester**
- Probability and Statistics or Theory of Probability
- General Elective
- General Elective
  
**Spring Semester**
- Senior Capstone Design Project
- General Elective
- General Elective
  
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ELECTRICAL AND SYSTEMS ENGINEERING

SAMPLE SCHEDULE 2

Year 1

Fall Semester
- Global Perspectives on Society
- Core Class (Calculus)
- Physics I
- Chinese or EAP, Core, or General Elective

Spring Semester
- Writing as Inquiry
- Multivariable Calculus
- Physics II & Lab
- Intro to Computer Programming/Computer and Data Science
- 2-credit EAP or Chinese (if available)

Year 2

Fall Semester
- Perspectives on the Humanities
- Digital Logic
- Core Class
- Core Class

Spring Semester
- Core or General Elective
- Circuits
- Linear Algebra and Differential Equations or alternate course
- Core or General Elective

Year 3 (These classes are only offered in NY or AD)

Fall Semester
- Electronics
- Signals and Systems
- Electromagnetic Fields and Waves
- Electrical and Systems Engineering Elective

Spring Semester
- Probability and Statistics or Theory of Probability
- Electrical and Systems Engineering Elective
- Electrical and Systems Engineering Elective
- Electrical and Systems Engineering Elective

Year 4

Fall Semester
- General Elective
- General Elective
- General Elective or Chinese
- General Elective

Spring Semester
- Senior Capstone Design Project
- General Elective or Chinese
- General Elective
- General Elective
SELF-DESIGNED HONORS MAJOR
Students at NYU Shanghai can apply to craft and complete a Self-Designed Honors major, rather than one of the existing majors at the campus. This major enables a small number of very capable and highly motivated students to pursue a plan of study that brings together courses from more than one NYU department or program. During their sophomore year, students compose their academic plan for the major in consultation with their two faculty advisers for their self-designed program of study as well as with the Associate Provost for Academic Affairs. Their two faculty advisors have to be from different majors and one has to be from a relevant department in New York if more than three of the required classes are from a major that exists in New York but not in Shanghai. By spring of the sophomore year, the plan of study must be submitted to and approved by the Academic Standards Committee.

This NYU Shanghai major serves students who can realize their interdisciplinary goals within the NYU’s global network, drawing on courses from any of the study away sites and degree-granting campuses. The honors major has prerequisites for entry (3.75 GPA; students must maintain a 3.65 GPA to remain in the major) and entails a heavy commitment to honors-level work, including independent research under faculty supervision. For more information, please see the following website: https://shanghai.nyu.edu/academics/majors/sdhm.
REQUIREMENTS FOR MINORS

The courses required for NYU Shanghai Minors are:

**Biology Minor**
A. Molecular and Cell Biology Minor
   • BIOL-SHU 21 Foundations of Biology I
   • BIOL-SHU 22 Foundations of Biology II
   • BIOL-SHU 123 Foundations of Biology Lab
   • BIOL-SHU 30 Genetics OR
     BIOL-SHU 263 Developmental Biology
   • BIOL-UA 36 At the Bench: Applied Molecular Biology DNA Techniques OR
     BIOL-UA 37 At the Bench: Applied Cell Biology OR
   One approved class to count towards this minor

B. Genomics and Bioinformatics Minor
   • BIOL-SHU 21 Foundations of Biology I
   • BIOL-SHU 22 Foundations of Biology II
   • BIOL-SHU 123 Foundations of Biology Lab
   • BIOL-SHU 261 Genomics and Bioinformatics
   • BIOL-SHU 267 Microbiology and Microbial Genomics OR
     BIOL-GA 1128 Systems Biology OR
     BIOL-UA 58 Evolution

**Business Minor**
Required Courses
   • BUSF-SHU 101 Statistics for Business and Economics
   • BUSF-SHU 250 Principles of Financial Accounting
   • ECON-SHU 3 Microeconomics
   • ECON-SHU 251 Economics of Global Business (Students can take Introduction to
     Macroeconomics and Intermediate Macroeconomics to substitute
     Economics of Global Business)
   • MATH-SHU 121 or 131 Calculus

Choose One Elective Course
Please note that the business minor elective list below is complete, no courses outside of the list will be approved.
   • BUSF-SHU 142 Information Technology in Business and Society
   • BUSF-SHU 202 Foundations of Finance
   • BUSF-SHU 210 Business Analytics
   • BUSF-SHU 303 Corporate Finance
   • BUSF-SHU 351 Operations Management
   • MGMT-SHU 301 Management and Organizations
   • MKTG-SHU 1 Introduction to Marketing

Economics majors must complete two of the additional courses listed below to complete the minor within the double counting limits.
   • BUSF-SHU 142 Information Technology in Business and Society
   • BUSF-SHU 202 Foundations of Finance
   • BUSF-SHU 210 Business Analytics
   • BUSF-SHU 351 Operations Management
   • MGMT-SHU 301 Management and Organizations
   • MKTG-SHU 1 Introduction to Marketing

**Chemistry Minor**
   • CHEM-SHU 125 Foundations of Chemistry I
   • CHEM-SHU 126 Foundations of Chemistry II
Chinese Language Minor
16 credits of Chinese language above Elementary II are required to complete the minor. Only 4 credits of those 16 can double-count with another degree requirement. Elementary I and II do not count toward fulfilling the requirements. Typical plan of study: Intermediate I, Intermediate II, Advanced I, and Advanced II.

A student who passes out of Intermediate I&II or Advanced I&II will have to replace the course(s) they placed out of with other Chinese language classes higher than the level(s) they placed out of. Only 4 credits of those 16 can double-count with another major or minor degree requirement.

Example 1:
GCS major who doesn’t place out of Intermediate I must do the following for the Chinese minor:
- Intermediate I
- Intermediate II
- Advanced I and Advanced II (but can only count one towards the minor, because they are also required for GCS major)
- Other course higher than Advanced II

Example 2:
Students who placed out of Advanced Chinese I and are taking Advanced Chinese II now are aiming for a Chinese minor. They can get a Chinese minor by taking:
- Advanced Chinese II (double counting one course between the major and the minor)
- 3 additional Chinese courses, such as Reading Chinese Newspapers, Interpreting Modern China: Reading the Era of 1919-1949, and Chinese Business and Finance.

Chinese Language and Literature Minor
Students in the Chinese Language and Literature Minor will develop a basic understanding of Classical Chinese language and texts, modern and/or contemporary Chinese literature and literary theory, will learn the skills and conventions for literary criticism and analysis in Mandarin, and for applying Chinese language in various professional contexts. In order to help students navigate through both traditional and modern Chinese literature, the 20-credit minor has one of the following two courses as a required point of entry:
- Classical Chinese for Advanced Mandarin Learners (4 credits. Prerequisite: Advanced Chinese II)
- Foreign Societies in Classical Chinese Writing (4 credits. Prerequisite: Written or Spoken Contemporary Chinese or by placement)

In addition to these 4 credits, students must complete 8 credits in the category of “Language in Context” and 8 credits in “Chinese Literature” courses. For Language in Context courses, the language of instruction is Chinese. For Chinese Literature courses, the language of instruction may be Chinese or English, depending on the semester and the faculty. Students minoring in Chinese Language and Literature are strongly recommended to enroll in courses where the language of instruction is Chinese, if possible.

Language in Context - Students take a total of 8 credits from the following electives:
- Reading and Viewing Modern China (4 credits. Prerequisite: Advanced Chinese II)
- Contemporary Chinese Art & Fashion (4 credits. Prerequisite: Advanced Chinese II)
- Written Chinese Discourse (4 credits. Prerequisite: Advanced Chinese II)
- Introduction to Contemporary China (4 credits. Prerequisite: Advanced Chinese II)
- Chinese Business and Finance (4 credits. Prerequisite: Advanced Chinese II)
- Introduction to Chinese Phonetics (4 credits. Instruction in Chinese. Prerequisite: Advanced Chinese II)
Chinese Literature - Students take a total of 8 credits from the following:

• Traditional Chinese Literature from the Beginning to 1911 (4 credits. Instruction in English.)
• Shanghai Stories (4 credits. Instruction in English.)
• Cultural (Mis)translations: China and the West (4 credits. Instruction in English.)
• Hong Kong Cinema (4 credits. Instruction in English.)
• Additional literature courses taught in Chinese will be added as they become available.

Computer Science Minor

• CSCI-SHU 101 Introduction to Computer and Data Science (prereq: CSCI-SHU 11
  
Introduction to Computer Programming or placement exam)
• CSCI-SHU 210 Data Structures
• CENG-SHU 202 Computer Architecture OR
  
CSCI-UA 201 Computer Systems Organization OR
• CENG-SHU 350 Embedded Computer Systems
• One computer science elective course

Computer Systems Engineering Minor

• CENG-SHU 201 Digital Logic
• CENG-SHU 202 Computer Architecture OR
  
CSCI-SHU 11 Introduction to Computer Programming OR
  
CSCI-SHU 101 Introduction to Computer and Data Science
• CENG-SHU 251 Circuits

Creativity and Innovation Minor

• CCST-SHU 132/PCIX-SHU 101 Creativity Considered
• IMBX-SHU 108/PCIX-SHU 102 Experience Studio

Choose three courses from the following list of minor electives. The choice must include at least one design thinking course.

• IMBX-SHU 101/PCIX-SHU 103 Life Design (Design Thinking Courses)
• IMBX-SHU 241/PCIX-SHU 104 Creative Learning Design (Design Thinking Courses)
• IMBX-SHU 211/PCIX-SHU 201 Design Thinking (Design Thinking Courses)
• IMBX-SHU 104/PCIX-SHU 202 Communicating for Influence
• IMBX-SHU 102/PCIX-SHU 203 Global Experience Design
• PCIX-SHU 210 The Strategist
• IMBX-SHU 232/PCIX-SHU 301 Entrepreneurship Experienced
• SOCS-SHU 207 Urban and Architectural Design in China
• SOCS-SHU 318 Ethnographic Methods
• BUSF-SHU 225 Negotiation and Consensus Building
• MKTG-SHU 110 Practicum on Innovation and Branding

Creative Writing Minor

• CRWR-SHU 159 Introduction to Creative Writing (a prerequisite for the intermediate and advanced craft courses) OR
  
CRWR-SHU 161 Introduction to Creative Writing: Literary Translation (a prerequisite for the intermediate and advanced craft courses)

• Two intermediate/advanced creative writing workshops
• An additional intermediate/advanced creative writing workshop or a designated elective

Data Science Minor

Required Courses:

• CSCI-SHU 101 Introduction to Computer and Data Science
• CSCI-SHU 210 Data Structures
• CSCI-SHU 360 Machine Learning

Elective One:

Choose One Course Below
• ECON-SHU 301 Econometrics
• MATH-SHU 234 Introduction to Mathematical Statistics

Elective Two:
Choose One Course Below
• BUSF-SHU 101 Statistics for Business and Economics
• MATH-SHU 233 Theory of Probability
• MATH-SHU 235 Probability and Statistics
• SOCS-SHU 141 Methods of Social Research

Note: Computer Science majors should additionally take CSCI-SHU 235 Information Visualization or CSCI-SHU 213 Databases to earn at least 12 unique credits for the minor.

Economics Minor
• BUSF-SHU 101 Statistics for Business and Economics OR
  MATH-SHU 235 Probability and Statistics OR
  MATH-SHU 233 Theory of Probability OR
  MATH-SHU 234 Mathematical Statistics
• ECON-SHU 1 Principles of Macroeconomics OR
  ECON-SHU 251 Economics of Global Business
• ECON-SHU 3 Microeconomics OR
  ECON-SHU 2 Principles of Microeconomics
• ECON-SHU 202 Intermediate Macroeconomics OR
  ECON-SHU 10 Intermediate Microeconomics
• 8 credits from the Economics elective list

Electrical and Systems Engineering Minor
• CENG-SHU 201 Digital Logic
• CSCI-SHU 11 Introduction to Computer Programming OR
  INTM-SHU 101 Interaction Lab
• EENG-SHU 251 Circuits
• Electrical and Systems Engineering Elective

Global China Studies Minor
Four classes in Global China Studies, one of which should be either the Concept of China course or a course listed under the “China and the World” category. Students may take up to two advanced or post-advanced language courses in fulfillment of this minor.

History Minor
Four classes from the required and elective list of Humanities major History courses.

Humanities Minor
Four classes from the required and elective list of Humanities major courses.

Interactive Media Arts Minor
Foundations - 8 credits
Students may choose any two of the following courses:
• INTM-SHU 101 Interaction Lab
• INTM-SHU 103 Creative Coding Lab
• INTM-SHU 110 Application Lab
• INTM-SHU 120 Communications Lab
• INTM-SHU 205 What is New Media?

Electives - 8 credits
Students may take any 8 credits worth of electives or advanced electives from the Interactive Media Arts elective list.
Interactive Media Business Minor
- BUSF-SHU 250  Principles of Financial Accounting
- ECON-SHU 251  Economics of Global Business
- Interactive Media Foundation Courses: 8 credits
  - INTM-SHU 110  Application Lab AND
  - INTM-SHU 120  Communications Lab OR
  - INTM-SHU 101  Interaction Lab OR
  - INTM-SHU 205  What is New Media? OR
  - INTM-SHU 103  Creative Coding Lab
- Business Elective Course(s): 4 credits
  - Any Business core, elective or IMA Business of Emerging Media course(s)
- Interactive Media Elective Course(s): 4 credits
  - Any IMA elective(s)

Literature Minor
Four classes from the required and elective list of Humanities major Literature courses.

Mathematics Minor
Students wishing to minor in Mathematics are required to take four 4-credit mathematics courses at the Calculus level or higher.

Neural Science Minor
- BIOL-SHU 21  Foundations of Biology I
- BIOL-SHU 22  Foundations of Biology II
- BIOL-SHU 123  Foundations of Biology Lab
- NEUR-SHU 201  Introduction to Neural Science
- NEUR-SHU 251  Behavioral and Integrative Neuroscience OR
  NEUR-SHU 210  Cellular and Molecular Neuroscience

Philosophy Minor
Four classes from the required and elective list of Humanities major Philosophy courses.

Physics Minor
- PHYS-SHU 11  General Physics I OR
  PHYS-SHU 91  Foundations of Physics I Honors
- PHYS-SHU 12  General Physics II OR
  PHYS-SHU 93  Foundations of Physics II Honors
- PHYS-SHU 71  Foundations of Physics Lab I
- PHYS-SHU 94  Foundations of Physics Lab II
- Two Physics Elective Courses (must bring total credits of the minor courses to 16 or more)

Social Science Minor
Students who wish to complete a minor in Social Science must complete one of the methods courses from the list of approved Social Science methods courses and three additional courses from the list of approved Social Science Foundational, Core, or Focus courses.

Global Network Minor
Students can complete a Global Network (GN) Minor using classes from one or more of the eleven Study Away Sites in NYU’s global network. This option enables capable and highly motivated students to pursue a plan of study that brings together courses from more than one NYU department or program taught at a study away site.

These minors serve students who can realize their interdisciplinary goals within the NYU's global network drawing on courses from any of the study away sites. Even if all of the classes are from a single department in one of the other degree-granting campuses or is identical to a minor offered on one of those campuses, the GN minor is an NYU Shanghai minor and will be identified as such on the student's transcript. The other requirements and limitations for these minors are identical with the standard ones identified above for all minors.
GN minors require at least 2 courses from global sites and may be completed using courses taken at
the associated study away site or degree-granting campuses. Courses and therefore minor availability
may vary by semester, students should see each academic center’s website for specific classes, and
plan with their academic advisor how to complete the minor. Pursuing a GN minor does not guarantee
acceptance to study at a study away site. A list of approved global network minors is available on the
NYU Shanghai study away website. The courses that have been reviewed to count towards GN minors
are also posted to the NYU Shanghai study away website. As students inquire about new courses, they
are reviewed and added to the sheet.

Cross School Minor
Cross school minors offered by NYU Schools are available to NYU Shanghai students as listed on the
NYU Cross-School Minors Website (https://www.nyu.edu/students/academic-services/undergraduate-
 advisement/unique-academic-opportunities/cross-school-minors.html). Students who successfully
complete any of those Minors will have them identified by name as a Minor on the student transcript.
Part VII

Course Descriptions
**ART-SHU 105**  
**Performance Art**

What is performance? What is art? How do we make both? These questions will guide us as we create intersections of artistic disciplines involving oral history, archival theory, film, new media, and verbatim and documentary theatre. Students will encounter the work of Yoko Ono, Maria Abramovic, Anna Deavere Smith, The Wooster Group, Theater Mitu and others as we delve deeply into the ideas around how to make performance art using our community, personal identity, and the stories we tell ourselves to survive. Students will create their own work while incorporating performance theory, new media, and technology into their creative process. Whether through movement, first-person interviews, or text-based stimuli, students will work individually, in partners, and as a group to produce a final performance installation/exhibit that will be shared with the community. No performance or technological experience necessary. Prerequisite: None. Fulfillment: General Elective.

**ART-SHU 225A**  
**Contemporary Dance**

This two-point course introduces the fundamental concepts of contemporary dance. Through movement exploration, imitation, and memorization based on Graham technique, students gain an appreciation for the expressive and dynamic capacity of the body. It is highly suggested that one has previous dance experience before enrolling. Prerequisite: None. Fulfillment: This course counts toward the Cross-School Dance Minor hosted by Tisch School of the Arts at NYU. Repeat rule: Non-Repeatable. Students can only take this course once during their study at NYUSH.

**ART-SHU 225B**  
**Contemporary Dance**

This course is an introduction to the fundamental and intermediary concepts of dance through learning a diversity of movement styles. Students will gain an appreciation for the expressive and dynamic capacity of the body, recognizing shared, unifying attributes as well as those that are unique and intrinsic to each style. The thorough warm up places an emphasis on breath, proper placement, and building stamina for general health. Short dances and sequences from Jazz, Hip Hop, Contemporary, and Modern Dance will be learned to sharpen kinesthetic memory, foster joy in movement, and express the timelessness of all dance. Students enrolling for 4 credits will learn the historical and cultural background behind the dances and 2 credits fulfill just the dance requirement. All levels are welcome. No previous experience is required. Prerequisite: None. Fulfillment: This course counts toward the Cross-School Dance Minor hosted by Tisch School of the Arts at NYU.

**ART-SHU 227**  
**Theory and Practice of Acting**

Using the work of some of the world’s foremost theorists and practitioners like Constantin Stanislavski, Anton Chekov, William Shakespeare, Cicely Berry, and Ann Bogart, among others, we will investigate the history and evolution of style, genre, and technique as applied to acting for both stage and film. In doing so students will be exposed to the innovative new technologies currently being used by leading professionals in the field of acting. During this course, students will experience learning how to read and analyze a script, techniques for memorization and relaxation, in-person physical workshops led by guest artists, and in-depth exposure to the mechanics of acting (objective, intention) to create unique and vibrant characters within scenes and monologues. Assignments and exercises will be designed to embolden students’ imaginations while building confidence in front of an audience. Prerequisite: None. Fulfillment: General Elective.

**ART-SHU 230**  
**Ballet**

No prior ballet experience is required. This course serves as an introduction to the fundamental concepts of Ballet. The class includes warm-up, stretching, barre, and center combinations, through which students can improve their stamina, balance, coordination, and increase their vocabularies in ballet. Students will also learn and perform one ballet repertoire to develop their overall comprehension of ballet forms. Prerequisites: None Fulfillment: This course counts toward the Cross-School Dance Minor hosted by Tisch School of the Arts at NYU. Repeat rule: Non-Repeatable. Students can only take this course once during their study at NYUSH.

**ART-SHU 231**  
**Introduction to Dance & Movement**

This two-point introductory class explores and builds foundational skills for different genres of dance. Through movement sequences, short dances and creative activities, students build up muscle strength, increase coordination, flexibility, balance, and stamina as well as improve their kinesthetic memory, musicality, and knowledge of their own bodies. In addition, imagery and visualization prompts will be used to foster creative experimentation in movement. Prerequisite: None. Fulfillment: General Elective. Repeat rule: Non-Repeatable. Students can only take this course once during their study at NYUSH.

**ART-SHU 239.2**  
**Choreography & Performance**

The purpose of this studio course is to fully participate in the creative process through movement exploration, setting choreography and engaging in live performance. With a focus on space, quality, aesthetics, alignment, and musicality as well as practicing learning strategies within a duet/group context, students apply their understanding
and utilize their training in personal, artistic expression. Students who have had one or more dance classes are encouraged to enroll. Fulfillment: This course counts toward the Cross-School Dance Minor hosted by Tisch School of the Arts at NYU. Prerequisite: None. Repeat rule: Students can take this course up to two times in total (not necessarily consecutive) for credit during their study at NYUSH.

**ART-SHU 239.4**  
**Choreography & Performance**

The purpose of this studio and theoretical course is to participate in the creative process through movement exploration, setting choreography and engaging in live performance. In addition, students research, analyze and discuss choreographers and their works. Students who have had one or more dance classes are encouraged to enroll. Prerequisite: None. Fulfillment: This course counts toward the Cross-School Dance Minor hosted by Tisch School of the Arts at NYU.

**ART-SHU 242**  
**Dances of Southern China**

This course focuses, through dance, on the embodiment of the minority folk cultures of Southern China. Each semester, students will focus on two folk dances from Yanbian, Xinjiang, or Inner Mongolia. These dances were created by Korean, Uygur, and Mongolian people. Students will explore the forms of these dances as well as the culture, religion, and history influencing the creation of these dance forms. Students with previous dance experience are encouraged to enroll. This course counts toward the Cross-School Dance Minor, hosted by Tisch School of the Arts at NYU. Prerequisite: None. Fulfillment: This course counts toward the Cross-School Dance Minor hosted by Tisch School of the Arts at NYU. Repeat rule: Non-Repeatable. Students can only take this course once during their study at NYUSH.

**ART-SHU 243**  
**Dances of Northern China**

This course focuses, through dance, on the embodiment of the minority folk cultures of Northern China. Each semester, students will focus on two folk dances from Tibet, Yunnan, or Guizhou of China. These dances were created by Tibetan, Wa, Dai, and Miao people. Students will explore the forms of these dances as well as the culture, religion, history influencing the creation of these dance forms. Students with previous dance experience are encouraged to enroll. This course counts toward the Cross-School Dance Minor hosted by Tisch School of the Arts at NYU. Repeat rule: Non-Repeatable. Students can only take this course once during their study at NYUSH.

**ART-SHU 244**  
**Intermediate Ballet**

This two-point intermediate course is designed to provide an opportunity for students to continue their pursuit of ballet techniques with an emphasis on developing their performing skills in ballet. This course covers a broad range of ballet work inclusive of barre work, ports de bras, adage, pirouettes, larger jumps, and building stamina exercises. The class content is structured in three parts: barre exercises, center work, and performance. Prior training in ballet and instructor's consent to enroll are required. Prerequisite: ART-SHU 230 Ballet or upon instructor's approval for students who received prior training in ballet outside of NYUSH. Contact the instructor for permission. Fulfillment: This course counts toward the Cross-School Dance Minor hosted by Tisch School of the Arts at NYU. Repeat rule: Students can take this course up to two times in total (not necessarily consecutive) for credit during their study at NYUSH.

**ART-SHU 340**  
**Composition**

The studio class is designed as lecture and laboratory, for investigating and expanding our own creativity through the construction of full dance pieces. We will learn how developing a creative practice can not only facilitate dance making and choreography in quick bouts, but also how to turn those tiny gems into a more vast and rich repertoire for audience viewing, either in the public or within a school environment. We will also focus on developing our skills as critical thinkers and the course will emphasize discussion and how we talk about performance as well as give feedback, in order to refine these skills. There will be assigned readings, and we will watch videos of both past and contemporary works to familiarize ourselves with what is happening now (and what has been done) in the field, and to see how this can inform and inspire our own work. Performance is a mandatory component of this class. Any student who has taken 1-2 ballet classes previously or Choreography & Performance, is encouraged to take this advanced dance course. Prerequisite: ART-SHU 239.2 or 239.4 Choreography & Performance Fulfillment: Counts towards the Global Dance Minor Repeat rule: Non-Repeatable. Students can only take this course once during their study at NYUSH.

**ART-SHU 610**  
**Art is a Hammer**

Art is not a mirror that reflects reality, but a hammer with which to shape it." - Bertolt Brecht, theater maker. Every artistic tradition was once an act of rebellion. Everything in popular culture was once punk. In this course, we will examine the history of performance, literature, music, visual art, and film to find groundbreaking acts of artistic rebellion and discover how they shattered norms, affected their contemporaries, and changed how we look at art today. Students will explore theories from a wide range of global practices and respond with short essays and artistic projects, which they will use to propose their own manifestos to challenge modern customs, redefine what it means to be an artist, and shape new realities in their community. Prerequisite: None. Fulfillment: This course
satisfies Old Humanities Requirements: Topic Course; New Humanities Requirements: Introductory Course.

ART-SHU 629
The Villain

What makes a villain and who decides? In this course, we will track the evolution of the villain across the globe and through the ages, exploring representations of evil in myth, literature, and art history, as well as on the stage and screen. We’ll identify the origins of iconic imagery and characteristics, interrogate the scapegoating of certain characters or populations, and question our own perceptions of villainy. Our material will include sacred text, Shakespeare, Japanese Noh, political documents, psychological studies, horror films of early cinema, and relevant works of today from Disney to Black Panther. Assignments will take the form of textual analysis and research, as well as artistic responses in the form of performance, music, photography, and video, all seeking to understand new perspectives on those we label ‘villain.’ Prerequisites: None. Fulfillment: Humanities Advanced Course.

ART-SHU 845
Comedy

In this course we will examine global histories and applications of comedy in performance and media as students from a company of actors, writers, and directors to produce dynamic new work. Students will explore comparative approaches to the technicalities of writing and performing comedic scenes and characters as we seek to understand the science of humor and find the purpose of comedy in our own communities. Each week we will seek inspiration from wide range of examples offered from the history of comedy, from the accidents to modern sketch comedy. We’ll finish the semester with a presentation of the original work we’ve created in the form of videos and live performance. Prerequisites: None Fulfillment: General Elective Repeat rule: Non-Repeatable. Students can only take this course once during their study at NYUSH.

ART-SHU 1010
Making Theatre

In this course, we will explore the essential elements of collaboration and theater making, seeking to understand how the creation process works and how it can be applied across many disciplines. We will investigate groundbreaking theories from the history of performance, mine them for tools useful to our process, and then put them into action as a company of collaborators. As we move through foundational exercises, scene work, and devising methods, students will take on rotating roles of actor, director, writer, designer, and more. Working together, we will hone our craft and establish effective systems for creating and rehearsing new work. Our goal: to further develop our own artistic voices and discover how they can impact the world around us as we make theater. Prerequisites: None Fulfillment: General Elective. Repeat rule: Non-Repeatable. Students can only take this course once during their study at NYUSH.

MUS-SHU 59
Group Piano for Beginners

This course is intended to introduce basic piano performance skills to those who had no previous training in piano or keyboard. It is designed to develop fundamental piano skills leading to further exploration of the keyboard and music. The materials and instruction are unified to encourage the development of basic piano techniques and music concepts. Prerequisite: None. Fulfillment: General Elective. Repeat rule: Non-Repeatable. Students can only take this course once during their study at NYUSH.

MUS-SHU 60
Group Piano for Intermediate Beginners

This class will help students build their fundamental music skills: learning major and minor scales, music theory, analyzing basic music harmony and form, by studying and playing different piano compositions throughout history, students will acquire a basic knowledge of musical style. Prerequisite: MUS-SHU 59 Group Piano for Beginners. Instructor approval required for students who have not taken MUS-SHU 59. Antirequisite for MUS-SHU 60: Students who have completed MUS-SHU 62 Group Piano for Intermediate, MUS-SHU 61 Group Piano for Advanced, or MUS-SHU 63 Performance Piano are not eligible. Fulfillment: General Elective. Repeat rule: Students can take this course up to two times in total (not necessarily consecutive) for credit during their study at NYUSH.

MUS-SHU 61
Group Piano for Advanced

This course will assist students in their study of advanced piano performance, through equipping and enhancing students’ fundamental technical as well as musical theory proficiency via group instruction per week during the semester. Students will, by means of group study and individualized practice and research, increase proficiency at the keyboard, develop performance practices, musical knowledge, pianistic methodology, artistic and stylistic interpretation of works from different eras. Students must have taken MUS-SHU 62 Group Piano for Intermediate class, or demonstrate proficiency at the keyboard prior to registration. Instructor consent required. Fulfillment: General Elective. Repeat rule: Students can take this course up to two times in total (not necessarily consecutive) for credit during their study at NYUSH.

MUS-SHU 62
Group Piano for Intermediate

This praxis course is designed for students who have reached beyond the beginner level. Students will develop their piano playing and score-analysis skills. They will deepen their analytic and technical skills through experimenting
with different types of tone quality that will enhance and enrich their musical expression, and will arm them with the ability of utilizing music theory to analyze piano playing applications. Students will read texts, study music compositions from different historical music periods and musical genres, and study experts' performances in order to consolidate their understanding. Prerequisite: MUS-SHU 60 Group Piano for Inter Beginner. Instructor consent required for students who did not take the prerequisite but have 2 years previous experience. Anti-Requisite for MUS-SHU 62: Students who have completed MUS-SHU 61 Group Piano for Advanced or MUS-SHU 63 Performance Piano are not eligible. Fulfillment: General Elective. Repeat rule: Students can take this course up to two times in total (not necessarily consecutive) for credit during their study at NYUSH.

MUS-SHU 63
Performance Piano

Performance Piano is a course for the very advanced student to build performance confidence, communicating the essence of the music while demonstrating a command of the instrument. A deep understanding of the stylistic and structural elements of each repertoire selection is the main goal for the course. This is a praxis course with a seminar component. Students will ground their individual practice and repertoire with a weekly group class alternating between discussion and critique. Historical, theoretical, conceptual, and topical texts will be the focal point of discussion. Students will engage in peer critique as a way of becoming proficient in music theory language. Fulfillment: General Elective. Repeat rule: Students can take this course up to two times in total (not necessarily consecutive) for credit during their study at NYUSH.

MUS-SHU 150
Group Erhu: All Levels

Prerequisite: None. Fulfillment: General Elective. Repeat rule: Students can take this course up to two times in total (not necessarily consecutive) for credit during their study at NYUSH.

MUS-SHU 151
Bamboo Flute: All Levels

Prerequisite: None. Fulfillment: General Elective. Repeat rule: Students can take this course up to two times in total (not necessarily consecutive) for credit during their study at NYUSH.

MUS-SHU 152
Group Guqin: All Levels

This course provides hands on instruction in Guqin. Designed for all levels of ability this course also presents elements of history and technique, music reading and performance. Beginners to advanced students welcome. Prerequisite: instructor’s permission. Fulfillment: general elective. Repeat rule: Students can take this course up to two times in total (not necessarily consecutive) for credit during their study at NYUSH.

MUS-SHU 206
Music Composition

This course is designed for non-music majors with some prior experience on a musical instrument and an interest in music composition. Throughout the semester, students will learn how to connect performance practice with music writing skills through a progressive series of composition assignments. In classroom lectures, students will be introduced to basic music theory and a selection of important classical works, as well as historical background of important composition techniques and their development. They will also receive weekly private lessons, and chamber music coaching. The course will culminate in a public concert where students perform their original compositions, and chamber music from the common-practice and contemporary classical repertoire. Prerequisite: None. Fulfillment: General Elective.

MUS-SHU 219
Music of Shanghai

Centered around attending a variety of musical performances in Shanghai, the course consists of lectures, readings, listening and discussions. Students work on refining critical listening skills and develop a greater knowledge of music as an integral part of society and in particular, Shanghai’s past and present artistic community. Genres include: jazz, classical, indigenous, fusion, theatre music and contemporary pop/rock. Prerequisites: None. Fulfillment: General Elective. Repeat rule: Non-Repeatable. Students can only take this course once during their study at NYUSH.

MUS-SHU 220
20th Century Music and Its Meanings

From Mamie Smith to Metallica, the musical soundscape of the 20th century was one of immense change, innovation, and controversy. Jazz, rhythm and blues, and rock music arose amid massive demographic shifts, unprecedented wealth creation, global war, and advances in technology that made the world more immediate than ever before. In every genre, a burgeoning record industry turned stored sound into a lucrative commodity that permeated society, defining and challenging our individual and collective identities. This course examines how 20th-century music echoed and defined the social world that helped to produce it, the function of music in that world, and its impact on that world into the 21st century. Prerequisite: None. Fulfillment: General Elective.
**MUS-SHU 221**  
**Songwriting**

What's in a song? What are the qualities of an effective song, and what features do famous songs and songwriters share? In this course, students will learn the essential elements of songwriting—melody, harmony, form, lyrics, and more—via analysis of existing popular music in a variety of styles. Through popular music analysis, guided class work, and talks with guest composers, students will engage in the songwriting process toward presenting fully and partially realized original songs. Prerequisite: None. Some prior experience in music is recommended; students should contact instructor prior to registering. Fulfillment: General Elective. Repeat rule: Non-Repeatable. Students can only take this course once during their study at NYUSH.

**MUS-SHU 225**  
**The Structure of Music**

This course examines the basic components of sound (frequency, duration, amplitude, sequence, timbre, harmony) and how they are used as building blocks in creating recognized musical forms. By means of oral, aural, score study and written work/composition, students will be able to recognize these elements, how they function and are used in simple melody through more complex larger forms such as binary, ternary, rondo, variations, and sonata. Prior musical study is recommended, but not necessary.

**MUS-SHU 226**  
**Topics in Music: Theory at The Keyboard**

Theory at the Keyboard allows for examining and combining musical concepts of rhythm, melody and harmony by means of using the keyboard. Students will by playing, reading and listening to explore Prerequisite: None. Fulfillment: General Elective.

**MUS-SHU 227**  
**Into the Musicals**

Musical Theatre, as a popular art form, holds a unique place in our contextual understanding of the world's culture, history, and sociology. It can be seen as a platform for discussing socially embedded being such as racial issues, homosexuality, and mental health awareness. This is a hybrid course that combines Musical Theater History with Vocal Performance to encourage students analyzing social topics that are revealed in various musical works while also portraying different characters from these shows within the learning process. Each week students will engage in the critical analysis of selected musicals with a focus on understanding their importance in cultural and social histories, discussing the social themes embedded in those works. Pre-requisite: None. Fulfillment: General Elective. Repeat rule: Non-Repeatable. Students can only take this course once during their study at NYUSH.

**MUS-SHU 260**  
**Introduction to the History of Western Music**

Introduction to the History of Western Music is a survey course designed to provide students with broad knowledge of Western music, spanning the Middle Ages through the early Twenty century. Students will develop an understanding of this history as well as the contexts in which musical movements, styles, and theories occured. Through the biographical and cultural contexts, together with a rich repertory of listening materials, students will be able to shape their construcrational perception of Western music and its linkage to today's musical environment, and develop critical listening and music appreciation skills. Prerequisite: None Fulfillment: General Elective. Repeat rule: Non-Repeatable. Students can only take this course once during their study at NYUSH.

**MUS-SHU 1085**  
**Choral Arts: NYU Shanghai Chorale**

For Non-major. The NYU Shanghai Chorale will explore all types of choral music - pop, jazz, classical etc., help you improve your singing and musicianship skills in a fun environment. Those taking for one or two credits will receive individual singing instruction outside of class at mutually convenient times throughout the semester. Sectional rehearsals may be called as needed. Prerequisite: None. Fulfillment: General Elective. Repeat rule: Students can take this course up to two times in total (not necessarily consecutive) for credit during their study at NYUSH.

**MUS-SHU 1086**  
**Choral Arts: NYU A Cappella**

This is an advanced performance ensemble for students that read music and/or learn music quickly. Prior solo or choral training is preferred. Instruction will take the form of group and sectional rehearsals and private instruction for those registered for credit. Students may also have the option to sing with one of the other NYU Shanghai choral classes. Prerequisite: None. Fulfillment: General Elective. Repeat rule: Students can take this course up to two times in total (not necessarily consecutive) for credit during their study at NYUSH.

**MUS-SHU 1087**  
**Elite A Cappella, NYUSH Chamber Singer**

NYUSH Chamber Singers is a performance-oriented class that prepares students for ensemble and solo public performance covering a wide spectrum of vocal genres. Instruction in vocal technique, sight reading, performance practices and musicianship will be included in all instructions. This course culminates in public performance(s) representing the university at events and in concert. This course also provides the students with the opportunity to perform more regularly and at community events as no accompaniment is required. This course is 2 credit. Course
Requisite: By Audition Fulfillment: General Elective. Repeat rule: Students can take this course up to two times in total (not necessarily consecutive) for credit during their study at NYUSH.

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisite</th>
<th>Fulfillment</th>
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<td>MUS-SHU 1179.1</td>
<td>Chamber Ensemble: Orchestra Instrumental</td>
<td>None.</td>
<td>General Elective</td>
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<td>MUS-SHU 1179</td>
<td>Chamber Ensemble: Orchestra</td>
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<td>MUS-SHU 1182.1</td>
<td>Chamber Ensemble: Jazz</td>
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<tr>
<td>MUS-SHU 1182</td>
<td>Chamber Ensemble: Jazz</td>
<td>None.</td>
<td>General Elective</td>
<td>Students can take this course up to two times in total (not necessarily consecutive) for credit during their study at NYUSH.</td>
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ART-SHU 101

What is Art?

This introductory class explores the nature and value of the arts through an examination of aesthetic theory, select art movements and their context and through hands-on projects that acquaint students, in an embodied fashion, with how artists make meaning. It considers art’s powers and limits, its benefits and potential dangers, the nature of artistic mediums and unpacks the mechanisms through which art communicates a particular vision. At the end of this course, students will be able to define and utilize key terms and concepts particular to the visual arts, and able to create compelling and researched arguments that synthesize theoretical, historical, iconographical and technical frameworks. They will also be able to perform in-depth analysis of artworks and visual media and create and defend their own artworks. Prerequisite: None. Fulfillment: Humanities Major Foundations/Introductory Course (18-19: Critical Concepts/Survey Course).

ART-SHU 103

Foundations in Visual Arts

Foundations in Visual Arts introduces students to the basic elements of art making and visual art terminology through hands-on experimentation with materials supplemented by tutorials, workshops, and lectures. Students will work on a number of different projects to explore line, shape, form, space, light/value, color, texture, across 2D and 3D. Foundations in Visual Arts gives students an overview of how these fundamental principles, in concert with different media, subjects and techniques, create meaning in the visual arts. Prerequisite: None. Fulfillment: General Elective.

ART-SHU 211

Foundations in Painting: Painting in Practice and Theory

Painting is an incredibly versatile medium and its dynamic evolution across cultures and through millennia continues up until the present. The medium’s relevance and capacity for reinvention are evidenced in the work of a number of contemporary painters who have incorporated inventive materials and/or methods into their practice to both push its limits and explore contemporary concerns. In this class, students will get an introduction to the fundamental technical, formal, and conceptual principles of painting. Using watercolor, gouache, and acrylic, students will explore color theory, composition, texture, form, and surface using a wide range of techniques. Through selected readings, students will also examine the theoretical questions and historical precedents that have informed painting’s development, see how they relate to or have been challenged by the work of contemporary painters and be able to connect select concerns to their own practice. In addition to acquiring basic technical skills and conceptual know-how, students will also gain competency in art critiques and writing artist statements. Prerequisite: None. Fulfillment: General Elective.

ART-SHU 222

Site and Situation: Social Space and Public Art

Based on "Site" as having its own history and implications, students will investigate the psychogeography of space - how cultural and individual subjectivities both inform and are informed by location, architecture, and geography (both interior and exterior spaces). They will use Shanghai as a case study for these inquiries. Through open, experimental, and cross-disciplinary practice, informed by outings (ranging from parks to architectural spaces), readings, workshops, and assignments, students will develop one semester-long individual project. Students will research a location in or near Shanghai and, drawing on its history and current state and usage, develop a portfolio which includes documentation of the site, interviews, a concept proposal, a research paper, a digital storytelling component, an oral presentation, an artist statement, and a scale model. Prerequisites: None. Fulfillment: General Elective.

ART-SHU 250

Visual Culture and Social Art Practice: Collaborations and Community Interactions

Visual Culture and Social Art Practice: Collaborations and Community Interactions is an interdisciplinary course which combines relational, performative, and collaborative community-based engagements with theoretical and conceptual investigations. Students interact artistically and directly with local communities as well as consider themselves in relation to those communities. Through the lens of social and relational art practices, they will develop and realize projects specific to various communities in Shanghai. Note: This is a Deans Service Scholar course in collaboration with the Office for Community Engaged Learning (https://shanghai.nyu.edu/undergraduate/community-engaged-learning). Enrolment in this course requires the completion of an application, an orientation to service learning, and participation in an event to present and celebrate your final projects. Materials Fee: 200rmb Prerequisites: None. Fulfillment: General Elective.

ART-SHU 255

Printmaking in an Expanded Field

This Praxis course is an exploration of contemporary and traditional artistic printmaking practices, with an emphasis on expanding notions of conventional printmaking techniques and forms. Students will be introduced to various printmaking techniques and artifacts in conjunction with their cultural, historical, and political implications. They will experiment with traditional and non-traditional forms and consider what constitutes a hand-made print in an artistic framework. Students will gain an understanding of printmaking - its history based in China, development across the globe and inventive contemporary practices which include sculptural forms. They will learn techniques, modes, forms, and applications of printmaking (monotype, transfers, stamps, relief printing, and digital formats) in a conceptual framework of contemporary printmaking practices and global visual culture. Prerequisites: None. Fulfillment: This course satisfies IMA elective.
This advanced course is designed for students who want to create a body of work as the culmination of their Projects in Studio Art. ART-SHU 1911 Writing OR CRWR-SHU 161 Introduction to Creative Writing: Literary Translation. Fulfillment: Counts as a designated 301 Photography 1, OR ART-SHU 310/9210 Introduction to Studio Art OR CRWR-SHU 159 Introduction to Creative Environment, OR ART-SHU 255 Printmaking in an Expanded Field, OR ART-SHU 275 Mark Making, OR ART-SHU or printmaking. Prerequisite: ART-SHU 103 Foundations in Visual Art, OR ART-SHU 251 Typography in the Urban various forms and according to their strengths - drawing, painting, digital collage/drawing, photography, and/ approach and specific materials). Students may choose to articulate the “graphic” portion of the project in assignment: a graphic novel of approximately 16 pages (actual number of pages determined by conceptual story-telling including dialogue; world-building; and plot and character development. The course has one major assignments in drawing; story-boarding; coloring; and composition in conjunction with short-form written vocabulary and fundamental elements of creating an effective visual sequential narrative through skill-based This Praxis course will guide students through the making of a short graphic story. Students will learn the vocabulary and fundamental elements of creating an effective visual sequential narrative through skill-based assignments in drawing: story-boarding; coloring; and composition in conjunction with short-form written story-telling including dialogue; world-building; and plot and character development. The course has one major assignment: a graphic novel of approximately 16 pages (actual number of pages determined by conceptual approach and specific materials). Students may choose to articulate the “graphic” portion of the project in various forms and according to their strengths - drawing, painting, digital collage/drawing, photography, and/ or printmaking. Prerequisite: ART-SHU 103 Foundations in Visual Art, OR ART-SHU 251 Typography in the Urban Environment, OR ART-SHU 255 Printmaking in an Expanded Field, OR ART-SHU 275 Mark Making, OR ART-SHU 301 Photography 1, OR ART-SHU 310/9210 Introduction to Studio Art OR CRWR-SHU 159 Introduction to Creative Writing OR CRWR-SHU 161 Introduction to Creative Writing: Literary Translation. Fulfillment: Counts as a designated course towards the Creative Writing Minor.

This advanced course is designed for students who want to create a body of work as the culmination of their
Visual Arts studies. Students will synthesize technique, materiality, historical and theoretical knowledge, and their individual subjectivities to create unique artworks in a critical framework. Students will examine traditional and contemporary artworks from around the globe, and develop the skills to translate their investigations into artistic forms. Class time will be devoted to studio work, individual and group critiques, lectures, class discussions, and visits to local artists, galleries and museums. By the close of the semester, each student will have a complete body of artwork, including individual projects, artist statements, a short research paper, and will participate in an exhibition. Prerequisite: ART-SHU 310/9210 Introduction to Studio Art, or ART-SHU 255 Printmaking in an Expanded Field, or ART-SHU 275 Mark Making, or ART-SHU 306 Moving Images 1, or ART-SHU 211 Foundations in Painting, or ART-SHU 301 Photography 1. Fulfillment: General Elective.

ART-SHU 9077
Contemporary Art & New Media

Over the past three decades, the contemporary art scene in China has expanded fast. The massive political, economic, and social changes the country has undergone since the end of the Cultural Revolution in 1976 have dramatically altered its cultural landscape. The course will survey the main development areas in Chinese contemporary art. Dedicated to responding to the new textures of China's metropolitan culture, it will look at the relationship between visual arts, new media, architecture and performance in the mega-city of Shanghai, often regarded as the cradle of Chinese modernity. The class will be complemented by guest lectures and visits to public museums, galleries and artists' studios in and around Shanghai. Students will have the opportunity to meet leading figures from the art world in China as well as the international art community, including artists, museum directors, curators, art critics, and art dealers. Prerequisites: None Fulfillment: CORE HPC or IPC; GCS Chinese Media, Arts, and Literature; Humanities Interdisciplinary/Advanced Course.
Biology

Biology

BIOL-SHU 21
Foundations of Biology I

Prerequisites for BIOL-SHU 21 is MATH-SHU 121 or MATH-SHU 201 Fulfillment: CORE ED; Biology, NS, Physics
Foundational course; Math/Honors Math Science Lecture; DS concentration in Genomics.

BIOL-SHU 22
Foundations of Biology II

Prerequisites: BIOL-SHU 21 Foundations of Biology I and (MATH-SHU 131 Calculus or MATH-SHU 123 Multivariable
Calculus or MATH-SHU 201 Honors Calculus). Fulfillment: Biology Major Foundational Courses; Mathematics Major
Science Lecture sections; Honors Mathematics Major Science Lecture sections; Neural Science Major Foundational
Courses; Data Science Major Courses for Concentration in Genomics.

BIOL-SHU 30
Genetics

Why do offspring often exhibit physical features of their parents? Why do combinations of certain features in
offspring translate into specific characteristics that either enhance or diminish the organism’s fitness? Answers to
questions such as these fall partly within the discipline of genetics, which is the study of heredity. Principles from
the Foundations of Science curriculum and Organismal Biology provide a framework for learning about classical
genetics, chromosome structure and mutation, gene function and regulation, and aspects of molecular and
developmental genetics. Recent studies in human genetics and their applications, particularly to health-related
issues, are also investigated. Prerequisite: BIOL-SHU 22 Foundations of Biology II. Fulfillment: Core Curriculum
Requirement Science, Technology and Society Courses; Biology Major Electives; Neural Science Major Approved
upper-level Biology courses.

BIOL-SHU 31
Genetics Laboratory

Prerequisite or co-requisite is BIOL-SHU 30 Genetics or BIOL-UA 30 Genetics. Fulfillment: Biology Major Electives.

BIOL-SHU 123
Foundations of Biology Lab

The course will teach students the skills needed in molecular biology research such as the hand-on techniques
of microscopy, transformation, gene expression, PCR, gel electrophoresis, SDS-PAGE, and chromatography. The students will first learn these basic biological techniques in short experiment sets and then apply them as part of
a Genetically-Modified Food project. The lab course will also emphasize literature search, scientific writing, peer
reviewing, lab notes taking, poster and power point presentations, data analysis, and best practices in lab safety.
FoS 5&6 labs are regarded as an extension to what the course lectures teach rather than a direct linear relationship
whereby a lecture is directly applied in the lab. The pre-labs that are given as lectures before the actual lab begins
span a weekly 30-45 min and explain the principles behind the techniques that the students will apply that lab.
Students are required to study the lab procedure in advance and be prepared for a quiz and discussion of the
material. Learning Outcomes: This course aims at teaching students how to think like a true researcher as well as
apply the key molecular biology techniques. During this course, students will be expected to: gain an understanding
of the basics of molecular biology techniques and be able to apply these techniques in the lab; acquire the habits
of a good scientist including accuracy, cleanliness, orderliness, safety, honesty, teamwork, curiosity, good time
management, and self-reliance develop the ability to convey scientific information; this includes keeping good
records with in a lab notebook, writing a satisfactory report, and oral communication; draw conclusions from
observed facts and support these conclusions with peer-reviewed literature; pre-reqs: (MATH-SHU 131 Calculus or
MATH-SHU 123 Multivariable Calculus or MATH-SHU 201 Honors Calculus) and BIOL-SHU 21 Foundations of Biology
I. Fulfillment: Core Curriculum Requirement Experimental Discovery in the Natural World Courses; Biology Major
Foundational Courses; Mathematics Major Science Lab sections; Honors Mathematics Major Science Lab sections;
Neural Science Major Foundational Courses; Physics Major Foundational Courses; Data Science Major Courses for
Concentration in Genomics.

BIOL-SHU 250
Organismal Systems

The array of organisms that populates the globe is astounding in its diversity and adaptability. This course uses
fundamental concepts from the Foundations of Science curriculum to examine essential elements of animal
physiology, including adaptations to environments such as deserts. This course develops an understanding of the
relationship between structure and function of the organism; how structure develops through evolutionary and
developmental processes; and how structure is related to the environment surrounding the organism. Prerequisite:
BIOL-SHU 21. Fulfillment: Biology required course.

BIOL-SHU 261
Genomics and Bioinformatics

Fueled by recent advances in technical approaches to data collection and analysis, the biological sciences have
entered a new era in which vast amounts of genome-scale sequence and functional data are becoming available
for a large number of species, including human. Many medical and biological studies are being carried out on an
unprecedented scale. The surge of biological data changes genomics and biology into one of the major research
topics in data science. Familiarity with the fields of genomics and bioinformatics, which impact society on all levels,
is vital for the next generation of scientists. The course of Genomics and Bioinformatics introduces to students a
broad range of subjects in this field through lectures and hands-on exercises that use fundamental principles of biochemistry, computer science, and mathematics. Students are also expected to understand G&B applications such as how genomic analysis is used to facilitate precision medicine research, and how to study biology questions from a systemic perspective. Prerequisite: BIOL-SHU 21 Foundations of Biology I and (one of Stats course BIOL-SHU 42 or MATH-SHU 20 or MATH-SHU 235 or MATH-SHU 234 or BUSF-SHU 101) and (CSCI-SHU 11 ICP or CSCI-SHU 101 ICS). Fulfillment: Core Curriculum Requirement Science, Technology and Society Courses; Biology Major Biology Electives; Data Science Major Courses for Concentration in Genomics.

BIOL-SHU 263
Developmental Biology
Multicellular organisms undergo a series of complex temporal and spatial changes in gene expression following fertilization, which results in the highly organized, coordinated cell divisions needed for growth and development. This course introduces students to the principles and experimental strategies of developmental biology. It covers the cellular and molecular basis for patterning in the embryo; the determination of cell fate; cell differentiation; the genes controlling these events; how the genes are identified and studied; and the cellular proteins that affect shape, movement, and signaling among cells. Prerequisite BIOL-SHU 250 Organismal Systems, or Foundations of Biology II. Fulfillment: Biology elective; Neural Science Approved upper-level Biology course.

BIOL-SHU 271
Cell Biology: Body's Battle with Cancer
This course is designed to provide comprehensive understanding of how cancer breaks our body’s defense for its survival. Cancer is a devastating disease in a modern society and a plethora of efforts has been made to find its cure. In this course, students will learn how difficult fighting against cancer is in a molecular level. Furthermore, using cancer as an example, students will also learn how metazoan develops multiple defense mechanisms and survives in the hostile environment. Prerequisite: Foundations of Biology I (BIOL-SHU 21). Fulfillment: Biology Elective.

BIOL-SHU 314
Advanced Cell Biology Lab
The course takes an in-depth look to understand the fundamental and advanced methods for growing and studying cells—the smallest units of life. This course introduces students the fundamentals of cell biology and the experimental approaches used in research to examine the cell structure and function. Topics cover cell line cultures, the structure and function of the cells, metabolic pathways, cell signaling pathways, and gene function investigation in vitro in cells. The laboratory course will teach students the skills needed in advanced cellular biology research such as the hands-on techniques of cryopreservation, transfection, realtime PCR, immunofluorescence, RNA isolation, cDNA construction, gene expression and regulation. The lab course will also emphasize literature search, scientific writing, lab notes taking, data analysis, and best practices in lab safety. The course is designed as an upper level 4-credit major elective course, for biology and neural science majors mainly, and open to other natural science majors who have taken Foundation of Biology I or II, or FoS Biology Lab. Prerequisite for BIOL-SHU 21 Foundations of Biology II or BIOL-SHU 22 Foundations of Biology II or BIOL-SHU 123 Foundations of Biology Lab. Fulfillment: Biology elective; Neural Science Approved upper-level Biology course.

BIOL-SHU 400
Independent Study - Biology Capstone
Students must conduct two semesters of research (8 credits) with a faculty member in NYU Shanghai Biology or another faculty member approved by the Biology Area Director. One semester of research can be conducted in NYU NY or NYU AD upon approval of Biology Area Director and NYU SH faculty advisor. The students must take the Undergraduate Research Thesis course in Shanghai in the last semester of senior year and prepare a written thesis of the research. The students must submit the research thesis for approval by two NYU Shanghai biology faculty members. Presentation of the thesis work at the NYU Shanghai Undergraduate Research Conference is required. Once a student completes all of the requirements for the honors program, there is a competitive selection process for determining which students receive the Major Honors recognition. Fulfillment: Biology Major Electives.

BIOL-SHU 997
Independent Study - Biology
Prerequisite: Foundations of Science I-III (or Physics I&II, Foundations of Chemistry I&II, Foundations of Biology I&II), and a minimum GPA of 3.0 overall and in all science and mathematics courses required for the major, permission of a biology faculty member (at NYU-Shanghai, NYU-Abu Dhabi, or NYU-New York) who will act as a sponsor and mentor, and approval of the Discipline Leader in Biology. The faculty mentor must be selected in consultation with the Discipline Leader in Biology. Offered in the Fall, Spring or Summer. 2 to 4 points per term for a maximum of 4 points. This course aims at engaging students in research. It is designed to offer students an opportunity to observe biological research up close and gain hands-on research experience by working as a member in an active research team. Independent Study I and II can be done with the same supervisor or two different supervisors. No lectures will be given. Student researchers are expected to attend and actively participate in lab/supervision meetings. A Proposal for Independent Study form must be filled out, signed by the Discipline Leader in Biology, and submitted to the student's academic advisor. Requires a written report on the research to be evaluated by the faculty sponsor, with a copy submitted to the Discipline Leader in Biology and a copy to the Dean of Arts & Sciences. Prerequisite: department consent. Fulfillment: Biology Major Electives.
BIOL-SHU 998

**Integrated Science Capstone**

This course will provide students with a completion of their undergraduate science education by making use of the skills and knowledge they acquired over the course of completing their major to apply to scientific problems across disciplines. Students will be paired with a faculty mentor to engage either in Independent Research or Literature Review to address a scientific question of the student’s design, culminating in a written report. Students are encouraged to work with faculty mentors outside of their own field. Open only to Biology, Chemistry, and Physics majors in the senior year. Prerequisite: senior students with Biology major. Fulfillment: Biology required.

BIOL-SHU 999

**Biology Undergraduate Research Thesis**

Prerequisites: Independent Study (BIOL-SHU 997 or 998), a minimum GPA of 3.65 overall, a minimum GPA of 3.65 in all science and mathematics courses required for the major, and permission of a sponsor and the Dean of Arts & Sciences. Open to Biology majors only. The faculty mentor must be selected in consultation with the Dean of Arts & Sciences. May not be used for the major in biology. Offered in the fall, spring, and summer. 2 points. For biology majors who have completed at least one semester of laboratory research (BIOL-SHU 997 or 998) and are able to expand this work into a thesis. Requires writing a Thesis (i.e., a full literature search of the subject and a formal written report on the research in publication form), which is defended in front of a committee of three faculty (which includes the faculty sponsor), chosen by the student in consultation with the faculty mentor. (The defense may be a brief oral presentation followed by a question-and-answer session.) The Thesis and defense must be evaluated by the committee, with the cover page of the thesis signed by all committee members, with a copy of the Thesis submitted to the Dean of Arts & Sciences. (It is recommended that the student meet with the faculty committee at least once mid-semester to evaluate and guide the student’s progress on the thesis work.) Prerequisite: None. Fulfillment: Biology Elective.
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<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisite/Comments</th>
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<tr>
<td>BUSF-SHU 3</td>
<td>Business and Economics Honors Seminar</td>
<td>Prerequisite: Permission by the Coordinator of Business Honors Program. Fulfillment: This course may satisfy China Business Studies, depending on the individual topic; otherwise non-Finance/non-Marketing elective.</td>
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<tr>
<td>BUSF-SHU 5</td>
<td>Principles of Finance for Non-majors</td>
<td>This course is for Non-Business and Non-Data Science with Finance Concentration students. It is a general elective course.</td>
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<tr>
<td>BUSF-SHU 48</td>
<td>Derivatives</td>
<td>This is a course in derivatives markets, focusing on their structure, valuation and strategies. It combines theory, empirical findings and practical applications. The main applications include equity, fixed income, foreign exchange and commodity (e.g., oil, gold, silver) markets. The key derivatives instruments discussed in detail include forwards, futures, swaps and options. Readings, cases and examples include the recent Financial Crisis, the 1987 Crash, LTCM, Metallgesellschaft, and the Covid-19 Economic Crisis. Pre-requisite: Foundations of Finance. Fulfillment: BUSF Finance elective; BUSM Non-Marketing elective; IMB Business elective.</td>
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<tr>
<td>BUSF-SHU 101</td>
<td>Statistics for Business and Economics</td>
<td>This course introduces students to the use of statistical methods. Topics include: descriptive statistics; introduction to probability; sampling; statistical inference concerning means, standard deviations, and proportions; correlation; analysis of variance; linear regression, including multiple regression analysis. Applications to empirical situations are an integral part of the course. Prerequisite: None. Fulfillment: This course satisfies the following: Major req: BUSF, BUSM, ECON, CS, DS Foundational course; Social Science: methods course; IMB Business elective.</td>
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<tr>
<td>BUSF-SHU 142</td>
<td>Information Technology in Business &amp; Society</td>
<td>In Information Technology in Business and Society, students learn the fundamental concepts underlying current and future developments in computer-based information technology - including hardware, software, network and database-related technologies. They will also acquire proficiency in the essential tools used by today's knowledge workers and learn how these can be used to help solve problems of economic, social or personal nature. Throughout the course, they will be exposed to a range of more advanced topics which may include big data, information privacy, information security, digital piracy and digital music. Prerequisite: Requires sophomore or higher standing. Fulfillment: This course satisfies BUSF/ BUSM Business Elective, Business Analytics Track; IMB Business Flexible Core.</td>
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<tr>
<td>BUSF-SHU 200D</td>
<td>Business Consulting in China</td>
<td>This course provides a consultant’s perspective on business consulting, particularly in China context. It introduces the principles, end-to-end processes, frameworks and best practices of business consulting. The course addresses how consulting firms work, what it is like working in a consulting firm and being on a consulting project. Students will form project teams and apply the principles and frameworks to real-life business consulting projects from mid-small companies in China. Prerequisites: Management and Organizations or Intro to Marketing, requires Junior or Senior standing. Fulfillment: This course satisfies Business China Business Studies or Non-Finance/Non-Marketing elective; Business Management Track; IMB Business elective.</td>
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<tr>
<td>BUSF-SHU 200G</td>
<td>Experiential Mediation</td>
<td>Mediation is one of the most effective processes for addressing conflicts and achieving meaningful, creative and lasting solutions that preserve relationships. While Mediation has been effective in building peace following destructive interpersonal, intercommunity and international conflicts, it still remains misunderstood and underutilized, especially in the international context. Mediation is often confused with other means of alternative dispute resolution such as arbitration, negotiation or conciliation. Mediation is characterized by self-determination of the parties; mediators do not make decisions but rather facilitate the parties to discuss their viewpoints, generate new options and create effective solutions. Mediations are usually conducted confidentially in private settings. Impartial mediators, often working in teams, guide individuals and groups through a series of stages so they can find their own solutions. The course will be designed around experiential modules and the introduction of different mediation environments. Prerequisite: None Fulfillment: BUSF Non-Finance elective; BUSM Non-Marketing elective; IMB Business elective.</td>
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<tr>
<td>BUSF-SHU 202</td>
<td>Foundations of Finance</td>
<td>This course is a rigorous, quantitative introduction to financial market structures and financial asset valuation. It has three goals: 1. To develop the concepts of arbitrage, the term structure of interest rates, diversification, the Capital Asset Pricing Model (CAPM), valuation of an individual firm, efficient and inefficient markets, performance evaluation of investment management, and valuation of derivative securities, particularly options. 2. To provide sufficient background knowledge about financial institutions and market conventions for students seeking an</td>
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overview of capital markets as an introduction to advanced finance courses. 3. To introduce the principles of asset valuation from an applied perspective. The majority of the class is concerned with the valuation of financial securities. These valuation issues are heavily used in portfolio management and risk management applications. Throughout the course every effort will be made to relate the course material to current financial news. To take this course, students must be comfortable with statistics, linear algebra, calculus, and microeconomics. Prerequisites: ECON-SHU 3 Microeconomics and (BUSF-SHU 101 Statistics for Business & Econ or MATH-SHU 235 Probability and Statistics), Fulfillment: This course satisfies BUSF/BUSM Major core; IMB Business Flexible Core or elective; Data Science concentration in Finance/Marketing. It can count for the Stern Minor.

BUSB-SHU 206
Investing And Financing In And With China

What does it take to be successful in China? How do domestic and foreign businesses do in the world’s most dynamic economy? How do Chinese entrepreneurs work in a dynamic country? How do investors think about cross border investing into and out of China? How do investors think about cross border investing into and out of China? What are the leading opportunities in Chinese markets today? How are Chinese firms reshaping global business? Course overview This course is designed to prepare students for a good overview of investments, financing as well as conducting business in and with China. The class format will include lectures, case studies, discussions, guest speakers and student presentations to explore the opportunities and risks of international and domestic investments in China as well as the outward expansion of Chinese firms. The course will be required the student’s active participation and parts will involve group work. Leading industry guest speakers and a site tour may be arranged for further learning enhancement, schedules permitting. The course materials will draw heavily on the lecturer’s experiences. Target students / audience The target students are NYU Shanghai business & finance majors, economics majors and study abroad students from Stern. This course is suitable for any student interested in understanding international business, emerging markets, investments, cross border business and China. No prior knowledge or experience with China’s business environment is required. Prerequisites: Foundations of Finance and Economics of Global Business (or Macroeconomics). Corporate Finance is recommended but not required. Fulfillment: BUSF Finance elective or China Business Studies; BUSM Non-Marketing elective or China Business Studies; IMB Business elective.

BUSB-SHU 210
Business Analytics

This course introduces the basic principles and techniques of applied mathematical modeling for managerial decision making. You will learn to use some important analytic methods (e.g., forecasting, data mining, optimization, Monte Carlo simulation), to recognize their assumptions and limitations, and to employ them in decision making. The course is entirely hands-on. The emphasis will be on model formulation and interpretation of results, not on mathematical theory. The emphasis is on models that are widely used in diverse industries and functional areas, including finance, marketing, and operations. Prerequisite: BUSF-SHU 101 Statistics for Business & Econ or MATH-SHU 235 Mathematical Statistics or MATH-SHU 235 Probability and Statistics. Fulfillment: CORE AT; BUSF/BUSM Business elective, Business Analytics Track; IMB Business Flexible Core course.

BUSB-SHU 215
Alternative Investment I: Principles & Strategies

This course provides both a theoretical and practical look into the world of managing alternative investments, in particular, hedge funds. The long-term goal of the course is for students to understand how investment managers put outside capital to work. In order to do this, students need to understand how classic hedge fund strategies are executed, how to evaluate these strategies as well as new ones, and how to manage risk. The course intends to teach students in all of these areas. Prerequisite: Foundations of Finance (BUSF-SHU 202) Fulfillment: Business and Finance Major: Finance Elective; Business and Marketing Major: Non-Marketing Elective; IMB Business Elective.

BUSB-SHU 221
Professional Responsibility & Leadership

Professional Responsibility and Leadership (PRL) is an interdisciplinary course designed to help students: Become more familiar with the variety of ethical dilemmas that can arise in the course of business practice & in one’s personal life; Understand the different values and principles that can inform and guide decision-making in such ambiguous and difficult situations; Gain experience articulating and defending courses of action as future societal & business leaders; and Begin the process of developing professional ethics in harmony with their own personal values. The format of the course is a discussion seminar. Each class session may include a variety of activities, including: discussion, in-class reading and writing, role-playing, and other participatory exercises. These various activities will be designed and facilitated by the instructor to allow students to engage in a reflective dialogue. These discussions draw from three different sources: 1) the students’ own personal experiences and values; 2) expert insights drawn from a variety of academic disciplines including philosophy, literature, history, and art, as well as the natural and social sciences; and 3) relevant business cases. In each class session, students consider a set of expert accounts identified by the instructor as starting points for discussion, and then they integrate their experiences with business cases that have personal relevance for them. The overarching themes of this dialogue include: 1) the relationship between business and society on a global, national and local basis; 2) the foundations of personal and professional business ethics; and 3) the exercise of leadership in organizations. Prerequisite: None. Fulfillment: BUSF Non-Finance; BUSM Non-Marketing elective; IMB Business elective.

BUSB-SHU 225
Negotiation and Consensus Building

This course will teach you the science and practice of negotiation - creating agreements between two or more
interdependent parties. We negotiate daily with potential employers, co-workers, landlords, merchants, service providers, significant others, family members, friends, roommates, and more. These negotiations often lead to outcomes that are less than they could be, and at times they also lead to conflict. Although we negotiate often, many of us know very little about the strategy and psychology of effective negotiation. The main objectives of this course are to understand the structure of negotiation as it is practiced in a variety of settings, and to help students feel more comfortable and confident with the negotiation process. We will discuss theories and principles to guide our negotiations (the science). And students will develop and sharpen their bargaining skills by actually negotiating with other students in experiential exercises (the practice). Prerequisites: None. Fulfillment: BUSF Non-Finance Elective; BUSM Non-Marketing elective; Business Management Track; IMB Business elective.

BUSF-SHU 244
Portfolio Management

Portfolio management: The art and science of making decisions about investment mix and policy, matching investments to objectives, asset allocation for individuals and institutions, and balancing risk against performance. (Investopedia) The primary objective of the course is to study the theory and empirical evidence relevant for investing, particularly in the context of portfolio management. The basic theoretical framework is standard modern portfolio theory, as developed in Foundations of Finance, and its extensions. "Modern portfolio theory" is a general approach for maximizing the expected return of a portfolio given a certain amount of risk. This approach is the basis of virtually all quant investing strategies and is widely used by traditional portfolio managers as well. There has been a proliferation of new products and strategies in the asset management space in recent years, e.g., smart beta, alternative beta, fundamental indexing, low volatility, and leveraged and inverse ETFs. This course applies portfolio theory to understand and evaluate these products and strategies in the context of the empirical evidence about return patterns across assets (i.e., the factors such as value/growth, momentum, and carry that drive returns) in multiple markets/asset classes (e.g., US and international equities and bonds, currencies, and commodities). The course will rely heavily on Excel modeling using real world data. Prerequisite: Foundations of Finance. Fulfillment: BUSF Finance elective; BUSM Finance elective; BUSM Business elective.

BUSF-SHU 250
Principles of Financial Accounting

Develops students’ abilities to understand business transactions and financial statements and to determine the most appropriate financial measures for these events. Investigates the underlying rationale for accounting practices and assesses their effectiveness in providing useful information for decision making. Emphasis is placed on accounting practices that purport to portray corporate financial position, operating results, cash flows, manager performance, and financial strength. Prerequisite: Requires sophomore or higher standing. Fulfillment: This course satisfies BUSF/BUSM Major core /Business Accounting track; IMB Business required Foundation /elective; Data Science concentration in Finance/Marketing. It can count for the CAS Business Studies Minor.

BUSF-SHU 270
Financial Reporting & Disclosure

Students learn the financial reporting rules associated with the concepts learned in FSA. The course emphasizes the relationship between financial statements and the reporting rules on which they are based. Prerequisite: Principles of Financial Accounting. Fulfillment: IMB Business elective; BUSF Non-Finance elective; BUSM Non-Marketing elective; Business Accounting track.

BUSF-SHU 271
Artificial Intelligence for Business

Artificial Intelligence (AI) is reshaping business processes, creating disruptive innovations that change established industries and markets beyond recognition. The emergence of powerful algorithms, combined with recent growth in computational power and availability of massive amounts of data, enable companies to operate faster, make better decisions, automate processes, maximize revenue and customer engagement, among many other advantages. In this 7-week course we will briefly discuss some of the core principles underlying AI and then focus on a few selected applications of AI in business, such as predictive analytics for maximizing marketing and financial strategies, pattern recognition to understand customer behavior, and conversational AI and chatbots to improve engagement and customer experience. Last, AI also possesses significant limitations and poses new challenges with respect to fairness, biases, and automated errors. The course will conclude with a discussion of the main ethical issues and risks associated with AI technology. Prerequisite: Calculus and ICP. Sophomore or above students. Fulfillment: BUSF Non-Finance elective; BUSM Non-Marketing elective; IMB Business elective.

BUSF-SHU 274
Distributed Ledger Technology: Ethereum, DeFi, and Beyond

One of the most exciting socio-technological developments in the past decade has been the emergence of blockchain technology, and with it the Blockchain Economy. This subset of the digital economy has mostly been driven by the Internet-of-Value (web3.0) where decentralized platforms compete over user’s investments in various blockchain verticals. These include Decentralized Finance (DeFi) - a vibrant decentralized money management ecosystem, NFT’s that promise to overhaul how we consume and invest in art, DAO’s that decentralize business governance, various novel financial instruments such as perpetuals, ERC20’s to disintermediate resource sharing, and many more. Fulfillment: BUSF Non-finance Elective; BUSM Non-marketing Elective; IMB Business Elective. Prerequisite: CSC1-SHU 1 Introduction to Computer Programming. Antirequisite: Students who have taken ECON-SHU 432 Blockchain, Cryptocurrency & Money or BUSF-SHU 366 Applications in Entrepreneurial Finance: Fintech are not eligible to enroll.
This course introduces the institutions, instruments, and empirical regularities of Chinese financial markets and the role these markets play in the broader Chinese economy. The goal of the course is to provide students with a comprehensive understanding of Chinese financial markets. It focuses on current issues and debates about Chinese financial markets, including the Chinese banking system, RMB exchange rates, Chinese stock markets and bond markets, mutual fund and hedge fund industry, Chinese derivative markets and other important topics. The similarities and differences between Chinese financial markets and more developed markets will be highlighted. Pre-requisites: Foundations of Finance or Principles of Finance Fulfillment: BUSF China Business Studies or Finance elective; BUSM China Business Studies or Non-Marketing elective; IMB Business elective.

**BUSF-SHU 288**

**Doing Business with China**

The course is designed to help the students to better understand business practices, environment, and cultures in China. Special focus will be placed on the understanding of the political, institutional, and financial contexts within which business activities unfold. The course will also discuss the implications of regional and global factors in shaping opportunities and constraints on businesses in China as well as the impact of Chinese business on international markets. Learning goals of the course are to: 1. Become knowledgeable in select concepts of the businesses in China; 2. Obtain essential knowledge on the evolution and development of business in China; 3. Develop an awareness of the political, socioeconomic, and cultural aspects of life in China, including critiques of common intercultural stereotypes around values and assumptions related to Chinese society and business practices; 4. Gain practical experience in interacting with diverse Chinese business communities. Prerequisite: Junior or Senior students with primary or secondary major in Business/ IMB/ Social Science/ GCS/ Economics. Fulfillment: This course satisfies Business China Business Studies course or Non-Finance/Non-Marketing elective, Business Management Track; IMB Business Elective; GCS Elective The Politics, Economy, and Environment of China.

**BUSF-SHU 289**

**NYU Big Ideas Series: The Role of China in the Future of World Business**

This course provides students the opportunity to learn and explore the roles of China in the future of world business through lectures and discussions. Through understanding the past, examining the current and projecting the future developments, a wide range of important business topics will be analysed including: • China’s role as the factory of the world • Chinese brands’ global expansion • Financial market reform • RMB Internationalization • Doing business IN China and WITH China • China’s growth model • and more The course is taught by experienced practitioners and academics with deep knowledge about China, its impact and connections with the world business? Prerequisite: None Fulfillment: China Business Studies; IMB Business elective.

**BUSF-SHU 303**

**Corporate Finance**

This course analyzes the major financial decisions made by corporate managers. The major topics include the objective of the firm, investment valuation and capital budgeting, risk management, capital structure and dividend policy. Insights from behavioral corporate finance that help better understand corporate decisions in practice will also be discussed. There will be emphasis on both developing the tools and mindset of the financial practitioner as well as examining specific applications in the form of examples, case discussions, and classroom simulations. Prerequisite: BUSF-SHU 202 Fulfillment: This course satisfies BUSF core: BUSM Business elective; Data Science concentration in Finance; IMB Business elective.

**BUSF-SHU 304**

**Futures and Options**

This course covers the theoretical and practical aspects of futures, options, and other derivative instruments, which have become some of the most important tools of modern finance. While the primary focus is on financial derivatives, contracts based on commodities, credit risk, and other nonfinancial variables are also covered. Topics include market institutions and trading practices, valuation models, hedging, and other risk management techniques. The course requires relatively extensive use of quantitative methods and theoretical reasoning Prerequisite: BUSF-SHU 202. Fulfillment: This course satisfies BUSF Finance Elective; BUSM Non-Marketing Elective; IMB Business elective.

**BUSF-SHU 305**

**Debt Instruments and Markets**

This course describes important fixed income securities and markets and develops tools for valuing debt instruments and managing interest rate risk. The course covers traditional bond pricing, term structure, and interest rate risk concepts. It also covers the analytical and institutional aspects of fixed income derivatives, such as interest rate swaps, forwards, futures, and options, as well as bonds with embedded options and mortgage-backed securities. Topics also include credit risk, bond portfolio, management, financial engineering, and international fixed income. The study of fixed income is quantitative and technical by nature. Prerequisite: BUSF-SHU 202. Fulfillment: This course satisfies BUSF Finance Elective; BUSM Non-Marketing elective; IMB Business elective.

**BUSF-SHU 308**

**Hedge Fund Strategies**

This course aims to provide an in-depth understanding of the strategies used by hedge funds, employing a hands-
on approach based on case studies and real data. The hedge fund industry has grown rapidly over the last decade aided in part by the private nature of funds and light regulation that has enabled managers to employ strategies not available to traditional fund managers. The course examines critical aspects of hedge fund investment styles including the trading mechanism, risk-return profiles of investment styles, trading costs, risk management and performance measurement. Strategies covered include event driven strategies, equity, debt, FX, cross-market strategies, global macro and shareholder activism. Distinguished guest speakers will be invited to provide a real-life perspective and to discuss key issues. Pre-requisites: Corporate Finance Fulfillment: BUSF Finance elective; BUSM Non-Marketing elective; IMB Business elective.

BUSB-SHU 310  
Data Science for Social and Information Networks

The world we live in is built upon a myriad of networks: Human society is defined by our interpersonal relationships. Organizations are structured around interconnecting roles and lines of authority between workers, colleagues, and bosses. Global information is conveyed across a world-wide web of linked content. As we have witnessed recently, epidemics spread over a social network of contacts, in the same way in which we buy products as we are influenced by our peers. New sources of massive amounts of data fundamentally reflect interactions, and, in this context, networks are intuitive abstractions to model our social life, especially that mediated by technology. In networks, local interactions among members of small communities can often propagate and further affect the outcomes of an entire system. This course combines theories, models, and algorithms from computer science, economics, and the social sciences to analyze network data and find solutions to business problems. More information: https://shanghai.nyu.edu/is/course-spotlight-network-analytics. Prerequisites: Introduction to Computer Programing (to manipulate network datasets), and Calculus. Fulfillment: This course satisfies BUSF Non-Finance Elective; BUSM Non-Marketing elective; IMB Business Elective; Social Science methods; Computer Science elective; Data Science Concentration in AI.

BUSB-SHU 312  
International Business and Trade

International trade has fostered global economic growth as it provides investment, jobs, and access to technology. It offers opportunities to millions of people and has helped them to get out of the poverty. An understanding of real-world international trade rules and business practices is key for students in today’s interdependent world. This course introduces students to the theories, systems, and practices of international trade, with emphasis on empirical knowledge. Students will learn the fundamentals around international trade and gain a systematic understanding of why nations trade, what to trade, and especially how they trade. Students will learn principles of the multilateral trading system, international trade terminologies, operations/logistics, insurance, cross-border e-commerce; as well as technology and intellectual property rights and international commercial dispute settlement. Expected learning goals of the course are: Identify and analyze international trading system, the latest global trends of trade business and investments; Acquire knowledge of fundamental concepts, terms, and documents to facilitating sales contracts, transportation, finance arrangements, market price management; Be familiar with the use of latest technologies in international trade. Prerequisite: Business Majors; Senior or Junior Standing. Fulfillment: This course satisfies Business China Business Studies (if China related); BUSM: Non-Marketing Elective; BUSF:Non-Finance Elective; Management Track; IMB Business elective.

BUSB-SHU 318  
Investing in Emerging and Frontier Markets: Opportunities and Challenges

Taught by a seasoned practitioner who worked in international development finance and capital market for 30+ years, this advanced undergraduate seminar will enable students to gain broad understanding of how financial system and investment work in emerging and frontier markets (EM/FM); including comparative advantages and disadvantages vis a vis developed markets. Students will become familiar with players, institutions, asset classes, processes, and infrastructure when investing in EM/FM. Through individual and group projects, research papers and presentations, students will also gain a deeper understanding of specific issues of interest and appreciation of the unique opportunities, complexity, and risks in EM/FM investment. Pre-req: BUSF-SHU 202 Foundation of Finance Fulfillment: Business and Finance: Non-Finance Elective; Business and Marketing: Non-Marketing Elective; IMB Business Elective.

BUSB-SHU 321  
Equity Valuation

This course covers the valuation of stocks and businesses. Real life valuations of companies are an inherent part of the content. By the end of the course, students should be able to: (1) apply discounted cash flow analysis to find the intrinsic value of an asset; (2) define, describe, analyze, and apply any multiple (PE, Value/EBITDA, Price/Book Value, etc.) to find the relative value of an asset; (3) value any publicly traded firm, small or large, domestic or foreign, healthy or troubled; (4) value any private business for owners or investors (private equity, venture capital, IPO); and (5) separate fact from fiction, sense from nonsense, and real analysis from sales pitch in equity research reports, valuations, and general discourse. Prerequisites: BUSF-SHU 303 Corporate Finance and Junior or Senior students. Fulfillment: This course satisfies BUSF Finance elective; BUSM Non-marketing elective; Business Finance track; IMB Business elective.

BUSB-SHU 334  
Advanced Futures and Options

This course consists of three parts. The first section of the course is a detailed examination of the pricing and hedging of option contracts, with particular emphasis on the application of these concepts to the design of
derivatives instruments and trading strategies. The first part of this section is a review and re-examination of materials covered in the basic course, but with greater rigor and depth of coverage. The emphasis in the second part of this section is on trading applications and risk management. The second section of the course is designed to provide a broad exposure to the subject of interest rate derivative products, both swaps and options. The last section of the course deals with recent innovations in the derivatives markets such as exotic options, credit derivatives and catastrophe derivatives. In the first section of the course, the discussion of trading strategies is in the context of the management of the risk of a derivatives book. The topics covered in the second part of the course include the relationship of swaps to other fixed income contracts such as futures contracts and forward rate agreements, valuation and hedging of swaps, building the yield curve, and valuation and hedging of interest rate options, with particular reference to caps, floors and swaptions, and modeling the term structure of interest rates. The third section of the course deals with non-standard option contracts such as exotic options and options on new underlying instruments such as credit, weather and insurance derivatives. Prerequisites: Foundations of Finance. Fulfillment: This course satisfies BUSF Finance elective; BUSM Non-Marketing elective; IMB Business elective.

BUSB-SHU 350
Managerial Accounting

Introduces students to the evolving role that managerial accounting has played and is expected to play in servicing the informational needs of managers in the planning, organizing, and controlling functions. Highlights the attention-directing, decision-support, and decision-influencing roles of managerial accounting, while helping students learn to structure business decisions systematically and identify the information relevant to a decision. Trains students to think analytically about improving existing systems to further a firm's competitive advantage. Prerequisite: Principles of Fin Accounting (BUSF-SHU 250). Fulfillment: This course satisfies BUSF Non-Finance elective; BUSM Non-Marketing elective; Business Accounting track; IMB Business elective.

BUSB-SHU 351
Operations Management

Operations Management (OM) plans and coordinates all activities in the process of producing and delivering products (goods and services). Effective operations management is a key ingredient of success in most industries. Achieving operations excellence is one of the most essential strategies to improve efficiency and to gain a competitive advantage. The goal of this course is to introduce students to the fundamental concepts, problems, and strategies in the operations function of a firm. This course will cover a mix of qualitative and quantitative methods that provide the necessary tools to make intelligent decisions in operations. Prerequisites: Sophomore Standing. Fulfillment: This course satisfies BUSF/BUSM Business Elective or non-Finance/non-Marketing elective; Business Accounting track; IMB Business Flexible Core or elective.

BUSB-SHU 360
Entrepreneurial Finance

This course seeks to provide an understanding of the financial and transactional skills that are required to fund new businesses and mature firms. The course will integrate both an academic and practitioner view of the challenges facing entrepreneurs and investors involved in business start-up, venture capital, and private equity investment activities. Prereq: None. Fulfillment: This course satisfies BUSF Finance elective; BUSM Non-Marketing elective; IMB Business elective.

BUSB-SHU 361
Applications in Entrepreneurial Finance: Fintech

In this class, we will focus on the key technologies in the fintech landscape. Starting from the mid 1970's, we will cover major innovations such as the introduction of options markets, index funds, and securitizations. We will then discuss new advances in fintech including digital asset management, lending platforms, and blockchain. Particular emphasis will be placed on understanding why some innovations take off, while others languish. Prereq: Foundations of Finance. Fulfillment: This course satisfies BUSF Finance elective; BUSM Non-Marketing elective; IMB Business elective.

BUSB-SHU 370
Corporate Transaction Financial and Valuation Modeling

This course is focused on corporate transactions including M&A (mergers and acquisitions) and its valuations. This is intended to provide students a solid understanding of the different dynamics, structuring, legal, and other considerations of corporate M&A transactions and their valuation from both a theoretical and hands-on modeling framework. The course's materials will well prepare students for careers in M&A, investment banking, and valuation from corporate, financial sponsors, sell-side, and buy-side perspectives. Students will be able to: • Understand and analyze the theory, motivations, structuring, and major processes behind M&A • Model various financial and valuation analyses under complex financial combinations Prerequisite: Foundations of Finance, and Economics of Global Business (or Macroeconomics). Corporate Finance – highly recommended, While not required, other valuation courses such as Investing and Financing In and With China, Equity Valuation, Debt Instruments, etc. and accounting classes such as Financial Statements Analysis, etc. are helpful. This course is an upper-level finance elective. Fulfillment: BUSF Finance elective; BUSM Non-Marketing elective; IMB Business elective.

BUSB-SHU 420
Business Topics Courses: Financial Market Volatility Modeling

The most fascinating aspect of financial market prices is how they change. The uncertainty or risk related to the size of changes in prices is referred to as financial volatility. Volatility can present significant investment risk, when
This course addresses contemporary management challenges stemming from changing organizational structures. It can generate solid returns for shrewd investors. It is also a tradable market instrument in itself. Even when markets are choppy, crash, or surge, there can be opportunity. In this course, students will learn how to measure and forecast financial volatility. They will study historical volatilities, exponential smoothing, ARCH/GARCH models, high frequency stochastic volatility models and implied volatilities from options. These tools will be applied to measuring risk, analyzing alternative approaches to calculating Value at Risk, measuring and forecasting correlations, solving the problem of dynamic portfolio selection, risk control and trading. Prerequisite: Foundations of Finance and a familiarity with simple probability and statistics including least squares regression. Programming experience will be preferred.

**BUSBF-SHU 441**  
**Private Equity & Venture Capital in Asia and Emerging Markets**

This course is focused on the industry of private equity and venture capital (PE/VC) with a focus on Asia and emerging markets. This is intended to provide students a good general understanding of the different dynamics of PE/VC and similarities and differences between the Asia/emerging markets and western markets. The entire PE/VC life cycle will be discussed from different perspectives. Prerequisite: Foundations of Finance, Corporate Finance and Economics of Global Business (or Macroeconomics). Fulfillment: This course satisfies BUSF Finance elective; BUSM Non-Marketing elective; IMB Business elective.

**BUSBF-SHU 442**  
**International Project and Structured Investing and Financing**

This course is designed to prepare students to have a good general understanding of project and structured investing and finance especially with on international projects in the infrastructure, energy and transportation sectors. This will provide an overview of investments, financing, strategies and other elements in project and structured investing and finance both in China, Asia, and globally. The class format will include lectures, case studies, discussions, and guest speakers (time dependent). The course will require the student's active participation. Leading industry guest speakers may be arranged for further learning enhancement, schedules permitting. The course materials will draw heavily on the lecturer's experiences. Prerequisite: Foundations of Finance, Corporate Finance and Economics of Global Business (or Macroeconomics). Fulfillment: This course satisfies BUSF Finance elective; BUSM Non-Marketing elective; IMB Business elective.

**BUSBF-SHU 997**  
**Business Independent Study**

Department consent is required. Fulfillment: This course satisfies BUSF Non-Finance elective; BUSM Non-Marketing elective; IMB Business elective.

**BUSBF-SHU 9289**  
**NYU Big Ideas Series: The Role of China in the Future of World Business**

This course provides students the opportunity to learn and explore the roles of China in the future of world business through lectures and discussions. Through understanding the past, examining the current and projecting the future developments, a wide range of important business topics will be analysed including: • China's role as the factory of the world • Chinese brands' global expansion • Financial market reform • RMB internationalization • Doing business IN China and WITH China • China's growth model - and more The course is taught by experienced practitioners and academics with deep knowledge about China, its impact and connections with the world business. Prerequisite: Open to non-shanghai students only. Fulfillment: General elective.

**MGMT-SHU 18**  
**Strategic Analysis**

This course provides an introduction to the basic frameworks of modern strategy that aim to help firms establish and sustain competitive advantages. The objective of this course is to introduce students to the role of the “general manager,” who is faced by core strategic choices that concern the long-term performance of the firm, and provide them with the necessary skills to formulate and implement effective strategies. This course is equally relevant for students who want to work with companies as consultants, attorneys or investors, helping clients understand and solve critical strategic issues. From this course, you’ll learn to think critically and analytically about competitive business situations. You’ll also learn to embrace uncertainty, ambiguity and complexity of these situations, and to help firms improve the decision making process with sensible and actionable solutions. Firm performance is jointly determined by external economic and internal organizational forces. As a general manager, students need to have the ability to conduct strategic analysis at both the firm and industrial levels. To help them develop these analytical skills, this course is organized around four questions that are central to firms’ strategic decisions: • What is the firm’s external environment? • What is the firm’s competitive advantage? • With whom should the firm compete? • How should the firm compete? To answer these questions, we will cover the following four main topics in this course: • Industry analysis: the environment, opportunities, threats, industry competition • Firm level strategy: competitive advantage • Competitive dynamics • Corporate strategy This course combines interactive lectures and case analyses. While the lectures provide a synthesized theoretical framework as the guidance for logical thinking, the case analyses offer an opportunity to integrate and apply the theoretical framework in a practical way. Prerequisite: second year or above students. Fulfillment: BUSF Non-Finance elective; BUSM Non-Marketing elective; Business Management track; IMB Business elective.

**MGMT-SHU 301**  
**Management and Organizations**

This course addresses contemporary management challenges stemming from changing organizational structures,
complex environmental conditions, new technological developments, and increasingly diverse workforces. It highlights critical management issues involved in planning, organizing, controlling, and leading an organization. Ultimately, it aims to strengthen students' managerial potential by providing general frameworks for analyzing, diagnosing, and responding to both fundamental and complex organizational situations. It also provides opportunities for students to enhance their communication and interpersonal skills, which are essential to effective management. The structure of the course encourages learning at multiple levels: through in-class lectures, exercises, and discussions; in small teams carrying out projects; and in individual reading, study, and analysis. Prerequisite: no freshman. Fulfillment: This course satisfies BUSM/BUSF business core elective, Business Management Track; IMB Business Flexible Core. This course can count for the CAS Business Studies Minor for Study Away Students.

**MKTG-SHU 1**
**Introduction to Marketing**

Evaluates, from the management point of view, marketing as a system for the satisfaction of human wants and a catalyst of business activity. Deals with the subject at all levels, from producer to consumer, and emphasizes the planning required for the efficient use of marketing tools in the development and expansion of markets. Concentrates on the principles, functions, and tools of marketing, including quantitative methods. Utilizes cases to develop a problem-solving ability in dealing with specific areas. Prerequisite: Academic level should be greater than freshmen. Fulfillment: This course satisfies BUSM Marketing Core, BUSF: Business elective, IMB Business Flexible Core or elective; Data Science concentration in Marketing; Count for CAS Business Minor; Count for Stern Business Studies Minor.

**MKTG-SHU 2**
**Consumer Behavior**

This course presents a comprehensive, systematic, and practical conceptual framework for understanding people as consumers—the basic subject matter of all marketing. It draws on the social sciences to evaluate the influence of both individual and ecological factors on market actions. Students discuss relevant psychological and sociological theories and study how they can be used to predict consumers' reactions to strategic marketing decisions. Basic methodologies for research in consumer behavior are developed and applied. Course emphasis is on developing applications of behavioral concepts and methods for marketing actions. Pre-requisite: MKTG-SHU 1 Intro to Marketing. Fulfillment: BUSF Non-Finance elective; BUSM Marketing elective; Business Marketing track; IMB Business elective.

**MKTG-SHU 3**
**Advertising Management**

This course provides students with a comprehensive framework and tools to understand the advertising process and to appreciate managerial and theoretical perspectives in advertising. It tackles the stages in developing an advertising plan—from analyzing the situation and defining clear advertising objectives to execution. Students learn tools related to various skill areas in advertising, including account planning, media planning and buying, and copywriting/art direction, while developing a broader appreciation of how each skill area fits into the overall structure of the advertising process. Coursework involves a comprehensive group project that utilizes learning in all functional areas of advertising, while simulating the development of an advertising campaign. Prerequisite: Intro to Marketing (MKTG-SHU 1), Fulfillment: BUSF Non-Finance elective; BUSM Marketing elective; Business Marketing track; IMB Business elective.

**MKTG-SHU 9**
**Research for Customer Insights**

At the core of successful marketing is a deep understanding of the customer's perspective, one that is informed not only by intuition, but also by data. What are his or her pain points? How will he or she respond to my latest invention? This course provides students with the tools needed to conduct essential marketing research that can inform data-driven decision-making and strategy. These tools include imagery-guided interviews, surveys, focus groups, experiments, and applied statistical analyses (e.g. cross-tabulations, t-tests, regressions). This course also introduces fundamental methods that are critical for segmentation, identifying the right target market, brand positioning, and pricing various products and services. This course explores topics through a combination of business case studies and hands-on experience with an actual, "live" marketing research project. Prerequisite: Intro to Marketing (MKTG-SHU 1) Fulfillment: This course satisfies BUSM Marketing Elective; BUSF Non-Finance Elective; Business Marketing track; IMB Business elective.

**MKTG-SHU 53**
**Pricing**

Prerequisite: MKTG-SHU 1 Introduction to Marketing. Fulfillment: BUSF Non-Finance elective; BUSM Marketing elective; Business Marketing track; IMB Business elective.

**MKTG-SHU 57**
**Digital Marketing**

Digital marketing has experienced tremendous growth and attention over the last few years, thanks to technological innovation and rapid changes in online social networks and digital consumer behavior. This course tackles the latest topics in digital marketing (e.g. digital platforms, online reviews, mobile marketing, influencers), through a combination of business case studies reflecting recent frameworks in the field, in-class exercises on metrics and methods for evaluating the success of digital marketing, and coverage of the latest news and innovation in digital marketing. This course also provides in depth exposure to the psychology of virality and social influence in digital
contexts, which is critical for understanding both social media marketing and broader cultural trends. Prerequisite: Intro to Marketing (MKTG-SHU 1) Fulfillment: This course satisfies BUSM Marketing Elective; BUSF Non-Finance Elective; Business Marketing track; IMB Business elective.

MKTG-SHU 64
Global Marketing Strategy

Examines the specific issues involved in entering international markets and in conducting marketing operations on an international scale. Attention is focused on problems such as identifying and evaluating opportunities worldwide, developing and adapting market strategies in relation to specific national market needs and constraints, and coordinating global marketing and branding strategies. Emphasis is on strategic issues relating to international operations rather than on technical aspects of exporting and importing. Prerequisites: Introduction to Marketing. Fulfillment: BUSF Non-Finance elective; BUSM Marketing elective; IMB Business elective.

MKTG-SHU 110
Practicum on Innovation and Branding

Innovation is the process by which an organization generates creative new ideas and converts them into viable commercial products. Branding, on the other hand, is the process of creating a unique image for the product in the consumers’ mind. This perception reflects on the organization as a whole. Moreover, branding aims to establish a differentiated presence in the marketplace to attract and retain loyal customers. Thus, innovation and branding are inextricably linked for organizational success, or survival, in today's hyper-competitive business landscape. This course aims to equip students with knowledge in both the innovation and branding processes. By participating in the International L’Oreal Brandstorm Competition, students will gain practical experience in formulating an idea, develop branding around said idea, and then pitching said idea (innovation and branding) in a competitive forum. Students will also develop an understanding of the role of design and innovation as a collaborative, multidisciplinary group activity; and improve writing and presentation skills. The course incorporates multiple ways of learning including: lectures, case studies, ethnographic research, industry expert feedback on projects and guest presentations, and design activities in the interactive media lab. In essence, the course integrates a project-based learning approach. Prerequisites: None. Fulfillment: IMB Business elective; BUSM Marketing Elective if Intro to Marketing has been taken, otherwise Non-finance/Non-marketing Elective.

MKTG-SHU 154
Digital Marketing Analytics

Demand for advanced marketing professionals is rapidly increasing due to (1) the explosion of consumer data created by the digitization of commerce and (2) methodological advances in data science and engineering supported by decreased data storage and processing cost. This course introduces students to a comprehensive set of models that marketing analytics professionals – data scientists, managers, and executives – will encounter in applied business contexts. Additionally, this course will cover related topics on successfully integrating marketing analytics into broader organizational functions: data acquisition and analysis environments, stakeholder scoping and communication, and product technical integration. Prerequisite: 1. Statistics for Business and Economics (BUSF-SHU 101), and 2. Introduction to Marketing (MKTG-SHU 1), and 3. ICP (CSCI-SHU 11). Fulfillment: BUSF Non-Finance Elective; BUSM Marketing elective; IMB Business Elective.

MKTG-SHU 228
Strategic Marketing in China: Live Projects and Case Studies

For most marketers, China is probably one of the most dynamic markets to do business in today. It offers unlimited new opportunities and endless challenges. The purpose of this course is to provide students with first-hand experience in dealing with some of the marketing practices and issues particular to China. The course consists of a combination of live projects, case analyses, lectures, guest talks by industry experts and company visits. The course provides students with a framework for researching and developing a strategic marketing plan, as grounded in theory and industry practice. Student teams will apply structured problem-solving approaches in an iterative and competitive process. They will gain a holistic understanding of the challenges of doing marketing in China. Prerequisites: Intro to Marketing and Junior/Senior Level Standing Fulfillment: This course satisfies Business: China Business Studies; BUSM Marketing Elective; BUSF Non-Finance Elective; IMB Business elective.

SOIM-SHU 65
Organizational Communication and Its Social Context

Students learn how organizations communicate with multiple types of audiences, focusing on the interconnections between business and society. The course uses the stakeholder model of the corporation to introduce the strategic implications of communication for modern organizations. Students focus on strategic and tactical aspects of corporate communication to study and practice the ways in which organizations communicate to their varied internal and external stakeholders. Assignments develop students' abilities in speaking and writing to these varied audiences, both to inform and to persuade. The course emphasizes bridging theoretical fundamentals, and action learning is stressed, which includes applying communication strategy to the following: oral and written business assignments; presentation delivery techniques; visual communication analysis and practice; team communication. Prerequisites: None, but priority to business majors; not open to freshmen. Fulfillment: BUSF Non-Finance elective; BUSM Non-Marketing elective; IMB Business elective.
CHEM-SHU 125
Foundations of Chemistry I

This course constitutes an introduction to general aspects of chemistry for science, engineering and math majors. Topics include the theories of atomic structure, stoichiometry, properties of gases, kinetic molecular theory, thermodynamics, quantum mechanics, electronic structure of atoms, periodicity of the elements, chemical bonding, and molecular structure. A particular emphasis is placed on developing physical and chemical intuition through problem solving. Pre-req or co-req: MATH-SHU 121 Calculus or MATH-SHU 201 Honors Calculus Fulfillment: Core Curriculum: Science Experimental Discovery in the Natural World Courses; Major: Biology Foundational Courses; Chemistry Foundational Courses; Mathematics & Honors Mathematics Science Lecture sections; Neural Science Foundational Courses; Physics Foundational Courses.

CHEM-SHU 126
Foundations of Chemistry II

This course is a continuation of Foundations of Chemistry I. Topics covered include the theories of intermolecular interactions, molecular orbital theory, reaction kinetics, chemical equilibria, acid-base reactions, properties of solutions, properties of solids, phase changes, transition-metal chemistry, coordination chemistry, electrochemistry, and nuclear chemistry. Students will reinforce and refine their physical and chemical intuition with a problems-based approach. Pre-req: CHEM-SHU 125 Foundations of Chemistry I AND pre-req or co-req: MATH-SHU 131 Calculus or MATH-SHU 201 Honors Calculus Fulfillment: Biology Foundational Courses; Chemistry Foundational Courses; Mathematics & Honors Mathematics Science Lecture sections; Neural Science Foundational Courses; Physics Foundational Courses.

CHEM-SHU 127
Foundations of Chemistry I Lab

In this laboratory course, students will be familiarized with various techniques, equipment, data analysis skills, best practices in lab safety and ideas common to chemistry laboratories and experimental research. The lab will both introduce and reinforce principles covered in the Foundations of Chemistry Lectures by providing practical applications of chemical theories, including acid-base chemistry, thermodynamics, spectroscopy, chemical kinetics, and buffer solutions, and applying quantitative data analysis in the chemistry lab. In addition, the laboratory will emphasize scientific communication, including scientific writing. As part of the course, students will work on a multi-week project, comparable to a graduate level independent-research project. Previous activities have included studying crystal growth and DNA thermodynamic parameters. With the help of their instructors and peers, students will learn the skills of modern scientific research: proposing a hypothesis, developing a proposal to test the hypothesis, collecting and analyzing data, writing a report, and presenting the findings to the public as a poster or an oral presentation. These skills will help students to develop and build their careers regardless of the major or discipline of study they are seeking. Pre-req or co-req: CHEM-SHU 125 Foundations of Chemistry I Fulfillment: Core Curriculum: Science Experimental Discovery in the Natural World Courses; Major: Biology Foundational Courses; Chemistry Foundational Courses; Mathematics & Honors Mathematics Science Lab sections; Neural Science Foundational Courses.

CHEM-SHU 128
Foundations of Chemistry II Lab

Prereq for CHEM-SHU 128 is Prereq OR Coreq: Calculus/ Honors Calc (MATH-121/201) AND Prereq OR Coreq: Found of Chem II (CHEM-SHU 126). Fulfillment: Biology Foundational course; Chemistry Foundational course; Neural Science Foundational course; Physics Foundational course.

CHEM-SHU 225
Organic Chemistry I

This course uses an interactive, problems-based approach to study the structure and bonding of organic materials, conformational analysis, stereochemistry, and spectroscopy, topics that partly trace their roots to the development of quantum theory. The topics covered include basic reaction mechanisms such as substitution and elimination, and the reactions of aliphatic and aromatic hydrocarbons, alcohols, ethers, amines, carbonyl compounds, and carboxylic acids. The course incorporates modern analytical methods that are the cornerstone of contemporary organic chemistry. Prerequisite: CHEM-SHU 126. Fulfillment : Biology Major Additional Required Courses; Chemistry Major Additional Required Courses.

CHEM-SHU 225L
Organic Chemistry I Lab

This Organic Chemistry I Laboratory course is intended to introduce students to major concepts and techniques in organic chemistry through laboratory experiments. The course will provide training in the techniques of the organic chemistry laboratory, such as carrying out chemical reactions and purification of chemical mixtures. Purification methods such as recrystallization, extraction, distillation, and column chromatography will be utilized. Chemical identification and purity will be determined by methods such as chemical tests, melting point, boiling point, thin-layer chromatography (TLC), gas chromatography (GC) and spectroscopy: infrared (IR), ultraviolet (UV) and visible light. Expanding students knowledge base and critical thinking skills will help students to prepare for a wide array of potential future challenges, including the upper level courses, organic requirements for medical schools, and independent research. This course satisfies: Chemistry Major: Additional Required Courses. This course satisfies: Chemistry Major: Additional Required Courses. Prereq or coreq: Organic Chem I (CHEM-SHU 225) Fulfillment : Biology Major Additional Required Courses; Chemistry Major Additional Required Courses.
CHEM-SHU 226
Organic Chemistry II

This is a continuation of the course Organic Chemistry I, directing to the same objectives: An introduction to the world of Organic Chemistry; learning the main classes of compounds, their structure, nomenclature, reactivity and reactions. Students who complete the course should be able to understand the symbolism used in organic chemistry, the three-dimensional structure of organic molecules, and how that influences organic reactions. Students should be able to reproduce reaction mechanisms and relate those to compounds and reactions they have not encountered. Students should be able to predict the major product of simple reactions on organic compounds containing only one functional group and apply those same principles to more complex compounds containing multiple functional groups. Students should be able to design simple organic syntheses. Students should be able to read and comprehend articles from the current literature. Prerequisite: CHEM-SHU 201(225). This course satisfies: Chemistry Major: Additional Required Courses.

CHEM-SHU 226L
Organic Chemistry II Lab

This Organic Chemistry II Laboratory course is a continuation of the Organic Chemistry I Laboratory course. Students who complete the course are able to correlate, for the different functional groups studied, the molecular structure with common chemical and physical properties (such as solubility, reactivity, boiling and melting points). Students are able to characterize and elucidate structures using chemical and spectroscopic techniques. Students are able to characterize organic compounds based on physical and chemical properties (such as polarimetry, FT-IR spectroscopy, 1H FT-NMR and other spectroscopic data) and purify organic compounds by physical methods such as chromatography, recrystallization, solvent extraction, sublimation, distillation, etc. Co-requisite of Org Chem II lecture. This course satisfies: Chemistry Major: Additional Required Courses.

CHEM-SHU 312
Analytical Chemistry

Analytical Chemistry uses qualitative and quantitative analytical tools for ascertaining the chemical composition of a substance. In this course, students will be introduced to instrumental methods, including titrations, spectroscopy (UV-Vis, FTIR, NMR, Mass Spectroscopy, Atomic Absorption Spectroscopy) and chromatography. Quantitative measurement methods will be introduced along with the statistical concepts and tools of estimation, confidence, accuracy and precision. Students will learn the theoretical and practical aspects of Analytical Chemistry through lectures and laboratory demonstrations. Prerequisites: Foundations of Chemistry II and FoS of Chemistry Laboratory. Fulfillment: Chemistry Major Electives.

CHEM-SHU 651
Physical Chemistry: Quantum Mechanics and Spectroscopy

An introduction to quantum mechanics—general principles and applications to important model systems. Covers electronic structure of one- and many-electron atoms, theory of chemical bonding in diatomic and polyatomic molecules. Includes principles and applications of molecular spectroscopy: rotational, vibrational, electronic, and nuclear magnetic resonance. Elements of photochemistry are also included. Prerequisites: PHYS-SHU 12 General Physics II OR PHYS-SHU 93 Foundations of Physics II Honors, and CHEM-SHU 126 Foundations of Chemistry II. Fulfillment: Chemistry additional required course.

CHEM-SHU 652
Physical Chemistry: Thermodynamics and Kinetics

Develops the close connection between the microscopic world of quantum mechanics and the macroscopic world of thermodynamics. Topics include properties of gases, kinetics, elementary statistical thermodynamics, and thermodynamics of single and multicomponent systems. Prereqs: CHEM-SHU 126 Foundations of Chemistry II and PHYS-SHU 93 Foundations of Physics II Honors/CCSC-SHU 51 Physics II. Multivariable Calculus is strongly recommended. Linear Algebra and Differential Equations is also recommended. Fulfillment: Chemistry Major Required.

CHEM-SHU 881
Biochemistry I

This course offers deeper and more complete treatments of the chemistry of living cells and biological chemistry than in the Foundations of Science courses. Topics include structure and function of proteins, lipids, carbohydrates, and nucleic acids; enzyme structure, mechanism and regulation of enzyme activity, and membrane structure and transport; mechanisms of cellular processes and cellular physiology, including ion channels and pumps, cell motility, and the immune response. Prereq: CHEM-SHU 226 (Organic Chemistry II). Fulfillment: Biology Major Electives; Chemistry Major Electives; Neural Science Major Approved upper-level Biology courses.

CHEM-SHU 882
Biochemistry II

Building on the lessons of Biochemistry 1, Biochemistry 2 emphasizes analysis of basic metabolic pathways, including glycolysis, electron transport, and oxidative phosphorylation, as well as mechanisms of metabolic regulation and integration. Prereq: CHEM-SHU 881 Biochemistry I. This course satisfies CHEM elective; BIOL elective; NS Approved upper-level Biology course.
CHEM-SHU 997
Independent Study – Chemistry

Prerequisite: Foundations of Science I–III (or Physics I&II, Foundations of Chemistry I&II, Foundations of Biology I&II), and a minimum GPA of 3.0 overall and in all science and mathematics courses required for the major, permission of a chemistry faculty member (at NYU-Shanghai, NYU-Abu Dhabi, or NYU-New York) who will act as a sponsor and mentor, and approval of the Director of Undergraduate Studies (DUS) in Chemistry. The faculty mentor must be selected in consultation with the DUS. Offered in the Fall, Spring or Summer. 2 to 4 points per term for a maximum of 4 points. This course aims at engaging students in research. It is designed to offer students an opportunity to observe chemistry research up close and gain hands-on research experience by working as a member in an active research team. Independent Study I and II can be done with the same supervisor or two different supervisors. No lectures will be given. Student researchers are expected to attend and actively participate in lab/supervision meetings. A Proposal for Independent Study form must be filled out, signed by the DUS, and submitted to the Registrar. Requires a written report on the research to be evaluated by the faculty sponsor, with a copy submitted to the DUS and a copy to the Dean of Arts & Sciences. This course satisfies CHEM elective if approved.

CHEM-SHU 998
Integrated Science Capstone

This course will provide students with a completion of their undergraduate science education by making use of the skills and knowledge they acquired over the course of completing their major to apply to scientific problems across disciplines. Students will be paired with a faculty mentor to engage either in Independent Research or Literature Review to address a scientific question of the student’s design, culminating in a written report. Students are encouraged to work with faculty mentors outside of their own field. Open only to Biology, Chemistry, and Physics majors in the senior year. Prerequisite: senior students with chemistry major. Fulfillment: Chemistry required.
CSCI-SHU 11
Introduction to Computer Programming

An introduction to the fundamentals of computer programming. Students design, write, and debug computer programs. No prior knowledge of programming is assumed. Students will learn programming using Python, a general purpose, cross-platform programming language with a clear, readable syntax. Most class periods will be part lecture, part lab as you explore ideas and put them into practice. This course is suitable for students not intending in majoring in computer science as well as for students intending to major in computer science but having no programming experience. Students with previous programming experience should instead take Introduction to Computer Science. Prerequisite: Either placed into Calculus or at least a C in Pre-Calculus Fulfillment: Core Curriculum Requirement Algorithmic Thinking; EE Required Major Courses. Note: Students who have taken ICS in NY, Abu Dhabi, and Shanghai cannot take ICP.

CSCI-SHU 101
Introduction to Computer Science and Data Science

This course has three goals. First, the mastering of a modern object-oriented programming language, enough to allow students to tackle real-world problems of important significance. Second, gaining an appreciation of computational thinking, a process that provides the foundations for solving real-world problems. Finally, providing an overview of the very diverse and exciting field of computer science - a field which, arguably more than any other, impacts how we work, live, and play today. Prerequisite: Introduction to Computer Programming or placement exam. Equivalency: This course counts for CSCI-UA 101. Fulfillment: Core Curriculum Requirement Algorithmic Thinking; Computer Science Major Required Courses; Computer Systems Engineering Major Required Courses; Data Science Major Foundational Courses; Electrical and Systems Engineering Major Required Major Courses.

CSCI-SHU 188
Introduction to Computer Music

Computers are used to process signals, compose music, and perform with humans. Personal computers have replaced studios full of sound recording and processing equipment, completing a revolution that began with recording and electronics. In this course, students will learn the fundamentals of digital audio, basic sound synthesis algorithms, techniques for human-computer music interaction, and machine learning algorithms for media generation. In a final project, students will demonstrate their mastery of tools and techniques through a publicly performed music composition. Prerequisites: ICP OR ICS (best to have some experience in Music, or check with the instructor before enrolling). Fulfillment: Computer Science Major Electives.

CSCI-SHU 210
Data Structures

Data structures are fundamental programming constructs which organize information in computer memory to solve challenging real-world problems. Data structures such as stacks, queues, linked lists, and binary trees, therefore constitute building blocks that can be reused, extended, and combined in order to make powerful programs. This course teaches how to implement them in a high-level language, how to analyze their effect on algorithm efficiency, and how to modify them to write computer programs that solve complex problems in a most efficient way. Programming assignments. Prerequisite: Data Structures and (Discrete Math or Honors Math major) and Calculus. Fulfillment: CS Required, Data Science Data Analysis/Concentration in Computer Science/AI.

CSCI-SHU 213
Databases

The course covers modeling an application and logical database design, the relational model and relational data definition and data manipulation languages, design of relational databases and normalization theory, physical database design, query processing and optimization, transaction processing focusing on concurrency and recovery. The labs emphasize experiential learning of database systems and applications and an insight into various database management systems and query languages. Prerequisite: CSCI-SHU 210 Data Structures. Fulfillment: Computer Science Major Electives; Data Science Major Required Data Management Courses.

CSCI-SHU 215
Operating Systems

Covers the principles and design of operating systems. Topics include process scheduling and synchronization, deadlocks, memory management (including virtual memory), input-output, and file systems. Programming assignments. Prerequisite: CSCI-SHU 210 Data Structures AND (CENG-SHU 202 Computer Architecture or CSCI-UA 201 Computer Systems Organization). Fulfillment: Computer Science Major Required Courses; Computer Systems Engineering Major Elective; Data Science Major Courses for Concentration in Computer Science.

CSCI-SHU 220
Algorithms

Introduction to the study of algorithms. Presents two main themes: designing appropriate data structures and analyzing the efficiency of the algorithms that use them. Algorithms studied include sorting, searching, graph algorithms, and maintaining dynamic data structures. Homework assignments, not necessarily involving programming. Prerequisites: Data Structures and (Discrete Math or Honors Math major) and Calculus. Fulfillment: CS Required, Data Science Data Analysis/Concentration in Computer Science/AI.
CSCI-SHU 222
Introduction to Game Programming

A programming intensive introduction to the creation of computer games. Using mostly two-dimensional sprite-based programming, we examine and experiment with animation, physics, artificial intelligence and audio. In addition, the course explores the mathematics of transformations (both 2D and 3D) and the ways they may be represented. Prerequisite: Data Structures OR CS-UY 2134 (Data Structures and Algorithms) OR ICS with Instructor Permission. This course satisfies: Major: CS Electives.

CSCI-SHU 235
Information Visualization

Information visualization is the graphical representation of data to aid understanding, and is the key to analyzing massive amounts of data for fields such as science, engineering, medicine, and the humanities. This is an introductory undergraduate course on Information Visualization based on a modern and cohesive view of the area. Topics include techniques such as visual design principles, layout algorithms, and interactions as well as their applications of representing various types of data such as networks and documents. Overviews and examples from state-of-the-art research will be provided. The course is designed as a first course in information visualization for students both intending to specialize in visualization as well as students who are interested in understanding and applying visualization principles and existing techniques. This course satisfies: Major: CS Electives, Data Science Data Analysis Required; Data Science Courses for Concentration in Artificial Intelligence. Prerequisite or Co-requisite: Data Structures. Students must be CS or DS major and have junior or senior standing.

CSCI-SHU 240
Introduction to Optimization and Mathematical Programming

This is an introductory course to introduce the model building and mathematical programming for the infrastructure systems optimization. This course prepares students with the systems-level approach to the analysis, design, operation and management of civil infrastructure systems. Topics include model building, linear programming, nonlinear programming, integer programming, network optimization models and the use of algebraic modeling languages for describing and solving large-scale optimization models. Pre-requisites: ICP; AND Calculus (MATH SHU 121) or Honor Calc (MATH-SHU 201); AND Prob and Stats (MATH-SHU 235) or Stats for Bus and Econ (BUSF-SHU 101) or Theory of Probability (MATH-SHU 233).

CSCI-SHU 254
Distributed Systems

This course offers a solid grounding in the basic issues and techniques of parallel and distributed computing. The material covers the spectrum from theoretical models of parallel and distributed systems to actual programming assignments. Pre-requisite: Data Structures and Operating Systems.

CSCI-SHU 308
Computer Networking

This course takes a top-down approach to computer networking. After an overview of computer networks and the Internet, the course covers the application layer, transport layer, network layer and link layers. Topics at the application layer include client-server architectures, P2P architectures, DNS and HTTP and Web applications. Topics at the transport layer include multiplexing, connectionless transport and UDP, principles or reliable data transfer, connection-oriented transport and TCP and TCP congestion control. Topics at the network layer include forwarding, router architecture, the IP protocol and routing protocols including OSPF and BGP. Topics at the link layer include multiple-access protocols, ALOHA, CSMA/CD, Ethernet, CSMA/CA, wireless 802.11 networks and link layer switches. The course includes simple quantitative delay and throughput modeling, socket programming and network application development and Ethereal labs. Prerequisite: CSCI-101 or placement test. Fulfillment: CS Electives, CE Electives, EE Additional Electives.

CSCI-SHU 311
Functional Programming

Functional Programming is a very powerful and expressive style of programming which has become extremely popular in the recent years, both in academia and in the software industry. There are good reasons for this success: functional programs are modular by design, and interact through expressive and cleanly specified interfaces, using static typing and pattern matching. As a result, functional programs are generally simpler to reason about, to maintain and to execute in parallel than imperative or object-oriented programs. The purpose of the course will be to provide an advanced introduction to Haskell, a purely functional language used today in the software industry for real-world applications. The language comes with a rigorous semantics and everything one could expect of a functional programming language: static type inference, lazy evaluation, type classes, explicit handling of effects using monads, and concurrency primitives and abstractions. We will take the opportunity of this course on Haskell to cover elements of formal language theory, with the implementation in Haskell of a parser, pretty-printer and interpreter for a small imperative language. Prereq: CSCI-SHU 2314 Discrete Math and CSCI-SHU 210 Data Structures Fulfillment: CS elective.

CSCI-SHU 350
Embedded Computer Systems

An embedded system is a computer system with a dedicated function within a larger mechanical or electrical system, often with real-time computing constraints. It is embedded as part of a complete device often including...
hardware and mechanical parts. Embedded systems control many devices in common use today. Topics covered include microcontroller architecture, assembler programming, interrupts, peripheral interfacing, embedded system design, higher-level languages on embedded Systems, as well as a brief introduction to real-time operating systems. Practical Lab Exercises complement the lectures. The students will further specialize and consolidate their knowledge through semester-long hands-on projects. Prerequisite: (CSCI-SHU 11 or CSCI-SHU 101) AND (CENG-SHU 202 or CENG-SHU 201). Fulfillment: CS elective; CE Required, EE Additional Electives.

CSCI-SHU 360
Machine Learning
In this class, students will learn about the theoretical foundations of machine learning and how to apply these to solve real-world data-driven problems. We will apply machine learning to numerical, textual, and image data. Topics will be drawn from perceptron algorithm, regression, gradient descent and stochastic gradient descent, support vector machines, kernels for support vector machines, recommendation systems, decision trees and random forests, maximum likelihood, estimation, logistic regression, neural networks and the back propagation algorithm, convolutional neural networks, recurrent neural networks, Bayesian analysis and naive Bayes, clustering, latent Dirichlet allocation (LDA), sentiment analysis, dimensionality reduction and principle component analysis, reinforcement learning. Prerequisites: Introduction to Computer Programming, Calculus, and (Probability and Statistics OR Theory of Probability OR Statistics for Business & Economics). Fulfillment: Business Analytics Track; Computer Science Electives; Data Science Major Data Analysis Courses.

CSCI-SHU 361
Computer Security
This class provides a firm grounding in computer security concepts and basics. Students learn about threat modeling, principles of secure design, security policies, access control technologies, and similar topics. Prerequisite: CSCI-SHU 215 Operating Systems Fulfillment: CS, CE, EE elective.

CSCI-SHU 375
Reinforcement Learning
Prerequisites: Machine Learning AND (Probability and Statistics OR Theory of Probability). Fulfillment: Computer Science Major Electives; Data Science Major Courses for Concentration in Artificial Intelligence.

CSCI-SHU 376
Natural Language Processing
Natural language processing (NLP), a form of artificial intelligence (AI) that gives computers the ability to read, understand and interpret human languages, is one of the most important technologies that have made significant progress recently. NLP has been applied to many areas such as spoken dialogue system, machine translation, question and answering, machine reading, document summarization, and even music generation. Traditional NLP approaches involve rules that are handcrafted by linguists. On the other hand, modern NLP approaches are data-driven, trying to learn a model to minimize a target loss function over labeled or unlabeled training text. The course will cover various NLP techniques such as text classification, sequence classification, parse trees, and sequence-to-sequence generation from statistical or deep learning perspectives. Students will be expected to derive mathematical formulas, and code and tune NLP algorithms on datasets in homework assignments. Prerequisite: (1) Machine learning; (2) Probability and Statistics or Theory of Probability. Fulfillment: CS elective.

CSCI-SHU 378
Introduction to Cryptography
The study of modern cryptography investigates mathematical techniques for securing information, systems and distributed computations against adversarial attacks. We introduce fundamental concepts of this study. Emphasis will be placed on rigorous proofs of security based on precise definitions and assumptions. Topics include: one-way functions, encryption, signatures, pseudorandom number generators and zero-knowledge proofs. Prerequisite: (1) Machine learning; (2) Probability and Statistics or Theory of Probability. Fulfillment: CS elective.

CSCI-SHU 410
Software Engineering
An intense hands-on study of practical techniques and methods of software engineering. Topics include: advanced object-oriented design, design patterns, refactoring, code optimization, universal modeling language, threading, user interface design, enterprise application development and development tools. All topics are integrated and applied during the semester-long group project. The aim of the project is to prepare students for dynamics in a real workplace. Members of the group will meet on a regular basis to discuss the project and to assign individual tasks. Students will be judged primarily on the final project presentations. Prerequisites: Intro to Computer Science. Fulfillment: CS Electives.

CSCI-SHU 420
Computer Science Senior Project
The purpose of the Senior Project is for the students to apply the theoretical knowledge they acquired during the Computer Science program to a concrete project in a realistic setting. During the semester, students engage in the entire process of solving a real-world computer science project. It requires students to pursue a long-term, mentored learning experience that culminates in a piece of original work. At the end of the semester, the proposed work comes to fruition in the form of a working software prototype, a written technical report, and an oral
CSCI-SHU 997
**Computer Science Independent Study**

Prerequisite: permission of the department. Does not satisfy the major elective requirement. 2-4 credits. Students majoring in computer science are permitted to work on an individual basis under the supervision of a full-time faculty member in the department if they have maintained an overall GPA of 3.0 and a GPA of 3.5 in computer science and have a study proposal that is approved by a computer science professor. Students are expected to spend about two to three hours a week per credit (a 4-credit IS would involve about ten to twelve hours a week) on their project. Fulfillment: Computer Science Major Electives.

CSCI-SHU 2314
**Discrete Mathematics**

This course is an introduction to discrete mathematics, emphasizing proof and abstraction, as well as applications to the computational sciences. Topics include sets, relations, and functions, graphs and trees, algorithms, proof techniques, and order of magnitude analysis, Boolean algebra and combinatorial circuits, formal logic and languages, automata, and combinatorics, probability, and statistics. Co-requisite OR Pre-requisite: MATH-SHU 131 or MATH-SHU 201. Equivalent to MATH-UA 120. Fulfillment: MATH Additional Mathematics Electives, CS Required, Data Science Concentration in CS.
CENG-SHU 201
Digital Logic
This module provides a rigorous introduction to topics in digital logic design. Introductory topics include: classification of digital systems, number systems and binary arithmetic, error detection and correction, and switching algebra. Combinational design analysis and synthesis topics include: logic function optimization, arithmetic units such as adders and subtractors, and control units such as decoders and multiplexers. In-depth discussions on memory elements such as various types of latches and flip-flops, finite state machine analysis and design, random access memories, FPGAs, and high-level hardware description language programming such as VHDL or Verilog. Timing hazards, both static and dynamic, programmable logic devices, PLA, PAL and FPGA will also be covered. Prerequisite: Intro to Programming or Intro to Computer Science or placement test or interaction lab. Fulfillment: Core Curriculum: Science Experimental Discovery in the Natural World Courses; Major: CS Electives, CE Required, EE Required.

CENG-SHU 202
Computer Architecture
The main ambition of this course is to teach you how a modern computer works, starting from its most elementary components (transistors, resistors, capacitors) and then climbing up the ladder of abstraction to reach a high-level programming language like C and its compilation in machine code. In this excursion, we will learn (among other things) how to turn electrons into digital logic, how to make machine instructions execute faster through pipelining and prediction, and how to organize memory in hierarchies in order to make it more efficient. Since the only way to learn computer architecture is by practicing it, we will design a register transfer level (RTL) implementation of a MIPS-like processor in Verilog, and implement a simulator of the very same architecture in C. Preliminary syllabus of the course. General introduction to the course Dataflow and parallelism From silicon to transistors The digital abstraction Number systems Programming in C: basic types and control flow Programming in C: arrays, strings and functions Programming in C: pointers, structures and unions Programming in C: linked lists and beyond Programming in C: the Unix System interface Boolean logic Karnaugh maps Latches and flip-flops Finite state machines Binary and Synchronous Decision Diagrams Programming and simulating in Verilog (part I) Programming and simulating in Verilog (part II) Digital building blocks Compilation from C to MIPS Single-cycle microarchitectures Multi-cycle microarchitectures Pipelining and dependence hazards Out-of-order execution Memory hierarchies and cache Virtual memory Memory models and multiprocessor programming. Equivalency: This course counts for CSCI-UA 201 Computer Systems Organization. Prerequisite: Intro to Programming or Intro to Computer Science. Fulfillment: Major: CS Required, Data Science Concentration in CS, CE Required.

CENG-SHU 352
Emerging Technologies for Smart Cities
Nowadays, many smart cities are being developed around the world. This is an undergraduate-level course to introduce a series of emerging technologies for smart cities. This course offers students fresh materials and case studies to expand their horizon on smart cities; helps them understand the functions and identify the limitations of various emerging technologies used in the smart city; and explore a set of analysis techniques on analyzing the smart city systems. Topics involve electric vehicles, connected and autonomous vehicles, ride-sourcing services, car-sharing services, bike-sharing services, on-demand services, advanced parking management, smart traffic signals, and smart grids. Prerequisite: None. Fulfillment: Core Curriculum Science Science, Technology and Society Courses; Social Science Focus Urban Studies 200 level.
In NYU Shanghai’s second-year writing course, students engage with and apply the methods of humanistic inquiry, interpretation, and argumentation that are central to a liberal arts education. Through topic-based seminars, Perspectives on Humanities reinforces critical writing and reading skills by emphasizing close, interpretive readings of narrative and non-narrative genres that generally serve as objects of humanistic inquiry. Further, this course emphasizes the analytical application of theoretical criticism to the interpretations of primary texts. Students build on the rhetorical awareness, writing habits, critical thinking skills, and conventional knowledge learned in the first-year Writing as Inquiry workshop. This course further reinforces students’ abilities to develop viable research questions, discover and incorporate secondary sources, and present reasonable claims. In addition to satisfying one Cultural Foundations requirement, this course satisfies one of the two writing requirements (see Writing). Topics of sections may vary.
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**CCEX-SHU 1 Principles of Life-From Cells to Organisms**

Fulfillment: Core Curriculum Science Experimental Discovery in the Natural World Courses.

**CCEX-SHU 3 Explore the Cell: from Gene to Protein**

Fulfillment: Core Curriculum Science Experimental Discovery in the Natural World Courses.

**CCEX-SHU 120 Biology for a Changing World**

This course introduces the principles and technologies of modern biology. It covers the cellular and molecular structure of organisms, how life works on the basis of energy and metabolism, and how life reproduces through cell division and inheritance. The course will provide an overview of the biological process from gene expression, epigenetic modification, cell cycle and differentiation, mutation and cancer, and the signaling pathways and mechanisms among the cells in a changing world. Prerequisite: None. Antirequisite: Students who have taken CHEM-SHU 125 Foundations of Chemistry I are not eligible. Fulfillment: CORE ED.

**CCEX-SHU 122 Perception and the brain**

“How do humans and other animals obtain knowledge about the world? It is easy to take perception for granted, but complex processes (only partly understood) underlie our ability to understand the world by seeing, hearing, feeling, tasting, and smelling it. This is not because the scientific study of perception is new. In fact, perception has fascinated philosophers, physicists, and physiologists for centuries. Currently, perception is a central topic in psychology, cognitive science, computer science, and neuroscience. How do scientists approach perception? We seek to discover lawful relations between perceptual experiences and the physical world and to develop models of the processes and mechanisms in the brain that produce these connections. In this course, in the lectures, we will discuss fundamental problems in perception (primarily vision), and in the lab sessions, you will learn about standard experimental methods and their use in the study of perceptual processes and to give you first-hand experience in conducting original research. As part of these activities you will learn to write experimental reports and to think critically about the relation between theory and experiment. You will also be exposed to the use of computers in perception research. Indeed, there will be considerable use of computers in the course, with part of the goal being to provide you with basic computer skills.” Prerequisites: None.

**CCEX-SHU 170 While You Were Sleeping**

In this course, we will explore the mysterious and largely uncharted world of sleep and dreams. We will question many of our most basic assumptions and biases about the role of sleep in our lives and discover the importance of sleep in optimizing our physical and mental health. This course will be broken into five major themes: (1) Defining sleep; (2) dreams; (3) the evolution of sleep; (4) sleep regulation; and (5) sleep disorders and treatment. The lab portion of this experimental discovery course will guide students through various aspects of the experimental process including informed consent, data collection and interpretation, and applying evidenced-based strategies to improve sleep. Prerequisite: None. Fulfillment: Core Curriculum Science Experimental Discovery in the Natural World Courses.

**CCEX-SHU 203 Energy and the Environment**

This course explores the scientific foundations of current environmental issues and their implications for public policy. The syllabus is divided into sections that each examines a current environmental theme in depth. The first sections investigate the composition of the atmosphere and the chemical processes that cause air pollution, ozone depletion, and global warming. Moving to the study of water, the course explores the properties of this unique solvent and the effect of various aqueous pollutants. The course also includes an investigation of energy from chemical reactions, our continuing reliance on fossil fuels, and the potential of alternative energy sources. The laboratory experiments are closely integrated with the lecture topics and provide hands-on explorations of central course themes. Throughout the course we also will examine how scientific studies of the environment are intimately connected with political, economic and policy concerns. Fulfillment: Core Curriculum Science Experimental Discovery in the Natural World Courses.

**CCEX-SHU 214 How Things Work**

All of the devices that define contemporary living are applications of basic scientific discoveries. The principles underlying these devices are fascinating as well as useful, and explain as well many of the natural features and phenomena of the world around us. This course familiarizes you with some basic principles of physics through their applications to selected devices such as CD and DVD players, radio and cell phones, the basic electronic components of computers, lasers and LEDs, and even nuclear weapons. In learning the basic physics behind these modern inventions, you will develop a deeper understanding of how the physical world works and gain a new appreciation of everyday phenomena that are ordinarily taken for granted. The course is designed for non-science students with an interest in the natural world. The basic physical ideas needed to understand how things operate are presented using some mathematics, but none beyond elementary high school-level algebra. Prerequisite: None. Fulfillment: CORE ED.
The courses in this category emphasize the impact of science on society as well as cultural and historical reactions to scientific discovery. They focus on pressing world issues and current technology addressed by the natural sciences and mathematics.

CCST-SHU 132
Creativity Considered

We hear every day about the importance of creativity in our lives, careers, and societies --- its importance for personal development, for the generation of new ideas, forms, and expressions, for the work of organizations, large or small in scale, science and technology or arts and culture-focused, in the private or public sector. And yet, it is important to ask: Can creativity be usefully studied or is it, in fact, something best left to life, luck, or other factors that may determine one's abilities and opportunities in this area? The premise of this course is that, while not taking away from what can be called the magical aspect of creativity, we can benefit from considering creativity in some detail. Another premise of the course is that there is merit in considering creativity across very different areas of human enterprise --- science, art, business, government, and more. Implicit in this premise is the assumption that while creativity is manifested in many different ways, there are some common characteristics of creative work which we can identify and put into practice. A detailed consideration of creativity across various areas of human enterprise is the subject matter of this course. Prerequisites: None. Fulfillment: Business & Finance Major Non-Finance Elective, Business & Marketing Major Non-Marketing Elective, IMA Major Elective, IMB Major IMA/Business Elective.
In this course, we will explore a set of timeless questions about how society is, or should be, organized, based on close examinations of diverse thinkers and writers from different times and different cultures. The questions raised in this course will engage the moral, social, and political foundations of human relationships, the principles according to which people assemble into societies of different scales, and the bases for interaction among societies in a world of accelerating interdependence. By engaging texts that explore these questions from multiple perspectives, students reflect on several overarching issues, including how different societies have organized their economic and political institutions, how those societies fashion both shared identities and hierarchies of difference, how people experience themselves as “individuals” or as members of a collectivity, how they experience both time and space, and how they engage with others both locally and globally. Over the semester, students develop skills that are central to a liberal arts education, including reading carefully and thoughtfully, considering questions from more than one perspective, participating in respectful and serious intellectual explorations of difficult topics, developing oral presentation skills, and writing essays that make effective and appropriate use of the ideas of others as they present the students’ own ideas to different audiences of readers. Each week, students will meet twice as an entire class for lectures and once in smaller recitation sections led by one of New York University Shanghai’s Global Postdoctoral Fellows. Students receive 4 credits for the lecture and recitation. Prerequisite: None. Fulfillment: Core Curriculum Global Perspectives on Society.

CCSF-SHU 123

Contemporary Chinese Political Thought

This course introduces students to perspectives on contemporary Chinese political and social thought as presented in academic publications, media reports, social commentary and postings on the Chinese Internet. It covers selected key topics in the disciplines of political, social, and cultural studies. It examines and compares Chinese and Western views on major developments and current issues. The course also introduces students to a variety of styles of writing and research methods as well as skills of cultural translation relevant to the study of contemporary China and Chinese thought. Fulfillment: Core Curriculum Social Science Perspective on China/Humanistic Perspectives on China or Interdisciplinary Perspectives on China; GCS Elective The Politics, Economy, and Environment of China; Humanities Major Advanced Courses (old Topic Course); Social Science Major Focus Courses Political Science - 200 level.

JOUR-SHU 202T

Journalism: Newsroom

This two credit course gives students practical experience in the real world activity of publishing news and information for audiences, specifically through NYU Shanghai’s online student publication On Century Avenue. Students will be guided in the journalistic practice of preparing stories for publication for main and sub-sections of the website that cover on-going events and issues related to NYU Shanghai campus. The course will give students an opportunity to put into practice the theory and technical skills they have acquired during their Journalism course and/or in other Creative Writing courses. It will expose them to the realities and pressures of timely and time-sensitive news gathering as well as the publishing arts of content management and understanding audiences. They will have an opportunity to be journalists and contributors to the website. The Newsroom course will act as an ancillary production hub for the publication. In practice, students will write their own work and collaborate collegially to share ideas and the structure of their proposed stories to further shape them for publication. They will be expected to learn how to consult on story ideas and take direction and to act in a professional manner. They will experience a working newsroom environment that is overseen by the lecturer who will provide continual feedback on story development, editing, and publishing advice. The course outcomes are intended to give students a working knowledge of how an online newsroom functions and expose them to various journalism and content collection roles, challenges and setbacks. The personal rewards will come from influencing and contributing to published content and learning the importance and potential influence of media. The course structure will involve lectures and collaborative and on-going editorial workshops. There will be one class per week and the lecturer will be available at all other times to discuss individual story development. Assignments will consist of sourcing, writing, editing and publishing news stories and/or features for On Century Avenue. This course can be repeated for credits twice. The total completion allowed is 2 times and the total units allowed is 4 credits. Prereq for JOUR-SHU 202T is Journalism: Methods and Practice (001 or 002); or Writing as Inquiry; or their equivalents in New York or Abu Dhabi; or by instructor permission. Fulfillment: General Elective.

JOUR-SHU 203

Journalism and Society in China

This four credit course examines the role and functions of journalists and the media in Chinese society as modern reporting moves into the digital media landscape. To provide context to the political and cultural environment of news-gathering, the course assesses the development of journalism in China through the 20th century from the birth of the Republic of China (1911) and through to the modern era. It will examine the relatively free publishing environment for newspapers in the lead-up to establishment of the People’s Republic of China (1949) and the imposition of government control thereafter. Through providing an understanding of the parallel publishing environment of institutional traditional media ownership and today’s free-enterprise online media corporations, the unit studies how reporters operate in both. Students will gain an understanding of the strong nexus between government and media and the ever-present need for journalists to portray various aspects of Chinese ideology at the same time as functioning as news reporters. The portrayal of media as propagandist will be considered against the abiding devotion of journalists to lift the veil on truth. The roles, functions and rounds of journalism as practiced in China will be studied through classroom discussion and assigned readings. Students will include reporting across all publishing platforms of politics, business, the environment and national issues. The impact of digital journalism will be an underlying theme through the course. The course structure will involve lectures,
workshops, seminars, guest speakers and an industry visit. There will be two 3-hour classes per week. Assignments will include a blend of in-class group and individual presentations and two written papers. Fulfillment: 1. Global China Studies elective in Chinese Media, Arts, and Literature 2. The Global Network Minor in Journalism Studies.

JOUR-SHU 9202  
Methods and Practice: Journalism

It provides an introduction to the work of the reporter, with particular focus on covering China, and offers students a chance to learn and practice basic journalism skills, including news writing, descriptive & feature writing, and writing for TV etc. Feedback on assignments is given in individual meetings. Visiting speakers and field trips also offer insights into the role of the journalist and the challenges faced. Prerequisites: None. Fulfillment: General Elective.

SCA-SHU 9634  
Global Connections: Shanghai

Any writing on Shanghai today seems to run out of superlatives to describe the city’s dazzling transformation, spectacular architecture, and booming economy. But is it really the Global City it strives to be? In this course we will explore this question by looking into the urban development of the city from its status as a relatively unimportant trading town to the world metropolis of today. Besides regular seminar classes, the course involves field trips and guest lectures, and each student has to do their own semester-long research project. Prerequisite: Sophomore Standing. Fulfillment: CORE SSPC/HPC or IPC; GCS China and the World; Humanities Interdisciplinary/Advanced Course (18-19 Topic Course); Social Science Focus Self-Designed/Urban Studies - 200 level.
DATS-SHU 235
Information Visualization

Information visualization is the graphical representation of data to aid understanding, and is the key to analyzing massive amounts of data for fields such as science, engineering, medicine, and the humanities. This is an introductory undergraduate course on Information Visualization based on a modern and cohesive view of the area. Topics include techniques such as visual design principles, layout algorithms, and interactions as well as their applications of representing various types of data such as networks and documents. Overviews and examples from state-of-the-art research will be provided. The course is designed as a first course in information visualization for students both intending to specialize in visualization as well as students who are interested in understanding and applying visualization principles and existing techniques. Fulfillment: CS Electives, Data Science Data Analysis Required; Data Science Courses for Concentration in Artificial Intelligence. Prerequisite or Co-requisite: Data Structures. Students must be CS or DS major and have junior or senior standing.

DATS-SHU 236
Mathematical Foundations of Data Science and Machine Learning

This is an advanced topic course for undergraduate students interested in the modern mathematics of data science and machine learning. Tentative topics include dimension reduction and data visualization, the geometry of high dimensional data, and optimization-based data analysis. Topics may change every year to reflect the current research trends. The course requires an excellent understanding of advanced calculus, linear algebra, and probability theory. Programming skills and knowledge in optimization are strongly recommended but not required. Prerequisite: DATS-SHU 234 Mathematical of Statistics (used to be MATH-SHU 234). Fulfillment: Math Constrained Math elective or additional Math elective; Honors Math elective; Data Science Concentration in AI.

DATS-SHU 240
Introduction to Optimization and Mathematical Programming

This is an introductory course to introduce the model building and mathematical programming for the infrastructure systems optimization. This course prepares students with the systems-level approach to the analysis, design, operation and management of civil infrastructure systems. Topics include model building, linear programming, nonlinear programming, integer programming, network optimization models and the use of algebraic modeling languages for describing and solving large-scale optimization models. Pre-requisites: ICP; AND Calculus (MATH-SHU 121) or Honor Calculus (MATH-SHU 201). Fulfillment: CS Electives, Data Science Data Analysis Required; Data Science Courses for Concentration in Artificial Intelligence.

DATS-SHU 420
Data Science Senior Project

The purpose of the Senior Project is for the students to apply the theoretical knowledge they acquired during the Data Science program to a concrete project in a realistic setting. During the semester, students engage in the entire process of solving a real-world data science project. It requires students to pursue a long-term, mentored learning experience that culminates in a piece of original work. At the end of the semester, the proposed work comes to fruition in the form of a working software prototype, a written technical report, and an oral presentation at a capstone project symposium. Prerequisite: senior standing. Fulfillment: DS Required.

DATS-SHU 997
Independent Study: Data Science

Prerequisite: department consent. Fulfillment: General Elective.
ECON-SHU 1
Principles to Macroeconomics

Focuses on the economy as a whole (the “macroeconomy”). Begins with the meaning and measurement of important macroeconomic data (on unemployment, inflation, and production), then turns to the behavior of the overall economy. Topics include long-run economic growth and the standard of living; the causes and consequences of economic booms and recessions; the banking system and the Federal Reserve; the role of government policy; and international trade. Prerequisite: None. Fulfillment: Economics Major Required Economics Courses; Social Science Major Foundational Courses; Data Science Major Courses for Concentration in Economics.

ECON-SHU 3
Microeconomics

Economics studies how agents make decisions under conditions of scarcity and uncertainty. This course provides a rigorous introduction to economics, with special emphasis on microeconomics. It will introduce you to economics as a discipline and as a way of thinking. It will also provide you with a set of tools, which will be very useful in other economics courses. We will first study the behavior of individual consumers and firms. Then we will give you some insight into how markets work and whether market outcomes are desirable. We will also look at situations in which the firm is a monopolist, or competes with a limited number of rivals. Some key concepts we will introduce include economic incentives, marginal analysis, opportunity cost (what costs matter), market efficiency (what does it mean for a market to work) and strategic behavior (how to predict and respond to your rivals’ decisions). The tools that you will be acquainted with in this class are fundamental for most upper division courses of the Economics major as well as classes in Finance, Accounting and Marketing. Prerequisites: Calculus or above. Fulfillment: Economics Major Requirements; IMB Major Business Elective; Social Science Major Foundational Courses; BUSF/BUSM Business Core Courses; Data Science Major Concentration in Finance/Marketing/Economics.

ECON-SHU 10
Intermediate Microeconomics

Rigorous examination of consumer choice, profit-maximizing behavior on the part of firms, and equilibrium in product markets. Topics include choice under uncertainty, strategic interactions between firms in noncompetitive environments, intertemporal decision making, and investment in public goods. Prerequisites: (ECON-SHU 2 Principles of Microeconomics or ECON-SHU 3 Microeconomics) and (MATH-SHU 131 Calculus or ECON-SHU 5 Math for Econ 1: Optimization). Fulfillment: Economics Major Requirement; Social Science Major Focus Courses Political Economy - 200 level.

ECON-SHU 202
Intermediate Microeconomics

The course will cover a broad range of topics in macroeconomic theory, empirics and policy. Among the issues to be discussed are the business cycle theory, economic crises, economic growth, IS-LM model, open economy, inflation and unemployment, dynamic model of aggregate demand and supply, stabilization policy, government debt and budget deficits, money supply, central banking. The banking system: competition and stability, banking growth nexus, prudential regulation and the role of the financial sector in the macroeconomics model. Prerequisites: ECON-SHU 1 Principles of Macroeconomics or ECON-SHU 251 Economics of Global Business. Fulfillment: Economics required; Social Science Focus Political Economy 200 level course.

ECON-SHU 210
Market Design

The course is about design of markets, not only in the sense of auctions and matching markets, but also in the broader sense of designing allocation rules in general. We aim to understand why some markets needs to be designed, and what important design elements are. This is particularly relevant for the digital economy where market design is often programmed into smart contracts, and market participants may be computational agents. The course includes a series of assignments that builds towards writing a short research paper for the course. The topic of the research paper should be related to the material presented in the course, but must go into more depth with selected issues. Prerequisite: ECON-SHU 3 Microeconomics or ECON-SHU 216 Introduction to Game Theory Fulfillment: Economics Advanced elective.

ECON-SHU 216
Introduction to Game Theory

This course introduces students to the basic concepts and tools of game theory and their applications to real-life situations. It starts with basic terms such as strategies, payoffs, and equilibrium, and then goes through different types of games, such as extensive form games, normal form games, dynamic games and games with incomplete information. The second half of the course covers a selection of topics closely related to the real world, such as cold war, voting, bargaining and auction. Students will be able to analyze the situation, frame it in terms of the tools discussed, and understand the strategies used in the interaction. Prerequisites: Calc (MATH-SHU 131 OR 201). Fulfillment: Economics Major Electives; IMB Major Business Elective Courses; Mathematics Major Additional Mathematics Electives; Honors Mathematics Major Mathematics Electives; Social Science Major Methods Courses; Business and Finance Major Non-Finance Electives.

ECON-SHU 218
International Trade and the Chinese Economy

This course is designed to combine basic trade theory with its practical relevance in China to help students better
understand the international economic activities in developing countries. We will investigate the causes and consequences of trade, discuss the role of multinational corporations and foreign direct investment in driving economic growth and wage inequality, and study countries' motives for regulating international trade and the effects of trade policy on economic welfare. We will also focus on China's gains and losses from opening up to trade and investment, on the dual impacts of the rise in exports from China on the U.S. employment and consumers, and on the distributional effects of trade cuts in developing countries, and so on. Prerequisite for ECON-SHU 218 is Microeconomics and Principles of Macroeconomics. Fulfillment: Core Curriculum Social Science Perspective on China; Social Science Major Focus Courses Political Economy - 200 level; Economics electives.

ECON-SHU 221
China's Financial System

This course introduces the institutions and instruments of the Chinese financial system as well as relevant macroeconomic policy tools as they play a role in the broader Chinese economy. The goal of the course is to provide students with a comprehensive understanding based on monetary and financial economics from a comparative and historical standpoint. The teaching proceeds in three stages: (1) introductory redux in monetary and financial economics (2) historical and comparative overview of the evolution of China's financial system and macroeconomic policy in the context of international financial arrangements (3) in-depth analysis of current topics in the field. Some of the topics covered include the Chinese banking system, RMB exchange rates, Chinese stock markets and bond markets, mutual fund and hedge fund industry, security dealers and money markets, Chinese derivative markets, green finance arrangements, real estate markets and state owned companies. The similarities and differences between Chinese financial markets and more developed financial markets will be highlighted. Prerequisite or Co-requisite: Principles of Macroeconomics (ECON-SHU 1 or equivalent) or Economics of Global Business (ECON-SHU 251 or equivalent); Antirequisite: Students who have taken BUSF-SHU 286 Chinese Financial Market are not eligible. Fulfillment: CORE IPC; Economics Elective.

ECON-SHU 225
Advanced Economic Theory

Advanced Economic Theory is focused on the effect of uncertainty on individual decisions, on the design of optimal contracts, and on competitive markets. Compared to Game Theory, we consider situations where agents have no strategic power, or where the strategic power is entirely in the hands of one party (for contract design). The course is divided into three blocks. In the first block, we review the standard model of expected utility that is used in economics, we investigate its foundations in absence of objective probabilities, and we study two fundamental applications at the core of macroeconomics and finance. In the second block, we study applied problems of information asymmetry in bilateral interactions, and the optimal contractual solutions for the uninformed party. In the third block, we analyze the effect of uncertainty on general equilibrium in multi-period competitive markets. Basic knowledge of multivariate calculus constitutes a necessary mathematical background to follow the course. Prerequisites: Intermediate Micro AND (Math for Econ 1 OR Multivariate Calculus). Fulfillment: Economics Major Advanced Economics Electives; Social Science Major Focus Courses Political Economy - 300 level.

ECON-SHU 232
Blockchain, Cryptocurrency, and Money

In this course, we will learn all about Blockchain and money. (1) We will first investigate questions about how to make money and how money used to be made; who can and who can’t make money in the modern economy; what money is and how money moves; how to measure money and how to control money. (2) Second, you will learn why, until the arrival of Blockchain, it has been so difficult to make new digital money; what Blockchains really are; how Blockchains work and when Blockchains don’t work; how to raise money and how to make new digital money with Blockchains. You will thereby gain a solid and detailed technical understanding of Blockchain and the Blockchain-enabled financial technology. (3) Third, you will also learn about the most important current and future non-blockchain financial technologies in China, including the People’s Bank of China’s digital yuan (e-CNY) project. Topics to be covered include: definition of money, functions of money, the evolution of money and digital money, money creation, payment systems, Alipay, WeChat Pay, financial technology (FinTech), distributed ledgers, Blockchain technology, digital signatures, basic cryptography, cryptocurrencies, cryptocurrency market, Bitcoin, Bitcoin security and quantum computing, consensus, Proof-of-Work (PoW), Proof-of-Stake (PoS), the economic limits of consensus protocols, initial coin offerings (ICO), online peer-to-peer lending (P2P), China’s digital currency and electronic payment system (DCE/P), digital yuan, e-CNY, and central bank digital currencies (CBDC). Prerequisite: ICP or ICS, or Creative Coding Lab Fulfillment: CORE STS; Economics Elective.

ECON-SHU 238
History of Modern Economic Growth: Exploring China From a Comparative Perspective

This course has two goals: 1) to provide an understanding of economic development and growth with applications to the Chinese economy and Chinese institutions, and (2) to learn how to analyse major policies in China’s economic development in both oral and written form. China has experienced rapid institutional changes and achieved high growth rates. We start with (i) the pre-modern and early-modern historical background of this transition process and then move on to analyse (ii) the roots and pattern of economic growth in modern China. Topics include: The great divergence between poor and rich countries; introduction to global economic history; why the industrial revolution did not take place in China’s Yangtze River Delta first; economic catch up by the rest of the West; state-led big push industrialization; the ancient Chinese economy’s high-level equilibrium trap; the Needham Question; the Chinese economy prior to 1949; modern China’s early reform era 1949-78; the developmental state; market transition post-1978; modern Chinese growth and structural change. Prerequisite: None. Fulfillment: CORE SSFC or IPC; Economics elective; GCS elective The Politics, Economy, and Environment of China; Social Science Focus Political Economy 200 level course.
China's Economic Transition

Over the past forty years, China has transitioned from a poor, inefficient, and closed economy to an upper-middle income country and the world's largest trading nation. This course introduces the key institutional and economic reforms of China since 1978 and their contributions to China's economic development. We will examine the reforms in the pivotal sectors, including agriculture, industry, banking, and international trade, all of which are important steps to improve the overall efficiency and productivity of the Chinese economy. We will also discuss the current challenges facing China to maintain sustainable growth, such as problems regarding demographic structure, state-owned enterprises, government debts, etc. Prerequisite: This course assumes no prior background in economics. However, if you are already familiar with basic algebra and basic calculus, supply and demand curves, basic economics concepts, it will help you to understand this course better. Prerequisite: None. Fulfillment: CORE IPC; Economics Elective; Social Science Focus Political Economy 200 level.

Economics of Global Business

The objective of this course is to provide future decision-makers with a systematic understanding of critical aspects of economic development and the global business environment. We will examine the basic workings of the national economies (macroeconomics) and then explain the role of international trade and international finance. We show how the forces of globalization affect international business, down to the impact on the future careers of NYU students. The challenges presented by tepid economic growth in Europe, a soft landing in China, and the changing dynamics in the US, and the long run prospects for global economic growth and development are discussed. Prerequisite: ECON-SHU 150 or ECON-SHU 3 Fulfillment: Economics required; IMB Business Foundation course; Social Science Foundational course; BUSF/BUSM Business Core course.

Econometrics

This course introduces the core set of methods used by econometricians to analyze economic data to understand relationships among variables in the world around us. Students will learn regression analysis that provides a framework for quantifying how a change in one variable affects another variable, holding other things constant, and for measuring the uncertainty associated with those answers. The topics covered include: regression with a single regressor, multiple regression, statistical inference (hypothesis tests and confidence intervals), nonlinear regression (polynomial and logarithmic models, interactions between independent variables), regression with a binary dependent variable (logit and probit), instrumental variables regression, regression with panel data (fixed effects regression), basics of time series regression. Students will also learn how to use Stata, a statistical computer package, regression with panel data (fixed effects regression), basics of time series regression. Students will also learn how to use Stata, a statistical computer package, to perform regression analysis. Prerequisite: Statistics (BUSF-SHU 101 OR MATH-SHU 235 OR MATH-SHU 233 OR ECON-UA 18 OR STAT-UB 103 OR STAT-UB 1 OR MATH-GA 2901 OR SOCS-UC 101 OR ECON-UA 201). Fulfillment: Economics Major Requirement; Social Science Major Requirement; Data Science Major Required Courses.

Competitive Analysis

This course aims to provide a FORMAL approach for analyzing and understanding firms' competitive decision making that is directed to maximize their profits and outcomes. Selective questions we address include: how firms design and implement various pricing strategies, including versioning, bundling, and related market segmentation strategies? How to predict the impact of tax rate/exchange-rate devaluation/cost-reducing innovation/quality improvement/merger on price and market shares? In what ways firms strategically collude with each other and how do price wars help discipline collusive agreements? How do mergers and acquisitions (M&A) shape market structure and affect the profitability of different firms in an industry? How do incumbents discourage rivals from entering the market? How can a potential entrant get past the incumbent's defenses? In-depth CASE analyses are adopted to showcase how the formal analyses enable an insightful understanding of complex real-life business decision makings and the relevant policy makings. Example questions may include: How to assess a CEO's claim that a product's high price (e.g. Covid-19 vaccine, cancer drugs, Alzheimer medication, etc.) is intended for financing R&D for long-term benefits to society? How shall an incumbent like Ctrip reposition its future strategy for sustainable leading market position and also reexamine the relationship between competition and cooperation in this new digital era? Why did the Chinese government ban the economically profitable and efficiency-enhancing acquisition of Huiyuan by Coca-Cola? How can the business data analyses enable a leading company like National Dairy in India a clear understanding of its true market position and inform strategy making for reinforcing and/ or preemptively defending the company's position? Why did market regulators fine Alibaba and Tencent for only allowing their own payment processors (Alipay, and WeChat Pay respectively)? Why can you not share a Taobao link inside WeChat? Is Alibaba's restriction of its competitor (Tencent) leading to economic inefficiencies that the Chinese market regulator should address urgently? Did Chuxing did an M&A with Uber. Is this good for Uber's profits? Is this good for Chinese society? Should China allow Visa and Mastercard more entry to the Chinese market? Should China help UnionPay to compete with the Alipay and WeChat Pay? China has 3 main telecommunications companies, Unicom, China Mobile, China. Is this number too small or too big? Should Unicom merge with China mobile — from the firms' perspective? How about from the Chinese regulators' perspective? Should Netflix, Google, Amazon, Microsoft, Tencent, Baidu, Alibaba, Uber, Didli, Walmart, AWS, Dropbox, Apple, Samsung, etc. be allowed to have such a dominating market share? Should the US allow Huawei to freely enter the US mobile phone market from the perspective of its domestic firms or of the consumers? Prerequisite: Microeconomics Fulfillment: Economics Advanced elective; BUSF Non-Finance elective; BUSM Non-Marketing elective; IMB Business elective.

ECON-SHU 239

ECON-SHU 251

ECON-SHU 301

ECON-SHU 315
ECON-SHU 335
Development Economics

This course focuses on the understanding of the process of economic development. The course will be structured around the following four questions: (1) Why are some countries much poorer than others? (2) What are the main barriers to the process of economic development? (3) What are the main barriers that prevent the poor to escape from poverty? and (4) Why do these barriers exist and persist? The first half of the semester is focusing on the macro perspective in understanding the economic development. We start from laying down the framework in order to understand the mechanics behind the economic growth. The second half of the semester is focusing on the micro perspective in understanding the development at the individual level. We will cover various topics, including land and labour market, education, health, finance, firms, technology, taxation, corruption and public service delivery. This course combines theory and empirics but maintains a strong applied focus. Under each theme, we will derive testable implications from the theory, subject these predictions to econometric testing, comment on the robustness of the results obtained, and seek to draw policy conclusions. Most classes focus on one or two applied papers and an exercise that asks you to explore these questions on your own. Prerequisite: None. Fulfillment: Economics elective.

ECON-SHU 342
Behavioral Economics

This course explores the effects of psychological factors on economic behavior. We will analyze the observations from the real world that cannot be well explained by classical economic models, and enrich the standard model by incorporating psychological phenomena, such as bounded rationality, loss aversion, time inconsistency and social preferences. We will present both theoretical models and empirical evidence from experiments or real world data. Applications include marketing, asset pricing, game theory, consumption and savings, and public policy. Prerequisites: Microeconomics courses: ECON-SHU 3 and Statistics courses: BUSF-SHU 101 or MATH-SHU 20 or MATH-SHU 235 or MATH-SHU 170 or BIOL-SHU 42 or other equivalent courses in statistics. Fulfillment: Economics Major Elective.

ECON-SHU 356
Antitrust and Competition Policy in the Digital Era

Law and Economics presents an economic analysis of monopoly power and efforts to limit monopoly. This course helps students understand the theoretical rationale for competition policy in the classical price-centric economy and the recent new economy. The course also provides students with an understanding of competition policy and antitrust regulation by examining recent, prominent public and private antitrust cases. Prerequisite: ECON-SHU 3 Microeconomics. Fulfillment: Economics elective.

ECON-SHU 360
Experimental Economics

Predicated on the belief that economics, like other sciences, can be a laboratory science where economic theories are tested, rejected, and revised. Reviews the methodology of such laboratory experiments and investigates the use of experiments in a wide variety of fields. These include competitive markets, auctions, public goods theory, labor economics, game theory, and individual choice theory. Prerequisite: ECON-SHU 10 OR ECON-SHU 3. Fulfillment: Economics Major Elective.

ECON-SHU 400
Economics Capstone Seminar

Open to Senior Economics Majors Only. Fulfillment: Economics Capstone, Advanced elective or elective.

ECON-SHU 402
Advanced Econometrics

This course introduces students to many topics and methods that are actively studied and increasingly used in applied micro/macroeconomics. Students will be required to read articles in economics journals and see how in practice the tools of econometrics can be applied to tackle challenges that observational data pose in estimating causal effects. The articles will illustrate applications of the tools that were covered in Econometrics (ECON-SHU 301) as well as advanced tools that will be covered in this course. The advanced topics covered may include: quantile regression, multinomial models, Tobit model, selection models, count-data models, survival analysis for duration data, randomized controlled trials, differences in differences, synthetic control, regression discontinuity design, event study, generalized method of moments, local projections. By the end of the course, students will conduct their own empirical projects on topics of their interest using the analytical tools they learned. Prerequisite: ECON-SHU 301. Fulfillment: Economics Major Advanced Economics Electives.

ECON-SHU 416
Game Theory: Advanced Applications

Game theory investigates incentives and behavior in interactive decision making. Compared to Introductory Game Theory, in this course we aim to develop a more advanced understanding of strategic reasoning and of its consequences in relevant economic settings, especially when agents’ information about the incentives of the opponents is incomplete. Compared to Advanced Economic Theory, we analyze the behavior of economic agents when the choice of each agent has a non-negligible impact on the outcome for the other agents, so that the relevant uncertainty cannot be summarized with a market outcome or with an exogenous random variable. The course is divided into four blocks. In the first block, we analyze static games with complete information. These are
games where every player moves without observing the moves of the other players, players’ moves are sufficient to determine the final outcome, and players’ preferences for outcomes are common knowledge. The second block is devoted to static games with incomplete information. In these games, outcomes and payoffs also depend on exogenous variables, and players are asymmetrically informed about the realization of these variables. In the third block, we analyze dynamic games with complete information. In these games, players may move after observing past moves of other players --- like in almost all games we play for fun! Finally, the fourth block is devoted to dynamic games with incomplete information. Basic knowledge of multivariate calculus constitutes a necessary mathematical background to follow the course. Prerequisite: ECON-SHU 3 Microeconomics, or ECON-SHU 10 Intermediate Microeconomics, or ECON-SHU 216 Introduction to Game Theory Fulfillment: Economics advanced elective; Social Science Methods or Political Economy 400 level course.

ECON-SHU 453
Economics Honors Seminar
Prerequisite: department consent is required. Fulfillment: ECON Capstone Electives; BUSF Non-Finance elective; BUSM Non-Marketing elective; or Business China Business Studies (depending on topic); IMB Business elective.

ECON-SHU 997
Economics Independent Study
Prerequisite: None. department consent is required. Fulfillment: Economics Major Elective.

ECON-SHU 9301
Econometrics
The course examines a number of important areas of econometrics. The topics covered include regression analysis with cross-sectional data; classical linear regression model and extensions; model specification, estimation and inference; regression with qualitative variables; heteroskedasticity and GLS; serial correlation and heteroskedasticity in time series regression. In addition to covering the relevant theoretical issues, the course includes the application of these methods to economic data. Pre-requisites: Statistics (BUSF-SHU 101 OR MATH-SHU 235 OR MATH-SHU 233 OR ECON-UA 18 OR STAT-UB 103 OR STAT-UB 1 OR MATH-GA 2901 OR SOCSC-UH 1010Q OR ECON-UA 20). Fulfillment: Economics Required; Data Science Major Data Analysis Courses.

BPEP-SHU 238
International Economics
The course examines both macro and micro aspects of globalization. This course begins with the theory and practice of international trade: comparative advantage, trade policy and trade agreements as well as economies of scale, intra-industry trade, global value chains and offshoring. The course also studies the effects of China’s integration into the world economy and the impact of US-Sino trade war and Brexit. The second part of the course covers the role of money and finance in the global economy, including international tax arbitrage and tax havens, the role of the exchange rate, interest parity, the determinants of exchange rates; exchange rate regimes, and international financial crises. Prerequisite: Introductory Macroeconomics (ECON-SHU 1 or ECON-SHU 251) and Introductory Microeconomics (ECON-SHU 3). Fulfillment: Economics Elective.
EENG-SHU 251  
Circuits

This course covers Passive DC circuit elements, Kirchoff’s laws, electric power calculations, analysis of DC circuits, Nodal and Loop analysis techniques, voltage and current division, Thevenin’s and Norton’s theorems, and source-free and forced responses of RL, RC and RLC circuits. Prerequisite: MATH-SHU 131 or MATH-SHU 201. Fulfillment: CE required; EE required; Core Curriculum Science Experimental Discovery in the Natural World.

EENG-SHU 400  
Senior Capstone Design Project I

The goal of The Capstone Design Project is to provide students with a major design experience that leverages the knowledge and skills acquired through their undergraduate studies and co-curricular experiences. Its structure includes a process of design with measurable metrics, and incorporation of appropriate engineering standards and multiple realistic constraints. Emphasis is placed on clearly framing the design problem and following the design process to result in an optimized design solution. Students are encouraged to build prototypes of their designs and seek validation of their solutions through simulations and experiments, as appropriate. The Capstone Project aims to be collaborative and trans-disciplinary across several engineering streams. The emphasis is on students applying the design process to solve real-world problems in a 21st century, global context. The projects address engineering and technology topics that overlap with the sciences, social sciences, liberal arts or business. The Capstone provides an opportunity to integrate technical, human, aesthetic, business and ethical concerns with engineering design. Students practice critical skills in communication, team-building, and project management. There is a mid-semester review of the projects. Students complete their design, as well as build and test their prototypes, if applicable, in spring semester. The senior year culminates in a comprehensive project report and design review by a committee of faculty and other professionals. Senior Capstone Design Project I (ENGR-AD-400) and Senior Capstone Design Project II (ENGR-AD-401) both consist of two, seven-week modules. Module I, in the fall semester, has a lecture and a project component focusing on the design process, problem definition, project management and Ethics. Module II in the fall is focused on creating the design solution, which is implemented in Module III and tested and validated in Module IV. Prerequisite: Senior Standing. Fulfillment: EE Required.

EENG-SHU 997  
Electrical and System Engineering Independent Study

Prerequisite: Permission of the department. Fulfillment: EE Elective.
EAP-SHU 100
English for Academic Purposes (EAP) I
The 100-level English for Academic Purposes (EAP) course is the first in a sequence of two courses which meet the core language requirement for freshmen Chinese students. The course is designed to help you develop the high-level language, communication, and critical thinking skills you need to be successful in an English-speaking university, and cultivate an interest in issues that cross disciplines, an important part of a well-rounded, liberal arts education. While the primary emphasis in the 100-level course is on presentation and listening skills, you will also practice reading and writing. You will engage with content individually and in groups, complete a variety of communicative and reflective writing assignments, and conduct an experiential learning project outside the walls of the university. In order to appeal to student interests, a variety of topics are offered across different sections of EAP 100.

EAP-SHU 100 for Foundations of Science
English for Academic Purposes (EAP) I for Students in the Foundations of Science Track
The 100-level English for Academic Purposes (EAP) course for Foundations of Science (FoS) is the first in a sequence of two courses which meet the core language requirement for first year Chinese students in the FoS track. It is delivered across the fall and spring semesters of the first year. The course is designed to help you develop the high-level language, communication, and critical thinking skills you need to be successful in an English-speaking university, and cultivate an interest in issues that cross disciplines, an important part of a well-rounded, liberal arts education. While the primary emphasis in the 100-level course is on presentation and listening skills, you will also practice reading and writing. You will engage with content individually and in groups, complete a variety of communicative and reflective writing assignments, and conduct an experiential learning project outside the walls of the university. Topics in EAP for FoS are interdisciplinary, bringing together issues in science with topics in social science and the humanities.

EAP-SHU 101
English for Academic Purposes (EAP) II
The 101-level English for Academic Purposes (EAP) course is the second in a sequence of two courses which meet the core language requirement for freshmen Chinese students. The course is designed to help you further develop the high-level language, communication, and critical thinking skills you need to be successful in an English-speaking university, and cultivate a deeper interest in issues that cross disciplines, an important part of a well-rounded, liberal arts education. The focus of EAP 101 is developing skills of facilitating and participating in seminar discussions. You will also complete a multimedia project which combines scholarly research and an interview with someone beyond the university. As in the 100-level course, a variety of topics are offered across different sections of EAP 101.

CRWR-SHU 159
Introduction to Creative Writing
This workshop course offers a broad introduction to the art of capturing the world around you in your own original fiction and poetry. Through close readings of classic and contemporary examples, intensive in-class workshops, and vigorous revision, students will learn to make their stories and poems live on the page through attention to plot, character, dialogue, language, heartbreaking images and the mystery of the perfect line break. Prerequisites: None. Equivalency: This course counts for CRWRI-UA 815 Creative Writing: Introduction to Fiction and Poetry. Introduction to Creative Writing is a requirement for all intermediate/advanced workshop classes.

CRWR-SHU 161
Introduction to Creative Writing: Literary Translation
Creative writing and literary translation are deeply connected. Many of our greatest literary texts come to us through translation, and writing your own fiction, and poetry often means writing with a sharp awareness of cultural and linguistic richness and diversity (in other words, writing with an awareness of how translation shapes us and our writing). In this course, you will explore creative writing and translation together, working to translate exemplary samples of poetry and creative prose as a way of learning and practicing craft in several fundamental genres and forms. You will then take what you learn about craft and form to write and workshop your own original creative writing and co-translations of fellow students’ creative work. We will work primarily in English and Chinese, though texts written in other languages will provide models and examples for discussion and practice. This course may be used to fulfill the prerequisite requirement for intermediate Creative Writing workshops. Prerequisite: None. Fulfillment: General Elective.

CRWR-SHU 170T
Topics in Creative Writing: Creative Translation
This introductory course welcomes all students with an interest in language as a medium of creative expression. Unlike other creative writing classes, here the emphasis is on writing in and across multiple languages rather than on writing in one language. This does not mean students must be competent in more than one language or have previous creative writing experience, only that students have both a strong interest in creative writing and a deep curiosity about how much of the great writing that helps shape our experience of the world comes to us through translation in one form or another. Students will work individually and in small teams to translate exemplary short works of prose and poetry into English (primarily but not necessarily exclusively from Chinese; depending on student interests and backgrounds we may also translate into Chinese or other languages). Students will also write their own short creative poetry and prose, and work together to translate one another’s work into at least one other language. We will often work with cribs — basic rough translations that require further careful work as a reader, researcher and a creative writer to render as texts that succeed in a new language. Students will study basic translation theory and concepts, then work to put those concepts into practice as translators and as critical
Too long to be a short story and too short to be a novel, the novella has been described by Stephen King as a country with "ill-defined" borders situated between "two more orderly regions." The novella's intermediary length can make it less palatable to magazine editors and book publishers alike, but in spite of its perceived lack of commercial viability many of our most enduring stories are novellas—Heart of Darkness, The Turn of the Screw, The Metamorphosis, Animal Farm, and A Christmas Carol, to name just a few. In this course, geared toward intermediate and advanced fiction writers, we explore the exciting possibilities of the form through our readings and work on novellas of our own. By the end of the course, students will have read a wide range of novellas by international authors such as Saul Bellow, Robert Bolaño, Eileen Chang, Anton Chekhov, Elena Ferrante, Neil Gaimin, Yasunari Kawabata, and Alice Munro. They will also have completed a significant portion of their own novellas, gaining a deeper understanding of what Ian McEwan calls "the modern and post-modern form par excellence." Prerequisite: Introduction to Creative Writing, or junior or senior standing. Fulfillment: This course will fulfill one of the two Intermediate Workshop components for the creative writing minor. In addition, it can be used as a Humanities Topics course.

CRWR-SHU 207
Introduction to Screenwriting

Introduction to Screenwriting examines the principles of story structure through the close analysis of classic and contemporary screenplays. Using Robert McKee's Story and Paul Gulino's The Sequence Approach as primary texts, students will learn the basic mechanics of character, genre, theme, act design, scenecraft, and dialogue. Lectures will blend dramatic theory with practical examples from each week's screenplay. Students are expected to complete a logline, a synopsis, a scene by scene outline, and the first act of a feature-length script. Writing workshops and peer review are integral to the development of the course. Prerequisite: Introduction to Creative Writing or Junior/Senior standing.

CRWR-SHU 209
The Art of the Personal Narrative

In this intermediate creative writing workshop, students will explore how writers articulate a unique "I," drawing directly from personal experience. Students will write their own narratives across several genres and in several modes, working at times from immediate observation, at others from memory, sometimes drawing upon research, and often using techniques of fiction and poetry to inspire creative writing that can push the personal essay and memoir in the direction of inspired fiction, poetry, and cross-genre experimentation. In addition to developing their own writing projects, students will read and analyze a range of exemplary texts in which writers use the "I" as point of departure for writing about the world—moving beyond narrow exploration of the "self" into dynamic engagement with others and with the environment, with history, the city, travel—and anything and everything else a great writer can make us care about. Students must have completed Introduction to Creative Writing or be of junior or senior standing to enroll in this course. Fulfillment: General Elective.

CRWR-SHU 217
The Art of Linked Collections

Welcome to The Art of Linked Collections. This course explores the art of writing short fiction with a focus on linked stories. In discussing what compelled him to write two linked short story collections, Junot Diaz muses, "Maybe I could have written conventional novels from both sets of material but I'm not convinced I could have gotten the same jagged punch, the same longing and silences that rise up from the gaps in and between the linked stories. I guess I'm just hopelessly fascinated by the realities that you can assemble out of connected fragments." In this course, geared toward intermediate and advanced fiction writers, we explore the jagged power of the linked story collection and what can be gained from the points of connection as well as the narrative gaps between stories. Students will read linked collections by such writers as Junot Diaz, Denis Johnson, Haruki Murakami, Alice Munro, Elizabeth Strout, and Jenny Zhang and will complete several linked stories of their own, gaining appreciation for a form Sonya Chung aptly characterizes as "compression and vast heterogeneity in one!" Students must have completed Introduction to Creative Writing or be of junior or senior standing to enroll in this course. Exceptions by permission of the instructor. Prerequisite: Introduction to Creative Writing (CRWR-SHU 159 or CRWR-SHU 161) OR Junior standing. Fulfillment: General Elective.

CRWR-SHU 220
Intermediate Creative Writing Craft Course

In this intermediate craft course, we will investigate how the teller shapes and powers the story. Along with critical texts, we will read fiction told in a variety of perspectives, including stories that aren't easily categorized. How does a narrator reveal herself? How is narrative perspective developed, maintained, and broken? When is intimacy created with the reader, or distance from him, and why? Students will write their own stories in an experimental array of perspectives—from the third-person omniscient we associate with Dickens, to the unreliable first-person beloved by fans of J.D. Salinger, to the less traditional second person found in Lorrie Moore's work. Alongside discussions of narration, we will continue to practice additional craft elements: plot, characterization, imagery, among others. Students will be required to complete a substantial fiction project, but may also experiment with other or hybrid genres as part of their work for the course. This is a course for students who love to read, who are committed to the practice of writing creatively, and who aim to become better creators and analyzers of stories. This is also workshop,
and we will share our creative work and respond to the work of others in a writing workshop setting. This course is open to juniors and seniors and to those who have completed the introductory creative writing course.

CRWR-SHU 221
Intermediate Poetry Workshop

In this intermediate creative writing workshop, students will explore the possibilities of poetry by writing and sharing their own work while also engaging with exemplary works by great poets from a range of traditions, background and times, with a practical emphasis on contemporary poetry and its many vibrant modes and methods. At times, students will experiment with age-old forms such as the sonnet, haiku and sestina; at other times, students will pursue the possibilities of contemporary performance poetry and spoken word. Modernist collage and pastiche, postmodern hybrid poetries, and emergent digital poetics. The goal for each student will be to create a body of work that draws on knowledge of traditional forms while also speaking directly to the unique circumstances of our times — and each individual poet’s experience. Prerequisites: Students must have either 1) completed an Introduction to Creative Writing Course (CRWR-SHU 159 or CRWR-SHU 161) or 2) be of junior or senior standing.

CRWR-SHU 245
Speculative Fictions

Science fiction, fantasy, horror, weird fiction, alternative histories—all fall under the heading of speculative fiction. This class has three basic components: 1) reading and discussing a focused set of works of speculative fiction (and watching a few films), framed by a set of critical texts; 2) research; and 3) frequent writing exercises and assignments, culminating in a semester project. Students will read and discuss to understand better how speculative fiction works, both in terms of basic narrative techniques common to all fiction as well as with regard to challenges, such as worldbuilding, that may be considered unique to speculative fiction. Students will conduct research necessary to both better understand those texts and their authors’ techniques and thinking, and to do work necessary to support their own creative experiments in writing their own speculative fiction and/or critical work (research is a big part of the successful speculative fiction writer’s practice). All students will begin their writing process by generating a range of story ideas by way of writing experiments and assignments before committing to a semester project. Once students have settled their semester projects, they will conduct research alongside the drafting of scenes for their final project, with the research helping them understand and begin to build a speculative world. Students will write a focused research paper as well as a creative work — most likely a short story, perhaps an episode of a larger envisioned project — informed and shaped by the research they conduct. Students are welcome to work to incorporate the work they do in this class into IMA or creative writing projects that exceed the scope of this class (so, for instance, IMA students might work to integrate their work for this class into their interactive projects).

CRWR-SHU 260
Writers on Writing

The premise of this course is that gifted writers highly conscious of their craft teach us more pointedly about creative writing when, juxtaposed to the creative work of each, we hear, see and experience what each identifies as fundamental to his or her writing practice — whether technique, discipline, recurrent battle, avenue of inspiration, self-imposed rule or other. This course looks to such writers as guides from whom we may learn by studying the steps they have taken over time to develop and hone their craft. The course typically (but not always) pairs, each week, one or two pieces of an author’s creative work with another that reflects critically on some aspects of their writing practice, and on the craft of writing. In essence, this is a hybrid course that blends study of creative work with that of writers’ critical self-reflection. Students also pursue their own creative writing projects, reflecting critically on their own process along the way. The course readings draw from multiple cultures, literary traditions, and genres including the short story, flash fiction, the novella, the essay, memoir, diary, children’s literature and poetry. Prerequisite: Writing as Inquiry WRIT-SHU 101/102 OR CRWR-SHU 159 Introduction to Creative Writing OR CRWR-SHU 161 Introduction to Creative Writing: Literary Translation Focus Fulfillment: This course counts as one of the three intermediate/advanced creative writing workshops required for completion of the Creative Writing Minor.

WRIT-SHU 101
Writing as Inquiry: WI

Critical inquiry is the heart of a liberal arts education, and writing is this inquiry manifested on the page. In NYU Shanghai’s first-year writing course, students will read texts and respond by writing their own. In doing so, they will add their critical perspectives to ongoing academic and public conversations. Students will work to write sophisticated and cogent prose, and learn to effectively incorporate written texts in the development of their
own arguments. Class discussions will include strategies for every step of the writing process— from invention and organization to research and revision. In a workshop setting, students will analyze the work of their peers and respond to feedback on their own writing. By the end of the course, students should be able to dissect difficult textual material, recognize rhetorical strategies and genre conventions, and build clear and convincing arguments that matter both within and beyond academic contexts.
GCHN-SHU 110
The Concept of China

What do people think they are talking about when they refer to “China”? Does the term refer to a geographical, cultural, political, hybrid, or other type of entity? How and why has that changed both within China and outside China? This course is about reality and representation; it will address both the shifting geographical, political, cultural and human reality of “China” and what “China” meant to both inhabitants and outsiders in different periods and in different contexts. The goals of the course are 1) to deepen understanding of the history of China and the role of the past in the present 2) to introduce different ways of thinking about China in the world and the world in China, 3) to learn to distinguish between opinion, hypothesis and fact in historical inquiry; 4) to reinstate a concept of China as dynamic, varied, and interactive. Prerequisite: None. Fulfillment: Core Curriculum Humanistic Perspectives on China or Interdisciplinary Perspectives on China; GCS Major Requirement; Humanities Major Other Introductory Course (18-19: Critical Concepts Core Course/Survey Course).

GCHN-SHU 156
History of Chinese Art

This course surveys art, visual culture, and material culture in China from the Neolithic to the end of the 19th century. Approximately one-third of the lectures will be organized based on the different mediums used in art, such as ceramics, jades, bronzes, and sculptures. Some lectures are designed to contextualize art into separate functions, such as for funerary and Buddhist rituals. The rest classes stress the difference in patronage, such as imperial art and literati art. Particular attention will be paid to understanding objects within their original social and cultural contexts. We will also relate individual artworks to a broad cultural background, highlighting the influence of various religions, philosophies, and politics. The goal of this course is to familiarize students with the diverse body of artwork produced in premodern China, as well as to consider the role art has played in representing or negotiating identities, religions, history, and politics. Students will be trained in various art historical methodologies and will deepen their knowledge about one aspect of Chinese art history through a group curatorial project. Prerequisites: None. Fulfillment: CORE HPC/IPC; GCS Elective Chinese Media, Arts and Literature; Humanities Major Other Introductory Course (18-19: Survey Course).

GCHN-SHU 164
The History of the Silk Road

The Silk Road has been a museum exhibition sensation as well as inspiration for Indiana-Jones-type of adventures, ever since the name was coined in 1877. As appealing as the name is in all kinds of media, it is never quite clear what the Silk Road actually entails. What does it mean to you, for instance? Searching for an answer, you will encounter numerous websites, books, scholarly and popular articles, or TV documentaries that seek to unravel its many mysteries and even travel agencies that aim at revealing its myths. By consulting archaeological as well as written sources this course is going to evaluate all aspects of early Silk Road history – trade, travel, war, religion, ideologies, and cultural exchange – from its earliest age through the Mongolian Era (13th century). The main goal is, however, not to look at every aspect in isolation as it is often done, but to bring them all together. This way it will become clear that actual reality was considerably more complex than is generally claimed. Only the interplay of several factors allowed The Silk Road to become a pre-modern ‘success story’ probably only rivaled by the internet. Prerequisites: None. Fulfillment: CORE SSPC or HPC; IPC; GCS China and the World; Humanities Other Introductory Course/Survey Course (18-19).

GCHN-SHU 165
China and the Islamic World, c. 600AD-Present

One of the most significant geopolitical shifts of recent years has been China’s increased interest and involvement in the Islamic world, from Afghanistan to Africa. However, although such connections are not new, scholars have rarely examined the long history of contacts between the Sinic and the Islamic worlds comprehensively and systematically. Assembling a wide array of primary and secondary sources on different forms of Sino-Islamic encounters, this course introduces the major events, issues, and peoples that are involved in the complex relations between them. In-depth discussions of these topics will not only provide students with new perspectives on the histories of the Islamic world and China respectively, but also historical insights to gain a deeper understanding of the newly revived Sino-Islamic relations and the emerging China-US-Middle East triangular relationship in the twenty-first century. This course welcomes all students interested in histories of the Islamic world and China. No special background is required, though of course some knowledge of the history of China and/or the Islamic world will be a plus. Although it is a seminar course (we meet once weekly), a fifteen-minute mini-lecture in each class will provide students with basic background knowledge and set the context for the following week. We will then devote ourselves to discussion of the assigned readings. Prerequisites: None. Fulfillment: CORE SSPC or HPC; IPC; GCS China and the World/ Electives Chinese History, Society, and Culture; Humanities Major Other Introductory Course/Survey Course (18-19: Topic Courses/Survey Courses).

GCHN-SHU 205
Hong Kong Cinema

This course introduces students to the distinctive cinema of Hong Kong (HK). We will focus on the years between 1967 and 1997, when HK rose from regional to international prominence, then declined. We will approach HK cinema from four perspectives: geopolitical history, film genre, directorial style, and the economics of the film industry. Students will learn to see these perspectives not as mutually exclusive but as complementary, for we can best understand a film by thinking about it from multiple angles. Students will write two essays; the first analyzing a film made before 1980, and the second analyzing one made between 1980 and 2000. Each student will twice lead discussion of readings from the syllabus. In a small group project, students will do research on a topic relevant to the course, make a bibliography of their findings, and then present those findings to the class. Prerequisites: GPS Fulfillment: CORE HPC or IPC; GCS Chinese Media, Arts, and Literature; Humanities Advanced Course.
GCHN-SHU 225

Cultural (Mis)translations: China and the West

What happens when one major human civilization that originates from one end of the earth comes to meet with another that thrives on the other? Will they prove themselves capable of a fruitful engagement that leads to peace and friendship based on mutual respect and understanding rather than distrust or even mutual destruction? What is the role of language in this cross-cultural encounter? This course aims to explore one such encounter, a truly unusual case in terms of its scale and splendor, namely that between China and the West in the modern period broadly defined. Surely we will not ignore the problems--political, ideological, as well as technical--that arise in this interactive process, but our focus will be on the sunny side of that encounter, on the example of those who embrace and embody through their creative and intellectual work the ideal of a harmonious though culturally diverse world.

Prerequisite: None. Fulfillment: CORE HPC; GCS Chinese Media, Arts, and Literature.

GCHN-SHU 233

Foreign Societies in Classical Chinese Writing

This is a Classical Chinese class that covers writings on foreign societies in history. In this class, we will see how people used Classical Chinese to make records of foreign societies, descriptively or imaginarily. We will follow pilgrimages to India as well as adventures in Vietnam; we will encounter child-eating Dutch cannibals as well as people from the Country of Dogs. Beneath this exotic surface, we will examine the underlying schemes and tropes that are often used to describe foreign people and polities in Classical Chinese writing. In this way, we will know what to expect when we read a text of similar genre. Because this is a Classical Chinese class, we will learn how to use grammar and context to parse difficult passages: we will learn basic tactics to unpack sentences when their structures are unclear or the words' meanings are opaque. These tactics are especially crucial when one encounters an unfamiliar text without any outside help. Prerequisite: CHIN-SHU 402 (Classical Chinese II) or equivalent; OR Instructor Permission (contact Professor Zhao Lu, lz69@nyu.edu).

GCHN-SHU 234

Dunhuang and Its Global Connections

Dunhuang is not only the "Pompeii of China" that in modern days attracts a huge amount of tourists; it was also one of the most metropolitan cities in the ancient world, comparable with Rome, Alexandria, or Constantinople. How could an inland city be so cosmopolitan? What makes the place a city of art? And how did this once fashionable city fade away, and then reappear as a complex of archeological sites? In this class, we will focus on one of the biggest archeological discoveries in the 20th century: Dunhuang. In addition to how Dunhuang was discovered, we will explore the main elements that vitalized Dunhuang as a metropolitan city: art, religion, language, literature, and technology. We will further examine the lifelines that brought these diverse cultural elements into Dunhuang from China, India, Central Asia, etc. As part of the class, we will also take a field trip to Dunhuang and nearby sites to physically experience the connectedness of Dunhuang. We will closely examine the murals, caves, and the city layouts so that we can reconstruct what it was like to live in the ancient Dunhuang. In other words, you get to be in the art world of Dunhuang. Prerequisite: None.

GCHN-SHU 236

Immersive Narrative of Chinese Monuments

This course combines digital visualization technology with contemporary interpretations of the significance of Chinese monuments that identify and recall major events in Chinese history. Students will learn about the history, cultural significance, and scholarly knowledge of the monuments. Selected sites include timber-structure buildings, Daoist temples, and Buddhist art and architecture. Meanwhile, the course will cover immersive narrative knowledge, such as direct modeling for Chinese wooden carpentry structures, artifacts lighting, texturing, rendering, and virtual walk-through animation. Visualization and further applications will apply in the lectures and assignments to examine virtual environments' authenticity and information management of the Chinese monuments. Students will create an immersive narrative using visualization tools to present a chosen monument site with its historical and cultural values in the final group project. Upon completing this course, students will have deepened their knowledge of the emerging field of the digital humanities through both a "digital" and a "humanistic" perspective and how digital humanities can be applied to visualize the history and culture of China. Prerequisite: Sophomore standing


GCHN-SHU 243

China and the Environment

China is an environmental disaster. China will save the world. There are many ways to think about China and the environment, but few conclusive answers. Our challenge is to think in the midst of multiple crises unfolding quickly through a tangled web of relationships that constitute environmental problems or solutions. To better understand how the environment in China is imagined, valued, and transformed, we will explore traditional ideas, environmental history and governance, ethnicity, and the aesthetic politics of the urban and rural. We will explore local material changes in energy, food, and forests and their links with global systems. And we will conclude by considering again China's role in the global environmental crisis. Prerequisite: None. Fulfillment: CORE SSPC or IPC; CORE STS; GCS The Politics, Economy, and Environment of China; Social Science Focus Environmental Studies 200 level course.

GCHN-SHU 246

Youth and Consumer Culture in China

How can a hamburger symbolize progress, an animated character provide comfort, and rock music define one's identity? In this course we will study the role of consumer culture in the lives of Chinese youth, both today and in
the past. By examining popular commodities including sneakers, coffee, backpacking, and celebrity idols, we will think about how young people use these things to find friendship and love, to seek success and happiness, and
to define who they are. As we consider why people like particular commodities, we will learn about class, gender,
etnicity, and modernity in China. Reading about the history of commodities in China, we will consider what is new
about consumer culture, and why people's tastes change over time. Alongside studies of specific commodities,
we will read key theoretical texts about shopping, advertising, media, identity, and fantasy: these texts will help
us understand how commodities can be imbued with tremendous power to shape our desires and create our
identities. During the semester, each student will conduct qualitative research about a commodity, including
online research and offline interviews with people who buy and sell this commodity. At the end of the semester,
we will gather your research together to produce a handbook of Chinese youth and consumer culture. Prerequisite: Sophomore standing. Fulfillment: CORE SSPC/IPC; GCS Elective: The Politics, Economy, and Environment of China; Social Science focus Anthropology 200 level.

GCHN-SHU 250
Geographies of China

Our goal is to map China. But rather than making maps through calculations or grids, we will be mapping China
conceptually and theoretically. This is to say that in studying China's regions, physical geography, political territories,
cities, counties, and people, our goal is to develop skills for thinking about China spatially. With thousands of
years of recorded history and a political system oriented to progress and national development, China is often
imagined in terms of linear time. However, from ancient walled cities to the Mao-era work-unit system to the
more recent migrations of rural labor, understanding how political, commercial, and social spaces are organized
is essential for understanding China's past and present. pre-req: None. Fulfillment: CORE SSPC or IPC; GCS elective
The Politics, Economy, and Environment of China; Social Science Focus Environmental Studies 200 level; Humanities
Interdisciplinary or other Advanced course (18-19: Critical Concepts or Topic Course).

GCHN-SHU 255
Eat, Pray Ponder: Chinese Intellectual Culture through the Age

This is a class about what Chinese people think and believe, and how they perceive the society to which they
belong. The class will cover a wide range of material from Shang oracle bones, Confucianism, Legalism, Taoism,
Buddhism, and various folk religions, to 20th-century debates on Western thought and Communism. This class
highlights three general concerns: 1) although we will cover the main categories of Chinese thought (e. g.
Confucianism, Taoism and Buddhism), we will emphasize the diversity of thought both within and outside those
larger categories; 2) we will make clear that people's beliefs and thought changed frequently over time and space,
and 3) we will examine how socio-economic conditions and the media used to convey ideas affect people's
intellectual world and vice versa. No Chinese is required. Prerequisite: None. Fulfillment: CORE HPC or IPC; GCS
Advanced track Language course for Native Chinese Speakers or Chinese History, Society, and Culture; Humanities
Introductory course (18-19: Survey Course/Topic Course).

GCHN-SHU 263
Voices from the Margin: Modern Chinese and Sinophone Writers

The literary scene in the modern and contemporary Chinese-speaking world is diverse, vast, and challenging for the
migrant and exilic minds whose creative energies are often driven by their poignant insights to the turbulent events
around them. Working in, outside, and between places like mainland China, Taiwan, Hong Kong, America, and parts of
Southeast Asia, Chinese writers ask questions about nationalism, tradition, ethno-linguistic politics, and cultural authenticity. They speak from and across multiple cultural margins to probe the nature of modernity, cross-cultural contact, and otherness amid the global flows of labor and ideas. This course invites students to participate in the ongoing discursive and historiographical debates over the study of "modern Chinese literature" through a fast-emerging transnational and comparative perspective. Reading stories, novels, and essays by both established and marginalized writers, we place the traditional nation-based rubric of Chinese literary studies in critical dialogues with a set of jarring historical contexts: Euro-American imperialism, Chinese immigration and their settler-colonial history, the post-1949 political split, and global decolonization movements, among others. (This may be used as a topic course or literary interpretation in the Humanities). Prerequisite: None.

GCHN-SHU 264
Chinese Migrant and Diasporic Networks

This course introduces students to the history and cultural formations of worldwide Chinese migrations and
diasporic communities, including change over the last two centuries and evolving global diasporic relationships
and interactions. Some topics of interest include Zheng He's legendary maritime travels on the imperial treasure
fleets, the opium trade and its implication for early transnational Chinese capitalism, labor migration and exclusion
in North America, socio-political and cultural indigenization of Chinese communities in Southeast Asia, and the
coolie trade in the Caribbean region. Materials of study include history, essay, literature, and film. Prerequisite: None. Fulfillment: CORE HPC; GCS China and the World; Humanities Introductory Course (18-19: Topic Course).

GCHN-SHU 265
Women in China: From May 4th to Me Too & Beyond

This course focuses on the lives of women in China over the past century. Through a range of sources students will examine the advances made, and challenged encountered, by women in China. Students will analyze the impact, and often unforeseen consequences, of state political, economic and social policies, on women's lives. In addition to documenting the many major improvements in the quality of most women's lives, the course will also address the challenges that women continue to face, such as the ongoing influence of traditional sexist values, trafficking of women, high-suicide rates, domestic-violence, and work-place gender discrimination and harassment. The course
will conclude with an examination of different imaginings of the long-term impact of China's critical demographic gender imbalance. As much as possible the experiences of women from a range of backgrounds, including different socio-economic, regional, ethnic, and religious backgrounds, will be incorporated into the course. Sources will include government policies, memoirs, short stories and science fiction, films, and academic books and articles.

Prerequisite: None. Fulfillment: CORE HPC; GCS The Politics, Economy, and Environment of China.

GCHN-SHU 267
The Cultivated City

This class examines the idea and practices of 'cultivation' in relation to the challenging environment of the 21st century city. Through field trips, readings and discussions, the class explores the concept of cultivation, and how it can be used as a basis for researching the urban ecology of Shanghai, both as a past and future city. The class incorporates a major project in the digital humanities, in which students use the tools of interactive media (audio, video and cartographic technologies) to research, map and narrativize the ways in which architects, designers, artists and intellectuals engage with the traditions of cultivation in order to imagine and recreate the future metropolis.

GCHN-SHU 275
Memory Politics in China

From historical television series, to claims of a "5000 year-old culture," to arguments bolstering territorial claims, in China history seems ubiquitous in contemporary life. In this class, explore the present-day politics of the past in China through film, fiction, music, food, urban sites, and contemporary controversies in the news. Analyze "memory politics" using major theoretical approaches to memory and history: collective memory, psychoanalysis, trauma, nostalgia, and consumption. Place China in global context through case studies on colonialism, world war, and international espionage. Visit and interpret three Shanghai sites: the new Municipal History Museum, an Anti-Japan War memorial park, and a Cultural Revolution restaurant. Produce a portfolio of writing on sites and objects that invoke memory in China and beyond. Prerequisite: None.

GCHN-SHU 283
Reading and Viewing Modern China

This is a bilingual and multimedia course designed to help students in reading, translating and critiquing primary source-based cases in modern Chinese history. For this, several sets of original documents covering different periods and events and reflecting different perspectives will be selected, and related documentary films will be shown and discussed in class. High competence in Chinese and instructor permission are required to take the course.

Pre-requisites: Fulfillment of EAP 100 OR instructor's confirmation of adequate language competency for the course through a pre-enrollment test. Please contact the instructors for more information. Fulfillment: CORE HPC or IPC; GCS Advanced track Language course for Native Chinese Speakers; Chinese for Advanced Undergraduate Research.

GCHN-SHU 316
Chinese Art and Architecture in Cross-cultural Contexts

This course is a research seminar that prepares the students for researching, translating, and critical writing in Chinese art and architecture in a cross-cultural context. The first half of the semester will progress with different topics, including, but not limited to, landscape paintings, Buddhist art, ceramics, and gardens and architecture. To tackle research questions and problems in these fields, the students will get familiar with Chinese collections of major international museums and online Chinese art and architecture databases. They have to discuss and debate over terms from Chinese primary sources translated into English. They will also present their critiques on scholarly works focusing on cross-cultural approaches and methodology. The second half of the course allows students to make progress on a research project. They may choose a specific cross-cultural issue in Chinese art/architecture or opt to critique a historian's work from a cross-cultural perspective. Upon completing the course, the students will expand their knowledge in Chinese art and architecture from a global perspective and enhance research and critique skills to serve more humanistic disciplines. Prerequisite: Sophomore standing or above. language prerequisite: Intermediate II or Chinese native speaker. Fulfillment: GCS Major Requirement Chinese for Advanced Undergraduate Research For Advanced GCS Track.

GCHN-SHU 351
Buddhism, Nature and Technology in the Chinese World

This course explores the interplay of Buddhism, nature and technology in the Chinese world. In the first part, we will examine Buddhist-inspired worldviews that saw human beings as an integral part of a cosmos dominated by nature. In the second part, we will focus on Chinese Buddhist representations of nonhuman animals and human-animal relations. In the third part we will analyze Buddhist-inspired technology, in the sense of an application of knowledge that connects us inter-subjectively and with the material world. We will focus on Buddhist-inspired non-human actants, artifacts, hermeneutics textual forms, infrastructures, and so on that have extended human capacities. In the final part we will focus on Shanghai and the Buddhascapes of the modern Chinese city. Prereq for GCHN-SHU 351 is GPS and WAI.

GCHN-SHU 400
Global China Studies Senior Capstone Seminar I

Fall Semester: Methodologies in China Studies; Spring Semester: Research Project Seminar. The first semester of this two-semester capstone course will focus on examining the importance and shortcomings of Chinese primary sources and data, familiarizing with and learning how to access and use key archives, museums, libraries, research tools, databases, and digital websites, and analyzing some of the pivotal books and articles on China. Students will also draft a research proposal, with a preliminary bibliography, and identify a faculty mentor for the second semester.
of the capstone course. During the second semester, students will work primarily with their respective mentors, but are required to also participate and make presentations at a weekly research seminar. Those opting for Advanced GCS major must demonstrate competency in reading and analyzing Chinese language sources. Prerequisite: Senior Standing GCS Major. Major Fulfillment: GCS Two-semester Capstone Course.

GCHN-SHU 401
Global China Studies Senior Capstone Seminar II

Fall Semester: Methodologies in China Studies; Spring Semester: Research Project Seminar. The first semester of this two-semester capstone course will focus on examining the importance and shortcomings of Chinese primary sources and data, familiarizing with and learning how to access and use key archives, museums, libraries, research tools, databases, and digital websites, and analyzing some of the pivotal books and articles on China. Students will also draft a research proposal, with a preliminary bibliography, and identify a faculty mentor for the second semester of the capstone course. During the second semester, students will work primarily with their respective mentors, but are required to also participate and make presentations at a weekly research seminar. Those opting for Advanced GCS major must demonstrate competency in reading and analyzing Chinese language sources. Prerequisite: Senior Standing GCS Major AND completion of GCHN-SHU 400. Fulfillment: GCS capstone requirement.

RELS-SHU 9270
Religion and Society in China: Ghosts, Gods, Buddhas and Ancestors

This course is a survey of the major historical and contemporary currents of China’s religious thought and practice, including Buddhism, Confucianism, Daoism and “popular religion”. It will focus on the interactions between such teachings and practices, as well as on the role of religion in Chinese society. You will study topics such as divination, visual culture, ritual, ancestor worship, morality, longevity techniques, healing practices and meditation. A selected number of primary and secondary sources will be discussed in each lecture; documentary films and visits to religious sites will be also key constituents of the course. Please note if you miss the first class of the term, you will need to contact the instructor to determine if you can still remain enrolled in the course. Fulfillment: CORE SSPC or IPC; GCS Chinese History, Society, and Culture; Humanities Interdisciplinary/Advanced Course (18-19: Topic Course).

MCC-SHU 9451
The Media in China

This course will be mainly a macro- and micro-scopic examination of media changes worldwide in general and in China in particular, drawing on a wide variety of media theories. Although pro forma seemingly little has changed in the way the traditional media (newspapers, radio and television) communicate officially-sanctioned messages to the public, the rise of the Internet and the porous information walls between China and the outside world have challenged the dominance of state presence in media, thus ushering in new changes and unprecedented transformation in the way that information is communicated in this country – a change of no less interest to media studies than to other disciplinary concerns (e.g. political science, sociology, anthropology, philosophy, etc.). This course brings latest cultural and media theories into examining the concrete changes experienced by China, thus offering the students an opportunity to test the non/applicability of existing theories. Please note if you miss the first class of the term, you will need to contact the instructor to determine if you can still remain enrolled in the course. Fulfillment: GCS Chinese Media, Arts, and Literature; Social Science Major Focus Courses Sociology - 200 level/ Self-Designed/Media Studies - 200 level; satisfies 18-19: Humanities Digital Approaches Course.
HUMAN-SHU 110
What is Science and Technology Studies?
This course is an introduction to Science and Technology Studies (STS), an interdisciplinary field treating science and technology as socially embedded enterprises. We will examine how social, political, cultural, and material conditions shape scientific and technological activity and how science and technology, in turn, shape society. You will become familiar with the basic concepts and methods developed by STS scholars in history, sociology, and anthropology and explore how the scope of the field has expanded to include a variety of empirical case studies, theoretical arguments, and scholarly debates. The kinds of questions we will explore include: What counts as scientific knowledge? How is it produced? How do scientists establish credibility? Can there be a scientific study of scientific inquiry? At what extent are science and technology shaped by historical context? Prerequisite: None. Fulfillment: Humanities Foundations/Introductory Course (18-19: Survey Course).

HUMAN-SHU 150
Asian Religions
In this course we explore some of the major religious traditions in Asia. The course comprises three parts. In Week 1, we introduce the course and take a hard look at the contested category of religion(s). During the core twelve weeks we explore major religious traditions in South Asia (4 weeks), China (6 weeks), and Japan (2 weeks). For each of the major religious traditions, we pursue a threefold approach: (a) documents; (b) lived religion; and (c) theories and methods. (a) Documents includes a wide range of historical and current religious voices (classical foundational texts, ritual prayers, interviews, hagiography, pamphlets for children, doctrinal tracts...). In class the instructor will situate the readings in their historical and cultural context and provide an in-depth analysis of their ideas as well as break down the hard bits. Participation and in-class discussion of our readings, films, interaction with our guest-speakers, and visit to religious sites will be essential components of the course. Prerequisite: GPS. Fulfillment: Humanities Advanced Course (18-19: Topic Course).

HUMAN-SHU 168
Penning the Self(ie): Orality, Literacy, Digitality, and the Literary Subject
Phone in hand, questions loom in our head: is digital technology destroying memory, communication, and interpersonal relationships? Will our kids read and write cursive? Is print media disappearing? The notion of writing as a technology seems far removed from our fast-paced, digital world; but it was not so long ago that writing constituted a technological advance that permeated Western societies. This course examines key moments in writing's history in order to understand its role in shaping the literary subject. We trace the shift from oral to written traditions in romance and courtly literature, then turn to the printing press, copyright and intellectual property, and conclude by examining how our relationship to writing in the past can inform our relationship to digital media in the present. Throughout the semester, students engage in an experiential learning project where they create a hero/ine whose story evolves from oral tradition, to written romance, to social media subject. Prerequisite: None. Fulfillment: Humanities Introductory/Advanced Course (18-19: Digital Approaches Course).

HUMAN-SHU 180
Korean Culture and Society through K-pop
This course examines the transitions in Korean culture and society through modern popular music from the turn of the twentieth century to the latest global K-pop hits. We will study how K-pop has developed not only within the parameters of Korea's historical and cultural contexts but also powerful global cultural influences and technological developments. We will also explore what makes this strongly hybridized and integrated art form Korean, what are its distinctive musical and non-musical features, and what has contributed to the global recognition of K-pop. In addition, we will discuss how K-pop challenges conventional notions of popular music, racial and ethnic dynamics, gender, fandom, nationalism, globalization, and other related subjects. Classes will consist of lectures and recitations. In each class session we will listen to and analyze music pieces representing various genres and investigate video clips of performances and music videos. Prerequisite: None. Fulfillment: Humanities Introductory Course (18-19: Topic Course).

HUMAN-SHU 200
French Cinema: The Birth of the Seventh Art
In 1895, when Auguste and Louis Lumière held their first private film screening in Paris, they could not have foreseen the pervasive role that cinema would one day play in our homes and our hearts. This introduction to French cinema traces the seventh art from its inception to the present day, focusing on pioneers of French cinema, surrealist film, the influential New Wave movement, and contemporary filmmakers. In addition to the films that you will watch in and out of class, you will explore a variety of theoretical approaches to cinema and develop skills in film analysis through readings and class discussions. Films will be screened in French with English subtitles. Coursework will include several short writing assignments and film analysis projects. Course Repeatable for Credit. Fulfillment: Humanities Introductory Course (18-19: Survey Course).

HUMAN-SHU 214
European Thought and Culture: 1750–1870
Study of major themes in European intellectual history from the end of the Enlightenment to the last decades of the 19th century, considered in the light of the social and political contexts in which they arose and the cultural backgrounds that helped shape them. Topics include romanticism, liberal and radical social theory, aestheticism, the late 19th-century crisis of values, and the rise of modern social science. Prerequisite: None. Fulfillment: Humanities Advanced Course (18-19: Topic Course).
Aesthetics and Literature

Literature turns images into words. How does the author transform seeing into language? How does the reader turn words into mental images? Where do the sensorial boundaries between literary and artistic media lie? In this course, we will read key texts on visual thinking and aesthetic experience across national traditions. Combining close readings of novels, poetry, photography, and cinema with museum and gallery visits, students will consider the relationship between image and text, author and reader, object and perception. Authors read include Sei Shōnagon, Marcel Proust, Susan Sontag, Maggie Nelson, Antoni Tàpies, Gao Xingjian, Teju Cole and others. Prerequisite: None. Fulfillment: Humanities Introductory Course (18-19: Survey Course).

Contemporary Art and Theory in North America and Europe

Contemporary art can seem perplexing, yet when viewed as a progression of ideas and aesthetic strategies that respond to societal shifts, a certain logic emerges. This course traces movements in North American and European art from 1945 to the present through a study of primary and secondary texts, artwork examples, and historic context. In lectures, discussion and activities, we will investigate how artists went beyond primarily object-based works to explore expanded notions of what art can be and the interaction between the artwork and the viewer. The ways institutional frameworks, media and technology, politics, and social relations, informed contemporary art practice will also be examined. At the end of this course, students should be able to identify contemporary art movements, key artists, and relevant artworks and create compelling arguments around these works. They will also be able to articulate the conceptual and visual strategies employed in these pieces, recognize connections and differences across movements and have a basic knowledge of the milieu in which they were produced. Prerequisite: None. Fulfillment: Humanities Introductory Course (18-19: Survey Course).

In Conversation: Black and Chinese Artists

This course is a comparative study of the way a group of Black and Asian artists engaged with white western racism. As an advanced interdisciplinary seminar, this course is on the one hand intellectual, examining the historical subjugation of Black and Asian peoples to white peoples, and on the other hand practical, offering examples and exercises for artistic negotiation, resistance, and rebellion against racial hierarchies. Prerequisite: None. Fulfillment: Humanities Interdisciplinary/Advanced Course (18-19: Topic Course).

Gender, Sexuality, and Culture

This course invites students to think about some of the most carefully controlled but also fervently sought-after questions since the time of Plato: what is the difference between gender and sex? What is the relationship between our gendered bodies, behaviors, and identities? How does sex, something we do, translate to the discourse of sexuality, something we talk about? What is the measurement of normality? If art indeed imitates and even changes life, in what ways do images of gender performance in literary and visual culture also reproduce and perhaps reshape our own experiences as gendered and sexed beings in a society? What can gender and sexuality tell us about the construction of culture, its boundaries, and its "outlaws"? Through the reading of philosophical, literary, historical, medical, and visual texts, and through discussions of case studies in mass media, we learn to see gender and sexuality as an evolving historical phenomenon rather than essentialist notions. We ask how the development of human interest in sexuality coincides with the burgeoning of governing techniques in modern times to police and promote sex simultaneously—as desirable and useful on the one hand, but also forbidden and harmful on the other. Lastly, as humanists, we ask how the boundary of our body (that is, our inside and outside in the most literal sense) is marked less by our blood cells, skin pores, or molecules than by our use of language. Prerequisite: None. Fulfillment: Humanities Interdisciplinary/Advanced Course (18-19: Critical Concepts/Topic Course).

Humanities Research Lab: Study Immigrant Cities

Prerequisite: None. Fulfillment: Humanities Introductory Course (18-19 Digital Approaches Course/Topic Course).

Modern European Philosophy

An examination of major philosophical ideas and texts in Europe in the 17th and 18th centuries, from the scientific revolution to the beginning of German Idealism, including works by Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, and Kant. Prerequisite: None. Fulfillment: Humanities Introductory Course (18-19: Topic Course).

Shanghai Stories

This course provides an introduction to the history and culture of Shanghai through the eyes of fiction writers. We will read short stories (in English translation) by Chinese, British, American, Japanese, French, Polish, and South African writers who lived in the city between 1910 and 2010. Their stories will take us on an imaginary city tour through time and space: from businessmen, politicians, and prostitutes gathering in the nightclubs of the old Bund, to Jewish refugees struggling to find a home in the poor shikumen neighborhoods of Hongkou, to teachers and students fighting political battles at the university campuses during the Cultural Revolution, and young urban youth pursuing cosmopolitan lifestyles in the global city of today. The course also includes trips to various places featured in the stories and guest lectures by some of Shanghai's most famous writers today. Prerequisite: None. Fulfillment: CORE HPC or IPC; GCS Chinese Media, Arts, and Literature; Humanities Introductory Course (18-19 Topic Course).
HUMN-SHU 400A
Humanities Capstone Seminar I

Fall Semester - Part I: Students design and conduct an independent research project in their area of focus using the theories and methods with which they have become familiar over the course of completing the major. Prerequisite: Open only to Humanities majors in the senior year. Fulfillment: Humanities Major Capstone.

HUMN-SHU 401
Humanities Capstone Seminar

Students design and conduct an independent research project in their area of focus using the theories and methods with which they have become familiar over the course of completing the major. Prerequisite: Open only to Humanities majors in the senior year. Fulfillment: Humanities Major Capstone.

HUMN-SHU 997
Independent Study I - Humanities

Students are permitted to work on an individual basis under the supervision of a full-time faculty member in the Humanities discipline if they have maintained an overall GPA of 3.0 and have a study proposal that is approved by a Humanities professor. Students are expected to spend about ten to twelve hours a week on their project for 4 credits.

HIST-SHU 101
Foundations: What is History?

This course provides a broad introduction to a range of theoretical frameworks, methodologies and approaches that have shaped the academic study of history, including social, cultural and intellectual history, microhistory and global history, and histories of gender, race and sexuality. We will discuss how historians interrogate the key categories of historical temporality and spatiality, how they argue, structure and stake their claims, and how their work has changed over time. In doing so, we will read and discuss a number of classic works that have changed the ways in which history has been conceptualized and written. We will also examine how historians construct historiographical debates around particular themes, topics and problems. The aim is to acquire critical knowledge of a variety of historical approaches and methodologies at work when reading both historical scholarship and historical source materials. Prerequisites: None. Fulfillment: Humanities Foundations/Introductory Course (18-19 Critical Concepts Course).

HIST-SHU 130
Western Culture is not I, II, III: Arab-Islamic Influences on the West

This course utilizes multidisciplinary sources of evidence to address Arab-Islamic knowledge and culture, the influences that they had on medieval and early modern Europe, and that they continue to have today, while questioning why many Western scholars have minimized Arab-Islamic contributions in favor of "Western Exceptionalism" narratives. By exploring cross-cultural transmissions of knowledge, students are encouraged to think critically about how ideas and technologies evolve as they are adopted by individuals and groups in order to suit their personal and cultural needs. Each session centers around an area of Arab-Islamic influence on the "West" with an example of an English (or other European languages) word that can trace its origin back to Arabic (or other Middle Eastern languages). Prerequisite: None. Fulfillment: Humanities Introductory Course (18-19: Survey Course).

HIST-SHU 145
Food in Chinese History

The goal of this course is to examine Chinese society and culture through the lens of the consumption of food and to elucidate the central role played at different times by food in Chinese culture and its representations. We examine the role of food in Chinese social, cultural, economic, and political history, with an emphasis on the pre-modern period. Topics may include the relationship of health and diet; food in religious and ritual practice; gastronomy; consumption and the material culture of food, including food as gift; regional cuisines; restaurants and catering; vegetarianism; famine and cannibalism; imperial dining practices; food identity; and global notions about Chinese food. Prerequisite: Global Perspectives on Society (GPS). Fulfillment: CORE SSPC/HPC or CORE IPC; GCS Elective Chinese History, Society, and Culture; Humanities Advanced Course (18-19 Topic Course).

HIST-SHU 153
History of Modern China Since 1840

This course examines China's modern history from around the 16th century to the present. It will go through the social, political, economic and cultural, as well as international developments China has experienced during the past four hundred years, with an emphasis placed upon the late 19th and 20th centuries. While this course will provide a chronological depiction of main historical events and historical figures, it will also emphasize a series of important themes crucial for comprehending the dynamics and trajectory of China's modern era. Its purpose is not just to impart information; it also aims to cultivate a basic understanding of the significance of the Chinese experience in the age of worldwide modernization. This course will also expose students to different scholarly or other interpretations of China's recent past, so that, hopefully, they will occupy an academically/intellectually informed position to critically embrace or discard all kinds of narratives of "China" and its modern history that they encounter. The format of the course combines lectures, critical discussions, and interactive selected texts reading. It is expected that all students will be prepared for the course outside class and will be actively engaged in all parts of the class. Prerequisites: None. Fulfillment: CORE HPC or IPC; GCS Chinese History, Society, and Culture; Humanities Introductory Course (18-19: Survey Course).
This course provides an overview of Chinese American history and its relevance for contemporary issues in the China and the United States. There are over 50 million people of Chinese heritage outside of mainland China, Taiwan, and Hong Kong, and those in the United States have helped shape the course of Chinese history over the last hundred and fifty years. For the China side, this course covers major factors driving Chinese migration during the Qing, Republic of China, and People's Republic of China periods, and the different impact Chinese migrants had on the economy, culture, and political structures of China. For the U.S. side, this course covers the first wave of Chinese immigration in the 19th century, the rise of anti-Chinese movements, Chinese Exclusion, and the experiences of Chinese Americans during WWII. Prerequisite: None. Fulfillment: CORE HPC; GCS China and the World; Humanities Introductory Course (18-19: Topic Course).

HIST-SHU 156
Europe since 1945

Covers the impact of World War II, the postwar division of Europe, the onset of the Cold War, the economic recovery and transformation of Western Europe, Stalinism in Eastern Europe, the 1960s and events of 1968, the origins and development of the European community, and the cultural and intellectual life of European nations in this period. Ends with a discussion of the Eastern European revolutions of 1989 and their significance, together with the reunification of Germany, for the future of the continent. Prerequisites: None. Fulfillment: Humanities Introductory Course (18-19: Survey Course).

HIST-SHU 200
Aliens Since 1897

Whether intelligent life exists outside the confines of planet Earth is an old question to which an abundance of new answers has been given over the course of the twentieth century, from philosophy, religion and science fiction to anthropology, communication studies and astrophysics. Located at the intersection of cultural history, the history of science and technology, literary studies and film, this class charts the manifold figurations of the alien since its modern invention in 1897. Individual sessions will be devoted to invasions from Mars and Venus, H. G. Wells and Liu Cixin, UFO sightings and alien encounters, but also to the search for extraterrestrial intelligence, NASA's Voyager missions, the making of astrobiology into a scholarly discipline, the so-called Plurality of Worlds and Rare Earth controversies and many other aspects of modern extraterrestrialism. Ultimately, humankind's self-understanding as a species is defined, tested and exposed when confronted with radical alterity, be it real or imagined. Prerequisite: This is an advanced undergraduate seminar with a research focus and a maximum of 15 students. It is open to juniors and seniors who have taken at least one humanities class; freshmen and sophomores must get instructor approval. Fulfillment: Humanities Advanced Course.

HIST-SHU 205
History of Modern Medicine

This course covers the history of medicine in Europe and North America from the eighteenth century to the present. We will explore how perceptions of illness and health changed over time in relation to transformations in politics, society, science, and technology. Drawing on primary and secondary sources, you will learn how to place medical texts, techniques, and artifacts within their epistemic, historical, and socio-political contexts. Topics will include: the historical development and organization of medical knowledge and its branches; corresponding shifts in explanations of disease; the role of modern institutions and technologies in the study and control of diseased individuals and infected populations; the rise of the hospital; the relationship between medicine, science, and industry; the shifting doctor-patient relationship; the social meanings of illness; and the changing burden of disease. Prerequisite: None. Fulfillment: Humanities Introductory Course (18-19: Survey Course).

HIST-SHU 208
Europe's Long Twentieth Century

This course provides a broad introduction to the economic, political, social and cultural history of Europe since 1900. Following the most violent conflict in human history during the first half of the twentieth century, Europe's postwar reconstruction was based on a principle of peace through prosperity and the political ideal of an ever closer union. In recent years, however, the combined economic and migrant crises have put this postwar consensus to a test. Analyzing a wide array of primary materials including autobiographical writings, newspaper articles, statistics, images, film and sound, the seminar will familiarize students with key themes and problems of modern European history and historiography. Individual sessions examine fin-de-siècle culture and modernity; imperialism and colonialism; the causes, experiences and effects of the First and Second World Wars; the Holocaust; the so-called Europeanization of Europe and its role in the Global Cold War; the crisis-ridden 1970s; the revolution of 1989 in Eastern Europe; and the crucial question of whether a distinctive European identity and sense of community have developed since the post-war period that can withstand the entangled crises of the early twenty-first century. The class includes field trips to selected sites in Shanghai entwined with European history. Previous knowledge or experience is welcome but not required. Prerequisites: None. Fulfillment: Humanities Introductory Course (18-19: Survey Course).

HIST-SHU 209
Witches, Magic and Witch Hunts in the Atlantic World

The study of witchcraft beliefs and the witch hunts of early modern Europe has brought enormous insight to our historical understanding of popular culture, gender, social conflict, religion, and law. This course examines European
ideas about witchcraft in the sixteenth-eighteenth centuries and how the European model of witchcraft became exported to other parts of the Atlantic world (Africa, North America, South America) during the early-modern period of European economic and colonial expansion. In addition, we will explore how non-European concepts of the supernatural, magical, and divine differed from or intersected with European beliefs and assumptions at the moment of cross-cultural encounter. Prerequisite: None. Fulfillment: Humanities Advanced Course (18-19: Survey Course).

HIST-SHU 225
The Global Space Age

Over the course of the twentieth century the infinite void that surrounds planet Earth has stimulated the human imagination as never before. For several decades, anticipation of human spaceflight was intimately bound with futuristic visions of technoscientific progress, while space exploration became key to how societies understood themselves, not only in Russia and the United States, but also in Europe, China, India and other parts of the world. This course charts the rise and fall of the Space Age from a global perspective. Individual sessions will be devoted to the ‘rocket fad’ of the Weimar Republic; Nazi ‘wonder weapons’; the so-called Sputnik shock and the American moon landings; UFOs and alleged alien encounters; the Search for Extraterrestrial Intelligence (SETI); Earth photography and the making of a planet; satellites and space-based communication infrastructures; as well as the role of private technonobodies and astroentrepreneurs in bringing back what some observers have been quick to label a “Second” or “New” Space Age. Students will watch and analyze various classical space movies, from Woman in the Moon (1929) to Forbidden Planet (1956). They will also participate in the concomitant ‘NYU Space Talks: History, Politics, Astroculture’ lecture series (space-talks.com). If feasible, a field trip to the Qian Xuesen Library and Museum of Shanghai Jiao Tong University will be arranged. Prerequisite: 1) GPS, 2) this is an advanced undergraduate seminar open to juniors and seniors who have taken at least one humanities class; freshmen and sophomores must get instructor approval. Fulfillment: CORE STS; Humanities Advanced Course (18-19: Digital Approaches/Topic Course).

HIST-SHU 239
New York: History of the City and its People

Examines key themes in the social history of New York City: the pattern of its physical and population growth, its social structure and class relations, ethnic and racial groups, municipal government and politics, family and work life, and institutions of social welfare and public order. Prerequisites: None. Fulfillment: CORE STS; Humanities Advanced Course (18-19: Digital Approaches/Topic Course).

HIST-SHU 250
Tianxia: Traditional China and the World

China at the Center? An Exploration of Chinese Foreign Relations from Pre-imperial to Late Imperial Times. The main title of this course is an allusion to a book authored by Mark Mancall in 1984. However, there are some crucial differences between his approach to Chinese foreign relations and the subject of this course. Mancall has claimed – as have so many scholars before and after him – that Chinese interactions with the outside world were dictated by an ideology that saw China’s culture as superior to the surrounding ‘barbarians.’ This concept is now widely known as the so-called ‘tributary system.’ We are going to explore whether such assertions indeed have any merit. One little hint: things might not have been as easy as they appear at first glance. Over the course of the semester we will be tracing Chinese foreign relations from roughly the 6th century BCE (was there even a ‘China’ that could set itself apart from the others?) through the 19th century CE, that is to say the period when the Qing dynasty (1644-1911) was forced to interact with the Western powers such as the British Empire. Even today when there seems to be an abundance of media coverage, the meanings of bilateral or multilateral exchanges take quite some effort to deduce; too many details remain hidden from the public eye. The (ancient) past, of course, is even less generous with data. Nevertheless, there is plenty of information to be had; we just have to look for it. Thus, participants in this course will have the opportunity to immerse themselves in various kinds of sources: historiographical records, material culture, or personal diaries to name but a few. In doing so, our main objective will be that we develop a critical, analytical attitude toward said sources that will ultimately lead us to a more nuanced understanding of Chinese dealings with the outside world. Prerequisites: None. Fulfillment: CORE STS; Humanities Advanced Course (18-19: Digital Approaches/Topic Course).

HIST-SHU 260
Voice of Empire

This course looks at the history of Empires through texts and images produced by people who lived in them. Visual and textual sources include reports by bureaucrats and officials, petitions by subjects, histories by local scholars, memoirs, and court cases. The objective of the course is to study how empires operated and their effects on their population through and from the perspective of imperial subjects. Prerequisites: None. Fulfillment: Humanities Advanced Course (18-19: Topic Course).

HIST-SHU 265
The Emergence of the Modern Middle East and North Africa

This course provides a brief introduction to the emergence of the modern Middle East and North Africa from 1699 to the end of WWII. Its geographic scope comprises the central provinces and territories of the former Ottoman and Safavid empires: Turkey, Iraq, Syria, Iran, Egypt, Levant, and North Africa. The syllabus emphasizes four analytical themes: first, the historical evolution of “Middle Eastern” polities from dynastic and religious empires in the 18th century to modern “nation-states” in the 20th; second, the impact of industrial capitalism and European imperial expansion on local societies and their modes of production; third, local conceptions of modernity and measures of modernization in responses to European colonial expansion; Islamic and secular reform movements; nationalism and revolution; fourth, the ideological and socio-cultural dimensions of these large-scale transformations,
specifically the rise of mass ideologies of liberation and development and the emergence of new issues in the areas of gender, identity, and popular culture. Major historical events include two world wars, creation of "new orders," (constitutional republics, Islamic regimes or authoritarian states), projects and challenges of postcolonial state-building. Prerequisite: None. Fulfillment: Humanities Advanced Course (18-19: Topic Course).

HIST-SHU 270
Japan After 1945

World War Two represents a transformational event for the twentieth century world. The dramatic stories of the war and its aftermath include the momentary triumph of fascism as a global movement and its military defeat; the redrawing of geopolitical maps as hot wars resolved themselves into cold wars; the rise and fall of empires; decolonization and the emergence of a "third world" of new nations. In what ways did World War Two and its aftermath reshape Asia? This course explores this question by looking at the case of Japan. How do the stories of Japan's defeat, the process of decolonization in Asia, the US occupation, and the creation of regional cold war order complicate our understandings of the twentieth century world? Prerequisite: GPS. Fulfillment: Humanities Advanced Course (18-19: Topic Course).

HIST-SHU 280
The Two Koreas

This course explores the political, economic, and cultural transformations on the Korean peninsula from late colonial times to the contemporary situation of two Korean nation-states. We will pay close attention to ideological, socio-economic, and cultural differences as well as similarities between both Koreas. We will also consider the ways in which postcolonial competition between the two states affected the lived realities of their peoples in transnational historical contexts. Most audiovisual sources and literary texts are in English, and no previous knowledge of Korean is required. Prerequisite: None. Fulfillment: Humanities Advanced Course (18-19: Topic Course).

HIST-SHU 302
History of Water

While global citizens have long been concerned about conserving and rationing our use of fossil fuels, the same cannot be said for an even more precious resource – water. Only in the last few years have government agencies, NGOs, and the market begun to tackle the problem of dwindling water resources. The current statistics and projections are dire. If we do not come up with new technologies to conserve water and use it more efficiently, more people will be without clean water or enough food. The United Nations estimates that by 2030 as many as 4 billion people will not have access to enough water for their basic needs. During the course of this semester we will read about both contemporary issues that affect us as well as look at the historical context in which these problems developed. We will use case studies as a method for discussing these issues. Case Studies will include: the United States, in particular the American West and New York City; Early Modern Venice and Egypt, and modern day African and China. Reading loads will be moderate to heavy, but engaging. You can plan on reading about 100 pages a week divided between the two classes. A portion of your grade will be based on class discussion. Each student will be asked to also write 4 shorter (2-3) papers based on the readings throughout the term. Each student will also write a small research/topics paper (10-12 pages) on the topic of their choice. You will be asked to look at a current problem with water scarcity or contamination and find its historical precedents. Prerequisites: None. Fulfillment: CORE STS; Humanities Introductory Course (18-19: Critical Concepts Course/Topic Course); Social Science Major Focus Courses Environmental Studies - 200 level course.

HIST-SHU 303
Histories and Politics of Noise

Some noises pierce our ears and disrupt both our hearing and our thinking. In contrast, background noises may be loud, persistent, and even harmful to our ears, but they suffuse our everyday lives so fully that we can ignore them. Despite our daily subjective encounters with noise, can noise have a political meaning as well, one that transcends our individual experiences with din and discord, cacophony and clamor? And can noise have a cultural and social history, despite being an ephemeral sensual experience? How did the meanings, perceptions, and effects of noise change over time, especially in moments that experienced major transformations in religious practices, scientific knowledge, urban life, political state formation, and Europe's relationship to the rest of the world? Did such immense changes affect how historical actors listened to the world around them, or how and what they heard? How did historical actors from different cultural contexts use noise as a way of assigning meanings, differences, distinctions, and hierarchies? Fulfillment: Humanities Interdisciplinary/Advanced Course (18-19: Critical Concepts/Topic Course).

HIST-SHU 312
China Encounters the World

The course focuses on the cross-currents of China's encounters with the world, from the late 16th to the early 21st century. It proceeds from two assumptions: first, that China has long been engaged with the rest of the world rather than ever having been "closed", as some would have it; and second, that impact and influence flow in multiple directions: into, through, and out of China, whether intentionally or involuntarily. Through a combination of lecture, discussion, and student research projects we will explore China's encounters with the world chronologically and thematically, covering such broad topics as religion and philosophy; diplomacy; law; trade; war; revolution; political systems, and "soft power". Pre-requisites: None. Fulfillment: CORE HPC or IPC; GCS China and the World; Humanities Introductory Course (18-19: Survey Course).
learn how thinking about translation can make us more careful readers and writers. Prerequisite: None. Fulfillment: Humanities Introductory Course.

LIT-SHU 190

Women's World Literature in the Long 19th Century

This course explores the link between writing and imagining a world by studying texts authored by women from varied historical, geographic and cultural contexts. Through the works of Bibi Khanum Astarabadi, Mary Wollstonecraft, Halide Edib Adıvar, Phillis Wheatley, and other writers from Iran, Britain, the United States, Lebanon, Egypt, Palestine, and Turkey, the course asks students to consider what agency looks like in feminist writings from around the world. Building connections between seemingly disparate Eastern and Western literary, cultural and philosophical traditions, students will learn to revise the vocabularies and practices of feminism by decentering its Eurocentric configurations. Prerequisite: GPS. Fulfillment: Humanities Advanced Course (18-19: Topic Course).

LIT-SHU 215

Excavating Deep Time: Literature and the Human Condition

To read, write and tell stories is to leave a record of human expression. This course engages with literary works that explore the long human past, asking how modern and contemporary cultures re-wrote and reinterpreted the human experience during the nineteenth and twenty-first centuries. This class looks to the global prehistorical imagination through diverse literary, philosophical and cultural works. Focusing in on archaeological discoveries including the first prehistoric cave art recognized at Spain's Altamira caves in 1879, the first translation and publication of Gilgamesh in 1880, the discovery of the Dunhuang manuscripts in Mogao Cave in 1900, the “Peking Man” of Zhoukoudian in 1921 and the Lascaux caves in 1941, we will read related writings and works from a range of nineteenth and twentieth-century writers, philosophers and intellectuals. Authors may include Charles Darwin, Friedrich Engels, Sigmund Freud, Carl Jung, Virginia Woolf, Pierre Teilhard de Chardin, Guo Moruo, Zhou Zuoren, Yu Dafu, Jean Baudrillard and others, as well as contemporary scholars of deep time (e.g. Robert MacFarlane). Through close attention to their rhetoric, images and ideals, this 200-level course will allow students to identify a range of discourses through which writers and others theorized human modernity and grounded major artistic, political or pseudoscientific projects. Whether understood as mythical, universal, romantic, national or otherwise, the search for humanity’s prehistories was inextricably tied to an evolution of modern imaginaries, fictions and desires. Prerequisite: GPS. Fulfillment: Humanities Major Advanced Course.

LIT-SHU 250

Love and Hate in the Time of Dragons

The European Middle Ages remains a common subject in popular culture, often as a setting for fantasy, romance, Arthuriana, warfare, and adventure. This fascination endures, in large part, because the period in question captures our imaginations with its mythical creatures, legends of chivalry, codes of honor, and damsels in distress. But at the heart of this reimagined world that has become so central to a collective cultural consciousness are the literature and events that inspired it. In medieval literature we find much more than dragons, manticores, King Arthur and his knights: we find the foundations for love, sexual relations, marriage, as well as the seeds of bias, exclusion, and persecution that endure into the twenty-first century. And while the Middle Ages did not invent these concepts, we can clearly trace a direct line back from the present to the shape they took during the 11th, 12th, and 13th centuries in the medieval West. This course begins with troubadour poetry as the foundation of ‘courtly love,’ a literary topos that continues to be proliferated in television, film, novels, and popular song. It examines the troubadours’ role in shaping and gendering sexual desire, passion, and in amor. We then turn to chivalric romance, where the concept of courtly love flourished in the adulterous adventures of knights and ladies— for true love and passion could only exist outside of marriage. In the second half of the course, we turn to another vestige of the medieval past by examining what the scholar Robert I. Moore has called “the formation of a persecuting society.” We will look at how the Third and Fourth Lateran Councils sought to marginalize Jews, Muslims, and lepers, among others. We will read crusade chronicles, memoirs, and poetry that reflect and contribute to the growing culture of categorization and exclusion that emerged. Through class discussions and in-class activities, we will explore the connections between contemporary expressions of love and hate with their medieval origins. Prerequisite: None. Fulfillment: Humanities Introductory Course (18-19: Topic Course).

LIT-SHU 280

Empire and Literature in 19th Century Britain

This course examines the historical and poetic dimensions of nineteenth-century British imperialism with a focus on the literature of the romantic period. As we explore the connections and tensions between imperialist politics and romantic aesthetics, we will follow three paths of inquiry: 1) how did empire inform the cultural and literary perspectives of the time, 2) what were the historical models and lineages empire was associated with both in political and literary discourses of the period, 3) what definitions empire and imperialism gained in romantic imagination, and how do they inflect the notions and concepts regarded quintessentially romantic such as the sublime? We will seek answers to these questions by returning to the landscape of the romantic period in a comprehensive and inclusive way, reading the works of marginalized authors alongside their rather widely studied contemporaries. Prerequisite: GPS. Fulfillment: Humanities Advanced Course (18-19: Topic Course).

PHIL-SHU 40

Ethics

Examines fundamental questions of moral philosophy: What are our most basic values, and which of them are specifically moral values? What are the ethical principles, if any, by which we should judge our actions, ourselves, and our lives? Prerequisite: None. Fulfillment: Humanities Introductory Course (18-19: Critical Concepts/Topic Course).
PHIL-SHU 70
Logic
This is an introductory course in formal logic. No prior knowledge of logic, mathematics or philosophy will be assumed. We will study a number of logical systems, and learn some methods for producing derivations and determining validity in these systems. We will also learn how to translate sentences and arguments from ordinary language into these systems, and examine some applications of logic to traditional philosophical problems.
Prerequisite: None. Fulfillment: CORE AT; Humanities Introductory Course (18-19: Survey Course).

PHIL-SHU 80
Philosophy of Mind
This course is an overview of the philosophy of mind. Topics may include the question of how to formulate physicalism about the mind; an examination of behaviourism, the identity theory, and functionalist theories of the mind; the prospects for integrating consciousness and mental content within a physicalist worldview; and the problem of mental causation. Prerequisite: None. Fulfillment: Humanities Advanced Course (18-19: Critical Concepts/Topic Course).

PHIL-SHU 90
Philosophy of Science
This is a survey course in general philosophy of science. Our topics include: Is scientific knowledge different from other forms of knowledge? Should the history of science be seen as an ever-increasing advance of knowledge? Given that most scientific theories have turned out to be false, are we justified in believing that our current theories are true? What are scientific explanations, and what makes an explanation better than another? Do the laws of nature govern the world or simply encapsulate some interesting patterns in the world? What is the relationship between more and less fundamental scientific theories? We will examine these questions through readings drawn from both the history and philosophy of science. Prerequisites: None. Fulfillment: CORE STS; Humanities Advanced Course (18-19: Topic Course).

PHIL-SHU 91
Philosophy of Biology
This class is an introduction to philosophy of biology focussing on issues connected with the nature and scope of biological explanations. How much does natural selection explain about evolution, and how does it explain? How much do genes explain about development, and how do they explain? No prior philosophy of science or biology will be assumed. Prerequisite: None. Fulfillment: CORE STS; Humanities Interdisciplinary/Advanced Course (18-19: Topic Course).

PHIL-SHU 101
Foundations: What is Philosophy?

PHIL-SHU 105
Introduction to Chinese Philosophy
This course is an introduction to classical Chinese philosophy. We will focus on three major philosophy traditions in the pre-Qin period China: Confucianism, Mohism, and Daoism. Many of the ideas in these three traditions have shaped the last two thousand years of Chinese—and to a large extent, Eastern Asian—culture. We will read primary texts as well as some secondary literature. The primary texts include: The Analects, Mengzi, and Xunzi from the Confucian tradition, Mozi from the Mohist tradition, and The Daodejing and Zhuangzi from the Daoist tradition. We will discuss issues in ethics, political philosophy, epistemology, and metaphysics in classical Chinese philosophy. We will also discuss the relevance of classical Chinese philosophy to contemporary philosophy and psychology. Prerequisites: None. Fulfillment: CORE HPC or IPC; GCS Chinese History, Society, and Culture; Humanities Introductory Course.

PHIL-SHU 107
Great Works in Philosophy
This class centers on close reading and discussion of classic philosophical texts. In this course, we will start with the ancient Greek philosophers whose work shaped the debate in European and Middle Eastern philosophy for millennia, and which has come to influence, in some way or another, nearly all contemporary philosophy. We will read some shorter Dialogues by Plato as well as the entirety of Plato's Republic. We'll then read Aristotle's Categories and de Anima (or "on the Soul"), and then the work of the Medieval Islamic philosopher, Ibn Sina, working in the Aristotelian tradition. After that, we'll see how these debates developed over time and were reflected in Descartes' Meditations on First Philosophy, David Hume's Enquiry into Human Understanding, and Immanuel Kant's Prolegomena to Any Future Metaphysics. Prerequisite: None. Fulfillment: Humanities Introductory Course (18-19: Survey Course).
PHIL-SHU 110

Traditional Chinese Political and Legal Philosophy

China in the so-called pre-Qin period (770 B.C.E.-221 B.C.E.) experienced a profound political transition. Competing schools of political philosophers offered proposals to restore order, which would lay the foundations of the political and legal framework for traditional China in the next 2,000 years. The so-called “Legalists” were advocates of the rule of law, although critics claim that they were actually advocates of the rule by law. Early Confucians criticized the Legalist approach and proposed the rule of virtue, although this proposal has often been blamed for the lack of the spirit of law in traditional and contemporary China. Both schools advocated an equality-based meritocracy, but they differed on what should be considered merits. In this course, we will examine some primary texts by the Legalist philosopher Hani Fei Zi and some early Confucians (mostly Confucius and Mencius) in order to understand their general legal and political philosophy. We will also investigate how they treated particular legal issues such as the conflict between the interest of society and the interest of the law, laws of international relations, etc. To help us understand the implications and the influences of these philosophical ideas, we will also look into some real legal codes and legal judgments in traditional China. Through these studies, I hope that not only can we understand the legal philosophies of these thinkers and how they influenced traditional Chinese legal practices, but also see their relative merits and shortcomings to each other and to Western legal ideas. Prerequisite: GPS. Fulfillment: Core Curriculum SSPC/HPC or IPC; GCS Elective Chinese History, Society, and Culture; Humanities Advanced Course (18-19: Topic Course).

PHIL-SHU 115

Ethics and Society

This class introduces students to the methods of contemporary analytic philosophy through the study of selected moral, social, and political topics. Our focus will be on political authority, social justice, legitimacy, punishment, and justifiable power. We will consider questions such as: What justifies the existence of civil government? What are the key elements of social justice? When, and why, should we tolerate mistaken, and perhaps harmful, views held by others? Should harmful speech be permitted where harmful actions would not be? What powers does a legitimate government have? What could justify punishment? What light do different philosophical views of punishment shed on the phenomenon of mass incarceration in the US context? Do we have a duty to obey the law, and if so, what is the source of that duty? Does the duty extend to unjust laws? When we protest against unjust laws, must we always act civilly or peacefully, or can uncivil protest, and even rioting, be morally justified? We will be especially interested in discussing how the often quite abstract arguments and principles defended by political and legal philosophers apply to the concrete context of a society. Prerequisite: None. Fulfillment: Humanities Introductory Course.

PHIL-SHU 130

Philosophy of Technology: Thinking Machines

This course aims to train students to think philosophically about our rapidly changing—and ever more intimate—relationship with machines. We focus in particular on the following subjects: artificial intelligence, robots, cyborgs, automation and science fiction speculation. Prerequisite: Students must have completed one full year of study. Perspectives on the Humanities (POH). Fulfillment: Humanities Advanced Course.

PHIL-SHU 202

Epistemology and Imagination

In both the philosophy of mind and epistemology, imagination is usually contrasted with perception. In the first part of this course, we will look at the differences and connections between them. How do imagination and perception differ in their phenomenal character? Are they clearly separate? What makes perception capable of giving us justified non-modal beliefs about the external world, and what lessons can we learn from the former discussion about imagination? Can imagination give us justified non-modal beliefs? In the second part of this course, we will examine various other questions in the epistemology of imagination, including the role of imagination in thought experiment, the power of imagination to justify modal beliefs, and, if there is time, difficulty in imagining fictional worlds that we take as morally deviant. Prerequisite: GPS. Fulfillment: Humanities Advanced Course (18-19: Topic). Fulfillment: Humanities Advanced Course (18-19: Topic Course).

PHIL-SHU 203

Epistemology and Memory

We seem to form beliefs based on memory or retain beliefs through memory all the time. But what makes our memory beliefs rational? Does memory only preserve rationality that is gained from other sources, such as perception, or can memory generate new rationality? Recent empirical research suggests that memory is constructive: memory can incorporate contents other than the original inputs before or at retrieval, and some research shows that the incorporated contents can come from our cognitive states. How do these new empirical findings shape our epistemological discussion of memory? Moreover, there are interesting connections between memory and imagination, which we will also explore in this course. Prerequisite: GPS. Fulfillment: Humanities Advanced Course (18-19: Critical Concepts/Topic Course).

PHIL-SHU 220

Philosophy of Law

Law is present in almost every aspect of our lives. It requires us to stop at the red light and pay taxes. It empowers us to acquire properties, make binding contracts, form political associations, and vote for our representatives. On what basis does law claim this ubiquitous authority to structure our lives? What principles should inform the content of law? Those are the questions that we will grapple with together in the class. The class is divided into two
units, regarding private and public law. By private law, I mean law that governs the interaction of private persons. In the first unit, we will look into the philosophical foundations of and vital doctrines in the prominent branches of private law, including property, contract, and tort law. By public law, I mean law that governs the functioning of the government and the interaction between the government and the people who are subject to its power. In the second unit, we will look into critical principles that constitute the backbones of liberal democracy (especially in the US context). We will first attend to constitutional law, looking into the justification (or the lack thereof) for democracy, constitutional rights, and juridical review. We will then turn to another domain of public law, namely criminal law. We will consider the philosophical justification for criminal punishment and controversial issues of criminal justice under non-ideal conditions. By the end of the semester, you will have developed a comprehensive picture of the law's empire and acquired academic tools to engage with it critically. Prerequisite: GPS. Fulfillment: Humanities Introductory Course (18-19: Survey Course).

PHIL-SHU 255
Habermas and Chinese Modernity

German philosopher Jürgen Habermas is arguably one of the most important thinkers in our times; reading his critical justification for modernity with reference to a country that he said he had little knowledge of can probably shed new light not only on topics of society and culture, but also on ideas such as action and reason, morality and ethics, and knowledge and faith. Prerequisite: None. Fulfillment: Humanities Advanced Course (18-19: Topic Course).
Design Your NYU Shanghai is a first-year course to help you make the most out of your college experience. You’ll be introduced to design thinking as a creative approach to explore majors and interests, craft global opportunities, and engage in intercultural connections. This action-oriented course uses rapid prototyping and reflection activities to ignite personal growth as you navigate this transformative time of your life.

**IMBX-SHU 101 Life Design**

This course is about designing your life. What if you used the same innovation principles that startups use and applied them to your own lives? Students are introduced to design thinking as a framework to process their college experience and explore life after graduation. This course will use rapid prototyping methods to test out career interests, engage in behavior design, and ideate on multiple futures. The course will be delivered in a studio setup with in-class design workshops, group discussions, personal reflection, individual coaching and field trips. Prerequisite: None. Fulfillment: IMA Major Electives; IMB Major Business Elective/Interactive Media Elective; Business and Finance Major Non-Finance Electives; Business and Marketing Major Non-Marketing Electives.

**IMBX-SHU 103 Understanding Financial Technology**

“How would you like to pay?” A simple question may provoke diversified answers in the digital age. The financial applications of digital technologies, or so-called fintechs have engendered many alternative forms such as QR codes, mobile apps, and Bitcoin for financial activities including payment, loans, and investment. What technologies make these innovations possible? What are the aesthetic norms embedded in fin-tech app designs? How do the fin-tech companies interact with banks, policy-makers, and regulators? While Ant Financial and Tencent Finance make China the leader of fin-tech innovation, how does the global map of fin-tech innovation look like? After all, how have fin-techs re-shaped people’s everyday life, and perhaps will reform human being? Through a weekly three-hour meeting, this course is to make sense of fin-techs from a wide variety of perspectives. Integrating lectures with workshops and company visits, this course will equip students with critical thinking and practical skills that allow them to dialogue with various actors, such as computer programmers, project managers, investors, as well as academic intellectuals. Prerequisite: Junior Standing. Fulfillment: IMA Major Electives; IMB Major Business Elective/Interactive Media Elective; Business and Finance Major Non-Finance Electives; Business and Marketing Major Non-Marketing Electives.

**IMBX-SHU 104 Communicating for Influence**

Communication sits at the core of all human interactions and is highly valued in workplaces. Beyond the minimal goal of articulating and presenting one’s ideas effectively, communication also involves building empathy, cultivating an eye for detail, developing awareness of goals and contexts, and integrating critical and reflective thinking. How can we communicate our own projects to different audiences? Why should other people care? What types of media can we use and how do we know they are effective? How can collaborative and participatory elements help to improve engagement levels? This course aims to guide students to review and create their own learning profiles as they learn to engage a diverse range of targeted audience. Prerequisite: Not open to freshman. Fulfillment: IMA Major Electives; IMB Major Interactive Media Elective.

**IMBX-SHU 105 Introduction to the Technology Innovation Process**

This course is for anyone who wants to be involved in technology innovations — not only inventors, but everyone who is interested in initiating, implementing, translating, and commercializing technology innovations. It will introduce the full process for the identification, invention, and implementation of new technologies. The lectures will address three major components of the innovation process: Needs finding and screening, Concept generating and screening, and Strategy development and business planning. With case studies on innovative products from around the world, successes and failures, practical advice, and ‘Getting Started’ discussions, students are encouraged to learn from real projects. The brainstorm sessions and group projects are designed to encourage students to apply important lessons to their own ideas. At the end of this course, students will gain a deep understanding of the entire technology innovation process and start work in developing or using technology innovations. Prerequisite: None. Fulfillment: IMA Major Electives; IMB Major Business Elective/Interactive Media Elective; Business and Finance Major Non-Finance Electives; Business and Marketing Major Non-Marketing Electives.

**IMBX-SHU 106 Introduction to Media Industries and Institutions**

The traditional understanding of media industries reminds us of mass media such as TV, radio, newspaper etc. Digital technologies, however have reshaped how media is made, consumed, and comprehended by increasingly fragmented audience groups. Self-made public accounts, search-based video streaming platforms, and social media apps refreshed our vision of media and challenged the existing ways of running a successful media. How to develop a thorough understanding of the rapidly changing market? This course is an introduction to the media industries, with a particular focus on the institutional forces (i.e., market structures, law and regulation, technological advancement, and audience dynamics) that shape the content and forms of emerging media. Combining lectures and guest talks, this class will make sense of the key concepts, professional terms, and business logics embedded in the production and operation of the global media industries. Furthermore, we will take case studies approach to examining the economic and social influences of media companies in specific contexts, particularly China, U.S., and
U.K. These knowledge, together with the analytical skills that the students will acquire through in-class discussions, will allow them to comprehend and cope with the interplay among technology, market forces, and regulators in a wide array of media companies, including television, film, news, social media, video streaming, and the media-related tech businesses. Prerequisite: None. Fulfillment: IMA elective; IMB Business Flexible core course.

IMBX-SHU 108
**Experience Studio**

Experience Studio engages students in an immersive learning experience that brings them outside the classroom and into the community. This project-based course provides an opportunity for students to learn about experience design in practice. They will (1) engage in field experience with a community partner, exploring the theoretical and practical underpinnings of experience design through readings, guest talks, field trips, and reflective practice. Drawing from their field research learnings, students (2) produce a project that addresses a real-world challenge, through processes such as rapid prototyping, user testing, and customer research (informed by skills and insights from the initial experience). This course can be taken repeatedly as it will be offered by different instructors in collaboration with different course partners each semester. For the upcoming semester's offerings, please visit: http://creativityandinovation.shanghai.nyu.edu/experiencestudio. Prerequisite: None Fullfillment: IMA/IMB elective. (open to all; no prerequisites)

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IMBX-SHU 201
**The Minimum Viable Product: The Lean Launchpad**

This class is based on the entrepreneurship methodology of Steve Blank, "The Lean Launchpad" with some changes to adapt it to our specific circumstances. The methodology enables to test and develop business models based on querying and learning from customers. This is a practical class – essentially a lab. Our goal, within the constraints of a limited amount of time, is to help you find a repeatable and scalable business methodology for your startup. This will allow you to build a company with substantially less money and in a shorter amount of time than using traditional methods. Rapidly iterate your product to build something people actually want. You will build minimum viable products (MVPs) weekly to avoid hypotheticals and get real customer feedback that you can use to iterate (small adjustments) or pivot (substantive changes) faster. Prerequisite: Junior to Senior only (exceptions granted on a case by case basis). Fulfillment: IMA/IMB Elective.

IMBX-SHU 211
**Design Thinking (Formerly BUSF-SHU 211)**

Design Thinking is a theoretical, methodological and practical framework that has the potential of bringing about socially responsible innovation. This course will introduce the core concepts and toolkits of design thinking as the foundation of innovative thinking and practices. It requires you to step out of your comfort zone and to examine and challenge your own assumptions. Critical thinking, teamwork, and empathy are the three pillars of this course. Prerequisite: None. Fulfillment: IMA Major Electives; IMB Major Electives; Business and Finance Major Non-Finance Electives; Business and Marketing Non-Marketing Electives.

IMBX-SHU 232
**Entrepreneurship Experienced (Formerly 232)**

This practical course will introduce students with ideas and frameworks to quickly test, iterate and validate start-up business ideas. The course will explore questions such as: How can we validate an opportunity? What is a "value proposition" and how critical is it? What are the most popular business models and can new ones be invented? Why are investors constantly looking for "Product Market Fit"? Why do "Customer Cost of Acquisition" and "Lifetime Value" matter? The course will also provide an opportunity to apply these newly learned methodologies with one project. For this projects students will work in teams of two to three students. For their projects, teams will be experimenting with customers' feedback, iterating business propositions and identifying key traction factors. At the end of their projects, students will present and demo their business idea to their peers and an external audience of entrepreneurs/business managers in Shanghai. Prerequisite: Sophomore to Senior only (exceptions granted on a case by case basis) Fulfillment: IMA Major Electives; IMB Major Electives/Interactive Media Elective; Business and Finance Major Non-Finance Electives; Business and Marketing Major Non-Marketing Electives.

IMBX-SHU 241
**Creative Learning Design**

This practical, hands-on course will explore questions such as: How can we design engaging, creative learning experiences that are relevant to the cultural goals and needs of today's youth in China, while laying the foundation for creative learning for the workforce of tomorrow? What are engaging, effective creative learning resources, and how are they best implemented in Chinese learning settings? How can we take advantage of young people's near ubiquitous love of the arts to facilitate creative learning? In this course, students will work in teams to design digital learning resources and experience designs at the intersection of music, coding, arts, and technology. The course will begin with an introduction to emerging trends in learner engagement and design-based research, especially related to web- and mobile-based musical experiences and principles of making music with new media. Innovations in applications of musical interaction, interactive technologies, user-centered design & engagement, scaffolded learning, creative learning, pedagogies of play and making, and educational entrepreneurship will also be explored. Students will work together in teams and paired with a partner audience of learners and teachers in Shanghai drawn from local and regional international schools, ed-tech startups, and cultural partners. Together they will assess the needs and opportunities of partner students and teachers, and engage in a two-stage iterative, reflective co-design process designing custom learning resources and experience designs with their partner end users. At the end of the course, students will present and demo their learning resources as part of a public showcase to an external audience of partners, educators, technologists, musicians, entrepreneurs, and experience designers.
in Shanghai. Prerequisites: None. Fulfillment: IMA Major Electives; IMB Major Business Elective/Interactive Media Elective; Business and Finance Major Non-Finance Electives; Business and Marketing Major Non-Marketing Electives.

**IMBX-SHU 254**  
**Introduction to Mindful Product Management**

Technology products and services are increasingly a huge part of how businesses reach their end-customer and Product Managers (PMs) are the ones to lead teams to build software that solve real problems. This course is designed as an introduction course of how PMs do this across a variety of contexts to evaluate customer needs, translate needs into functional requirements, prioritize different aspects of development, work with cross-functional teams, launch a product and create a holistic vision of how customers experience the product. This course will focus on lectures, discussions, case-studies and hands-on exercises that replicate a typical product process at a startup, tech or non-tech company. This course equips students with the mindset, tools, frameworks to mindfully discover, design and build things that make an impact and meet the needs of real humans. We will cover both core product thinking, and also how to translate that into practical ways to make decisions and build great products. Prerequisite: None. Fulfillment: Interactive Media Business Elective; Interactive Media Arts Elective.

**IMBX-SHU 9501**  
**Real Time Media: Concepts and Production | Realtime**

This course explores the disruptions and creative possibilities that realtime emerging media provides through the lens of learning how to design, create, produce and perform in realtime. Students will be learning how to design and produce for realtime interactive audiences, understand the modern streaming media pipeline, the fundamentals of virtual production, digital content creation and the basics of game engines and other software - all in the service of delivering a more engaging and intimate connection between audience and performer. Students will design and perform 2 distinct realtime performances as well as work together with peers to conceptualize, design and produce a short realtime 'pilot' using the tools and techniques you've learned in the first two projects. Prerequisite: None. Fulfillment: Interactive Media Business Elective; Interactive Media Arts Elective.
Interactive Media Arts

INTM-SHU 101
Interaction Lab

In this foundation course students will be asked to think beyond the conventional forms of human computer interaction (i.e. the keyboard and mouse) to develop interfaces that consider the entire human body, the body’s capacity for gesture, as well as the relationship between the body and its environment. Students will learn the fundamentals of electronics and programming as they build projects using the Arduino microcontroller platform. Arduino is a small computer based on open source hardware and software. When used in conjunction with various sensors and actuators, Arduino is capable of gathering information about and acting upon the physical world. In addition to these physical computing techniques, students will also learn to harness the methods of traditional computation. The fundamentals of programming will be explored using the Processing programming language. Processing has a simplified syntax and an approachable computer graphics programming model, making it an ideal platform for first-time programmers. Students will gain a deeper appreciation of the expressive possibilities of computation as they learn to author their own software and systems and not simply use off-the-shelf solutions. Additional topics will include algorithmic drawing and animation techniques, digital modeling and fabrication, data exchange, manipulation, and presentation, as well as control of images, audio and video, including computer vision techniques. Structured weekly exercises are aimed at building specific skills, however students are free to pursue their own diverse interests in their midterm and final projects. Prerequisite: None. Fulfillment: CORE AT; IMA Major Other Foundation; IMB Major Emerging Media Foundation.

INTM-SHU 103
Creative Coding Lab

In this foundation course students will learn the fundamentals of computation, software design, and web technologies, through a series of creative projects. The course is intended to equip students with the skills to develop artistic and business projects that include a significant computational component. Topics such as variables, functions, components, and functional and reactive programming will be brought together to create interactive applications, generative art, data visualization, and other domains. Within the framework of these creative projects students will develop a greater understanding of how computer programs operate, be exposed to various concepts used to create experiences and interactions, and become more familiar with some of the technologies that constitute the internet. This course is intended for students with no prior programming background. Prerequisite: None. Fulfillment: CORE AT; IMA Major Other Foundation; IMB Major Emerging Media Foundation.

INTM-SHU 110
Application Lab

Application Lab is an intensive project-driven course where students explore current challenges and opportunities at the intersections of emerging media and innovation through the lenses of design, prototyping and innovation. The course seeks to help students understand how these high-level concepts intersect with skills to form the basis for new applications of technology and human industrial art. At the end of this course, students will be able to think critically and holistically about not only what makes innovations possible but will also how to utilize emerging media technologies and ideas to bring innovations into the world that respect and acknowledge the values of design, iteration and innovation. Prerequisite: None. Fulfillment: IMA Major Other Foundation/Electives; IMB Major Emerging Media Foundation.

INTM-SHU 120
Communications Lab

In this foundation course students will explore the possibilities of emerging media by successively producing projects that make use of digital images, graphics, audio, and video. The course is designed to provide students with a framework to effectively communicate and tell stories through digital means. Students learn through hands-on experimentation in a laboratory context and the principles of interpersonal communication, media theory, and human factors will be introduced in readings and investigated through discussion. Adobe Creative Cloud and other relevant software applications will be examined to establish a diverse digital toolkit. Both traditional and experimental outputs will be explored. Weekly assignments, group and independent projects, as well as documentation of projects will be assigned in each of the core areas of study. Prerequisite: None. Fulfillment: IMA Major Other Foundation; IMB Major Emerging Media Foundation.

INTM-SHU 125T
Digital Arts and New Media

This course investigates digital art and new media from creative, theoretical, and historical perspectives. We will examine the paradigm shift resulting from the rise of digital art and its expansion as well as explore current ideas, creative strategies, and issues surrounding digital media. The topics of study will include digital image, digital sound, net art, systems, robotics, telematics, data art, and virtual/augmented reality. The course aims to provide students with the means to understand what digital media is, and establish their own vision of what it can become, from both a practical and a theoretical perspective. The course will consist of lectures, field trips, and small studio-based practices. Prerequisite: None. Fulfillment: IMA/IMB Elective.

INTM-SHU 129
Industrial Design in Action

Industrial Design in Action is a course that will help you bridge the gap between your ideas and their physical form. From initial research to conception, you will practice and apply different design methodologies that lead to creative and innovative ideas; acquire a fundamental understanding of form, function and design language; and utilize sketching and visual storytelling to communicate a message and features of a compelling product. In addition, you
will become familiar with various Computer Aided Design (CAD) softwares; explore different types of materials for different uses and applications; and experiment with a myriad of fabrication techniques, from basic hand tools to advanced digital fabrication, you will learn to use the right tool for the job. Altogether these skills will enable you to go from prototype to a finished product. In a nutshell, this course is about designing and fabricating things we love. Prerequisite: Interaction Lab or Communications Lab or Application Lab. Fulfillment: IMA/IMB Elective.

INTM-SHU 138/138T-B
Responsive Environments: Designing Interactive, Sentient, and Intelligent Spaces

In this course, students focus on the study and development of responsive environments, framed within a contextual and critical exploration of the architectural space as a cultural, social and technological phenomenon, and also on the application of practical scenarios for interaction, sentience, and intelligence. Through the making of creative media designs and physical prototypes, students aim to demonstrate how our habitats/spaces/architectures can facilitate novel frameworks for experiencing and living. Prereq for INTM-SHU 138T is Creative Coding Lab OR Interaction Lab OR Application Lab OR Media Architecture. Fulfillment: IMA/IMB Elective.

INTM-SHU 151
Learning with Turtles

Learning with Turtles explores programming languages, systems, and activities designed to help learners in computational environments. Starting from a constructionist principle that systems designed for beginners must be able to embody the most powerful ideas in computing, we master some of those systems, explore how those have been designed, and engage in contemporary debates. The environments we learn with include Turtle Geometry, Craft Computing with Textiles, Modelling, and other interactive projects using programming and modelling systems such as Snap!, TurtleArt, Turtlestitch and NetLogo. Individual and group projects involve students in advancing their computational knowledge and skills and provide opportunities to design for others, to teach, to study learning and expertise, and present projects in community and public forums. The course is fundamentally about ideas, and how some powerful ideas from computation can empower a learner to be a better creator and problem solver. Writing, presentations, and discussions will emphasize reflection on our own learning within the course. Prerequisite: None. Fulfillment: IMA Major Electives; IMB Major Interactive Media Elective.

INTM-SHU 185T
Interactive Fashion

Technology is allowing us to see our clothing as an extension of our body. An extension acting as a system that reacts, collects information, and augments our modes of interactions with spaces and people. Historically, what we wear has been used to express our identity as well as complex issues related to class, race, ethnicity, gender, and sexuality. Leila Brillson states: “What you wear is a part of your identity, and identity is, well, pretty darn political”. Interested in fashion as a form of expression, artists, designers, and architects are now crossing disciplines to explore the realm of fashion. Utilizing computation design, digital fabrication, and electronics they are proposing new wearables to speculate on the future of human existence by exploring the limits of the body. In this course, students will research and work with soft electronics and robotics integrated into textiles to make it possible to add controlled behavior and interactivity with their immediate environment. They will study nature and design wearables, understanding them like a second skin, as well as a soft interface able to gather information and transform itself. Students will also explore the complex geometries and designs allowed by digital design and manufacturing. Furthermore, this course will engage with both theory and practice, and introduce students to a specific design sensibility and methodology in order to design wearables reflecting on religious, social, and political issues. Syllabus: https://tinyurl.com/fb3bw5b5 Prerequisite: INTM-SHU 101 Interaction Lab or INTM-SHU 103 Creative Coding Lab. Fulfillment: IMA/IMB Elective.

INTM-SHU 187T
E-textiles

E-textiles spans the worlds of craft, electronics, and computing. We will build skills in the often surprising world of using soft, stretchy or low tech materials where one might have expected hard, dimensionally stable, or high tech materials and vice versa. Weekly projects will have requirements for craftsmanship and design, and will build skills in integrating electronics and computing with soft items and wearables, making sensors and displays, tailoring and costuming, and creating your own materials. You will gain familiarity with materials and with hand and machine crafting skills. Weekly readings for discussion will be required, and presentations and guest speakers will offer you ideas and critical challenges. Pre-req: None. Fulfillment: IMA/B Elective.

INTM-SHU 194T
Global Media Cultures

Since the 1990s, theories of globalization have emphasized two main processes. One is the continuous time-space compression that is now felt in every aspect of human life; the other is the rapid movement and circulation of media, commodities, humans and capital. These previous works raise key questions for media studies: What are the roles of media in various global formations? Where and how do we encounter globalization/global media? This course will examine these questions with the following focuses: The entangled relation with the national, the regional and the local in the mediated imagination of the global; The ways media industries adapt to challenges of the global conditions; how global media practices enact and create different social desires (of mobility) and senses of belonging. Prerequisite: sophomore standing. Fulfillment: IMA/IMB Elective.
INTM-SHU 195
After Us: Post-human Media

What is the place of human creativity, agency and intelligence in complex technical networks? This class aims to build a foundation for studying how automation, artificial intelligence, robotics, digital image production, predictive software, and eco-technologies signal the ascent of a posthuman society. It provides a selection of texts and case studies that introduce basic philosophical and sociological questions about posthuman technologies and support creators, writers and thinkers in conceptualizing the posthuman nature of new media. The class is a combination of lectures and writing workshops. Pre-requisite: None. Fulfillment: CORE STS; IMA/IMB elective.

INTM-SHU 196T
After Earth: Technology & Ecology

This class focuses on the history and theory of ecology-related digital media, emerging technological solutions to the environmental crisis, and cultural imaginations that address the possibility of human extinction and ecosystem collapse. Zooming in on both luddite and futurist proposals for post-carbon futures across the global political and cultural spectrum, the class discusses emerging technologies in scientific and popular discourses about ecological futures. From geo-engineering to terraforming, space colonialism, genetic engineering, and other scenarios that relate to the technological survival of humanity in fraught environmental conditions, it aims to take students to the forefront of contemporary technological imaginations related to our future on (and off) this planet. Prereq: None. Fulfillment: IMA Major Electives; IMB Major Interactive Media Elective.

INTM-SHU 200
Topics in IMA: Algorithmic Cultures

Prerequisite: None. Fulfillment: Topics in IMA: Algorithmic Cultures: IMA/IMB elective.

INTM-SHU 201
Expanded Web

This course draws from net art, interface design, and post-digital / post-internet practices to explore interactions that bridge screen and physical. Students are led to conceptualize and develop bespoke "interfaces" (in the widest sense), in which either aspects of the web are reflected in the physical world, or – conversely – the habitual mode of browsing is being updated in ways that capture the user's physical and bodily presence. A reflection of the medium web, its vernacular, and practical daily use is the starting point of this project. The students' work is additionally being informed by analysis of select examples from art and design, exemplary for ways of re-framing the technical everyday. This course will make use of web technologies (p5.js), and physical computing techniques – and introduce students to various ways those can be technically, and conceptually, combined. Prerequisite: Interaction Lab or Creative Coding Lab. Fulfillment: IMA/IMB Elective.

INTM-SHU 202
Media Architecture

Architecture has always been considered as an immediate extension of the human civilization, and its connection with state-of-the-art technologies has always been essential. In our current highly mediated and augmented environments, architecture shifts from static, solid, and predefined, to a fluid, interactive, and ever-changing. Computational, interactive, and media technologies challenge our understanding of what architecture is, redefining our engagement with exterior and interior spaces. The course investigates the area of media architecture from a contextual and critical perspective, examining and implementing in theoretical and practical scenarios current emerging trends. Students are expected to develop a comprehensive understanding of media architecture, to thoroughly investigate its media-scape (including motivations, social implications, technological requirements), and to develop installation work that utilizes contemporary media development practices and demonstrates artistic, technological, and scientific rigor. Prerequisite: None. Fulfillment: IMA Major Electives; IMB Major Interactive Media Elective.

INTM-SHU 203T
Intro to Movement Practices

In this course we combine both analytic and embodied learning about human movement practices. We will learn selected computational and physical movement sensing techniques (webcam-based, wearable-based, and commercial motion capture technologies). We will combine guest and student-led presentations and activities that involve us in movement while learning structures and history of selected movement practices such as dance and circus arts. We will do four sprint projects of approximately one week in length (each semester projects differ, but may include examples such as PoseNet/MoveNet, Creating a Fitness Tracker, Rhythm Game, Non-humanoid MoCap avatars), alternating with work on a class choreographic project and individual research and writing of a paper on a movement practice. Prerequisite: None. Fulfillment: IMA/B Elective.

INTM-SHU 204
Critical Data and Visualization

Data is at the heart of the increasing role technology has in our lives. Data collection and algorithmic processing are not only central to recent technical breakthroughs such as in AI and automation but have created new economic paradigms where data equals value and shape political approaches to power and control. Decisions based on algorithms affect society at large whether it’s changing the way we transport and distribute goods, or influencing the things we buy, the news we read or even the people we date. The world that algorithms see is data. For the average person, however, data is seldom more than an abstract idea. So what exactly is data? How is value extracted
from it? And why should we care? How can we ethically balance the positive uses of data-driven systems with the threats they pose to discriminate and infringe basic human rights? This class seeks to untangle some of these issues practically and theoretically. Prerequisite: Creative Coding Lab. Fulfillment: CORE AT; IMA/IMB elective.

INTM-SHU 205
What is New Media?
This course will explore the fundamentals of new media scholarship. Together, we will review and engage with different theories of emerging media in its social, cultural, political, and historical contexts. Students will be able to research, think and write critically about some of the central debates in media studies, including new media forms and aesthetics, issues of gender, race, and labor, platforms, infrastructure and various emerging paradigms. Classes consist of theoretical readings, media example discussion, and writing workshops. Prerequisite: WAI (or co-requisite). Fulfillment: IMA Major Foundations/Elective; IMB Major Emerging Media Foundation/Elective.

INTM-SHU 214
User Experience Design
User experience design (UXD, UED, or XD) is the process of enhancing user satisfaction with a product by improving its usability, accessibility, and desirability provided throughout the user’s interaction with a product. The class is designed for those who are passionate about creating user-centered experiences with interactive media. Students are encouraged to empathize with users, engaging them to make informed design choices from prototype right through to project completion. Prerequisites: None. Fulfillment: IMA/IMB elective.

INTM-SHU 215
Machine Learning for New Interfaces
Machine Learning for New Interfaces is an introductory course with the goal of teaching machine learning concepts in an approachable way to students with no prior knowledge. We will explore diverse and experimental methods in Machine Learning such as classification, recognition, movement prediction and image style translation. By the end of the course, students will be able to create their own interfaces or applications for the web. They will be able to apply fundamental concepts of Machine Learning, recognize Machine Learning models in the world and make Machine Learning projects applicable to everyday life. Prerequisite: Creative Coding Lab. Fulfillment: IMA/IMB elective.

INTM-SHU 217
Make Believe
We live in an era of information where the information can be written, accessed, shared, and also eliminated with a single stroke. As a result, the objective “truth” is brought to a question. In the last decade, artists have been experimenting with the fakeness of the truth and the truthfulness of the fake by creating fake documents, staged marriages, an arguably authentic artifact, imaginary advertisements both historical and contemporary. What does it mean to tell the truth in the context of art? How does art cross the boundaries between the real and the fake, truthfulness and misrepresentation? This course will examine social engagement of art and how “truth” is treated, interpreted, and presented. The class will take a field trip to a propaganda museum, have readings and discussions, and analyze artists working with fiction as a medium in art making. Students will work on projects to construct believable reality through object making (3D fabrication) and narrative construction (audiovisual material). Prerequisites: Interaction Lab or Communications Lab. Fulfillment: IMA Major Electives; IMB Major Interactive Media Elective.

INTM-SHU 222
Introduction to Robotics
Since the beginning of civilization people have fantasized about intelligent machines sensing and acting autonomously. In this course we will discover what robots are, learn how to design them, and use simple tools to build them. Students will use open source hardware to explore sensors and electronics, as well as design and build robot bodies and actuators through a variety of digital fabrication technologies. Using a set of community developed tools, students will become familiar with concepts such as mechatronics, inverse kinematics, domotics and machine learning. No previous programming or electronics experience is necessary, however students will be guided through a series of design challenges that their robots should be able to accomplish. With an emphasis on experimentation, peer learning, and teamwork, the objective of this course is to share in the excitement of robotics by enabling students to make their own creations. By the end of the course, students will present a short research paper and documentation about their robotic explorations. Co-requisite or Prerequisite: Interaction Lab or Creative Coding Lab. Fulfillment: CORE ED; IMA Majors Electives; IMB Major Interactive Media Elective.

INTM-SHU 226
Artificial Intelligence Arts
Artificial Intelligence Arts is an intermediate class that broadly explores issues in the applications of AI to arts and creativity. This class looks at generative Machine Learning algorithms for creation of new media, arts and design. In addition to covering the technical advances, the class also addresses the ethical concerns ranging from the use of data set, the necessarily of AI generative capacity to our proper attitudes towards AI aesthetics and creativity. Students will apply a practical and conceptual understanding of AI both as technology and artistic medium to their creative practices. Prerequisite: None. Fulfillment: IMA Major Electives; IMB Major Interactive Media Elective.
Cultural heritage can be preserved by moving sequences, motion design and animation. The richness of heritage (performance, language and ritual) are inseparable parts of the cultural heritage. The narrative and messaging of tangible heritage (site, object, and structure) and intangible heritage (motif, icon, character, textile, wardrobe, music) are each conducted during one of two 75 minute classes per week. Prerequisite: Creative Coding Lab. Fulfillment: IMA Major Electives; IMB Major Interactive Media Elective.

**INTM-SHU 228/228T Digital + Sculpture**

This course investigates and illuminates the concepts and the aesthetic of kinetic sculpture and installation art in various forms from creative and historical perspectives. Students will explore performative sculptures and learn to work with space. This is a studio-oriented class with a strong physical basis in physical computing, woodworking, and readymades. Students will build upon their existing physical computing skills to create moving sculptures and installations. The course will examine kinetic sculpture through slides, artist lectures, videos, readings, a field trip and other materials. Prerequisite: Interaction Lab Fulfillment: IMA/IMB Elective.

**INTM-SHU 234 Rapid Prototyping**

Have you ever wanted to build a physical product but didn’t know where to start? Have you ever wondered how the objects you use everyday came to exist in the forms that they are? In a world that is becoming increasingly digital humans will also need physical interfaces to interact with these experiences. Rapid prototyping is one of the core tenets for the development of meaningful experiences and usable elements in physical products both for digital experiences and real world experiences. This course will introduce students to hands on development of physical prototyping for product development or for use in creating elements of physical art installation. We will through practical application explore how we might interact with rudimentary materials and how we will use them to address a series of fun challenges through rapid prototyping. Students will gain experience of how to translate these prototypes into CAD models for further refinement. These challenges will provide skills acquisition opportunities and culminate in a final challenge where students will in their learnings to create a physical prototype that solves a real world problem. Prerequisite: None. Fulfillment: IMA/IMB Elective.

**INTM-SHU 239 Digital Fabrication**

Digital Fabrication is the process of using design of modeling software to generate digital files which can then be physically produced through a variety of methods, including laser cutting, 3D printing and computer numeric control (CNC). The ability to fabricate directly from our computers or design files used to be an exotic and expensive option not widely available, but recent changes within this field have brought these capabilities to within our reach. In this class students will learn how to design and model for and to operate fabrication machines. Emphasis will be put on designing functional parts that can fit into a larger project or support other components as well as being successful on a conceptual and aesthetic level. In this class students will discover methods to design and model using computer aided design (CAD) software. We will then utilize computer aided manufacturing (CAM) software to generate instructions that various machines can follow to fabricate our designs. We will also look at methods for 3D scanning, data manipulation and conversion, mold making, as well as printed circuit board (PCB) fabrication. Elective Category: Art & Design Pre-req or Corequisite: Application Lab, Communications Lab or Interaction Lab. Fulfillment: IMA Major Electives, IMB Major Interactive Media Elective.

**INTM-SHU 242 Exhibition: Next**

Exhibition: Next is an exploration and observation of the fields of exhibition design and museum study. This class will explore how emerging and interactive technologies can be applied to a museum to enhance visitors’ experiences. The class discusses exhibition design, museum technologies, curatorial practices, art history, and studio art approaches. What is the definition of a museum today and how should it be experienced? What is the role of a museum in contemporary society? What is the social value of a museum nowadays? How does it engage with the audiences of tomorrow? Students will explore various museums, spanning from visiting local museums to browsing online museums. Taking specific questions upon each visit, students will write a trip report to reflect their observation in the museum from a unique and critical perspective. The research component is embedded throughout the semester, so students will propose a research topic at the beginning of the course. Then, they will start collecting materials, building objects, designing experiences, and writing a manifesto for their research project for the final exhibition. If possible, all assignments that serve the research topic can be curated in the final exhibition. After the midterm, the instructor will initiate a collaboration with a local organization to assign students a design challenge working in groups. By the end of the semester, the class will present a group show for students’ final project in a gallery space. Prerequisite: Interaction Lab Fulfillment: IMA Major Electives; IMB Major Interactive Media Elective.

**INTM-SHU 243 Introduction to Animation**

Tangible heritage (site, object, and structure) and intangible heritage (motif, icon, character, textile, wardrobe, music, performance, language and ritual) are unseparated parts of the cultural heritage. The narrative and messaging of cultural heritage can be preserved by moving sequences, motion design and animation. The richness of heritage...
 contents can be further disseminated and known by the dynamic media. This course aims to utilize animation and motion media to depict and preserve the richness of cultural heritage contents. 3D animation and motion graphics techniques will be addressed and applied to the storytelling. Students will be guided to research the Asian cultural heritage contents including the tangible and intangible heritage. They will further explore the visual design and production pipeline of animation. Visiting expert of interactive media design and intangible heritage performance will get involved to share the insights to the students. Prerequisites: None. Fulfillment: IMA/IMB elective.

INTM-SHU 247
Creative Game Design and Development

We have all played and enjoyed games, but how do people actually design and develop them? How to describe a game from a professional standpoint? What are the basic elements and structure in video game development? How do game designers create an interactive experience for the player? What about prototyping and iterating in development? This course explores these questions and others through playing, analyzing and making games over 14 weeks. Students will understand game not only as an entertaining production and business model but a form of interactive media impacting current life and future. Students will be introduced to game design concepts, emphasizing the development; paper and digital prototyping, develop iteration, interactive narratives design and embedment, object-oriented programming. 2D/3D game art design, sound effects composition and user testing. For the course project, students will work in teams and create games in multiple projects, from board game focusing on gameplay prototype to digital playable experience with creative game art designs. This course leverages Unity, a game engine that uses C# based programming language. Basic knowledge of any programming language will come in handy. Prerequisite: Creative Coding Lab or Interaction Lab or Introduction to Computer Programming. Fulfillment: IMA Major Electives; IMB Major Interactive Media Elective.

INTM-SHU 253
Creating Assistive Technology

This interdisciplinary project-based class focuses on the design, development, and use of technology that increases the quality of life of individuals of disabilities. Students will be introduced to various assistive technology and strategies, including no-tech and low-tech as well as software and online-based practices. This class features lectures, discussions, guest lectures, field trips, and project presentations by students. Software programming, physical computing, machine learning, and 3D fabrication will be introduced for developing an assistive device. Field trips of local facilities will be scheduled during the semester. They provide an off-campus real-world learning experience as well as an opportunity for students to interact with users of assistive technology in the local community. Students will participate in a team-based design project that identifies challenges for an individual of disabilities and create an innovative and useful assistive device to meet their needs. Prerequisite: Interaction Lab.

INTM-SHU 254
Nature of Code

The Nature of Code is an intermediate course based on Daniel Shiffman's The Nature of Code course at NYU ITP and was adjusted for undergraduate students. This course explores the fundamentals of programming, such as Object-Oriented Programming, and the application of simple principles of mathematics and physics in order to recreate natural behaviors in a digital environment. Prerequisites: This class uses p5js.org and requires Interaction Lab, Communication Lab, Application Lab, or similar programming background. Knowledge of other languages, such as Processing, three.js and OpenFrameworks, is also encouraged. Prerequisite: INTM-SHU 103 Creative Coding Lab. Fulfillment: IMA Major Electives; IMB Major Interactive Media Elective.

INTM-SHU 255
Topics in Business of Emerging Media: Re-inventing the Brand

Prerequisite: INTM-SHU 101 Interaction Lab or INTM-SHU 110 Application Lab or INTM-SHU 120 Communications Lab. Fulfillment: IMA/IMB elective.

INTM-SHU 257
Immersive Arts

This course aims to provide students with the means to understand immersive media experiences, and conduct experiments from both a practical and a theoretical perspective. The course consists of lectures, research, discussion and studio-based practice. Students will learn to produce stereoscopic - 3D images and photogrammetric 3D models, utilize multi-channel video and sound systems, and be introduced to the Unity game engine and VR hardware. For the final project, students produce VR environments in experimental and meaningful ways. Prerequisite: None. Fulfillment: IMA/IMB elective.

INTM-SHU 257T
VFX in the Age of Virtual Production

In this era of virtual production, time-based media faces new opportunities and challenges in terms of pipelines, workflows, and distribution. Decentralizing, hybridizing, and outsourcing among film studios, production houses, broadcast design, interactive studios, and the gaming industry have become major topics of discourse in academia and industry. This course focuses on the history/context, present practice, and the emerging trends of VFX studies and its applications. Through collaborative research with academia and industry, the course investigates the theory and practice of VFX studies and further examines the feasibility of emerging technologies through the spirit of entrepreneurship. Prerequisite: Interaction Lab / Creative Coding Lab / Communications Lab / Application Lab. Fulfillment: IMA Major Electives; IMB Major Interactive Media Elective.
Virtual Reality and Augmented Reality represent, respectively, visions of "being" somewhere else or augmenting your present environment. These visions are not new, but new technologies have made it possible to produce experiences unlike anything before, particularly through the use of headsets, spatial audio, touch sensors, and custom location-based installations. These new technologies are becoming small, powerful, and inexpensive, and as a result we are witnessing the birth of a powerful new medium, new art form, and new industry - all very quickly. The speed of VR and AR growth has created both opportunity and confusion. "VR / AR Fundamentals" takes a long, deep perspective. We will overview such basic elements as audiovisual resolution and fidelity; spatiality and...
immersion; other senses such as touch, smell, taste (and even mind); input and interactivity; and live and social. We'll look at distinctions such as cinema versus games, movies versus models, public versus personal, real world versus fantasy worlds, linear versus interactive, and narrative versus ambient. These elements and distinctions will be presented partially as technical but in an understandable way for general liberal arts students, and will rely heavily on experiencing content and keeping up with current events. That's the first half-semester. The second half-semester we'll concentrate on collectively producing a series of timely and relevant projects, all short, entertaining, and useful to others exploring the world of VR / AR. Prerequisites: None Fulfillment: IMA Major Electives; IMB Major Interactive Media Elective.

INTM-SHU 284
Digital Sculpting for Facial Animation

This course emphasizes on the 3D animation through digital modeling / sculpting techniques, keyframe and blend-shape animation. The course breaks down into 4 stages: 1. basic topology of head model, 2. high-poly sculpting and projection texturing, 3. Keyframe and blend-shapes animation, 4. 3D animation final project. In the final project, students get to choose either lip-sync animation or conceptual piece utilizing the created head models. An overview of digital editing / compositing and sound design will also be introduced to assist with students' final project at the end of the semester.

INTM-SHU 293
Mobile Food as Media Infrastructure

This course examines mobile food networks as a method to research and map the contemporary city. In Shanghai, over the past few years, there has been an enormous transformation in the way the city feeds itself. Street food stalls, restaurants and marketplaces have all migrated online. This tendency towards virtualization was intensified during the Coronavirus pandemic, when, during lockdown, people used their phones to order food, which was delivered straight to their door. This course treats mobile food delivery as a media infrastructure. It examines how these new delivery systems form part of a distributed urban ecosystem that underlies the emergence of a Sentient City. Students will use the tools of critical cartography and digital storytelling to explore the cultural, economic, and political issues that are raised by the explosive growth of mobile food delivery. Research topics include the economics of company platforms; logistical networks; the reorganization of food production; the socio-economic conditions of delivery workers; changing cultural habits of urban residents; the shifts in the city's built environment as well as the design of the apps themselves. Prerequisite: None. Fulfillment: IMA Major Electives; IMB Major Interactive Media Elective.

INTM-SHU 296
The Planetary: Computation in the Anthropocene

This course will examine the relationship between planetary-scale computation and the development of planetarity. We take as starting points that (1) the very notion of climate change is an epistemological accomplishment of planetary-scale sensing, modeling and computation systems and (2) the ecological costs of computation are on an unsustainable trajectory. The seminar will ask: what are alternative futures for computation as human and ecological infrastructure? The primary subject of research is the transition from computation as a digital media object to computation as continental scale infrastructure. The scope and significance of this shift are fundamental for the development of interactive art and design that seeks to explore critical alternatives to extant models for this. What we call planetary-scale computation takes different forms at different scales—from energy and mineral sourcing and subterranean cloud infrastructure to urban software and massive universal addressing systems; from interfaces drawn by the augmentation of the hand and eye to users identified by self—quantification and the arrival of legions of sensors, algorithms, and robots. Each of these may represent a direct harm upon effected ecosystems and/or a means for and informed viable administration of those same systems. The course is primarily geared to advanced IMA students but is open to students from any major who are interested in engaging with contemporary issues of computation, society and ecology. Final projects will combine original written work and speculative design that can draw on diverse student core skill sets. Prerequisite: Sophomore Standing. Fulfillment: IMA Major Electives; IMB Major Interactive Media Elective.

INTM-SHU 297T
Synthetic Senses and Sensation

This 7-week course will introduce students to (1) discourses of the artificial and the synthetic in contemporary philosophy, (2) digital practices that explore synthetic vision, hearing, touch, and cognition, and (3) allow each student to develop either an original work of speculative art/design and/or an original written work related to synthetic sensing. Course is open to students of any major. Prerequisite: Sophomore standing. Fulfillment: IMA/IMB elective.

INTM-SHU 301
Advanced Lab: Open Project

This course offers students the opportunity to develop a self-initiated project with close mentorship from a faculty member. Projects undertaken can span the areas of conceptual research, business development, creative practice, and media production. The course includes structured weekly workshop and critique times with peers and special guests. It is expected that students will be invested in the work of their peers by providing feedback and carefully consider the feedback they receive during critiques. In addition to weekly meeting times, students are expected to also participate in regular one-on-one meetings with faculty, peers, and guests. A formal project proposal, weekly assignments and documentation, a final project presentation, and participation in the IMA End of Semester show are all required. Although students are encouraged to continue work they may have initiated in a prior class, they may not combine or in any way double count work from this class in another class taken in the same semester.
Group work is allowed assuming all group members are enrolled in this class. Students may take this course in either the first or second 7 weeks for 2 credits or repeated across 14 weeks for 4 credits. Prerequisite: Sophomore standing. Fulfillment: IMA/IMB elective; IMA advanced elective.

INTM-SHU 303T  
**Advanced Lab: Shaders**

Learn how to creatively harness the power of your computer's graphics card by writing your own shaders! Shaders are small programs that run on the GPU and are used for purposes most commonly related to graphic effects, video post-processing, and the generation of geometry. They are an incredibly powerful tool for creating hardware accelerated graphics and form the building blocks of the modern graphics pipeline. Vertex, fragment, and geometry shaders will be the main focus of the course. However, if time permits, compute shaders (GPGPU) will also be explored. The topic will be approached platform-agnostic, so that it can be applied to the different implementations in various software environments such as WebGL, Unity, Max, TouchDesigner, etc. This an advanced-level 2-credit course. Prerequisite: Instructor Consent. Fulfillment: IMA/IMB elective; IMA advanced elective.

INTM-SHU 304  
**Advanced Lab: Web Page to Web Space**

Web Page to Web Space is a course that explores virtual interactive experience in the context of Virtual Embodiment, Virtual Space, Telepresence, and Metaverse. Students will investigate new possible ways of using the Web to create new immersive environments in a web platform, by utilizing algorithmic 3D animation and server-side programming. This is an advanced course with technically challenging concepts with three.js and node.js and suitable for students with prior knowledge in visual programming. Prerequisite: Nature of Code or Machine Learning for New Interfaces or Critical Data and Visualization or ABC Browser Circus or Kinetic Interfaces or Machine Learning for Artists and Designers or Expanded Web or Movement Practices and Computing. Fulfillment: IMA/IMB Elective, Advanced IMA Elective.

INTM-SHU 305/305T  
**Advanced Seminar: Hello Metaverse**

The aim of this course is to explore the relationship between the virtual self and environment and to assess both as a space for learning and collaboration using virtual reality. This course takes place entirely in virtual, immersive environments. Students will be provided Oculus Quest 2 virtual reality headsets and specialized software. See the principles above for further details. Prerequisite: IMA Major with junior or senior standing. Fulfillment: IMA/IMB Elective.

INTM-SHU 350  
**Advanced Seminar: Seminar in Media Studies: Media’s Material and Environmental Relations**

In response to the popular conception of the “immaterial” Internet, and “datafication” of all aspects of life, how might we rethink the materiality and environmentality of media in our research? This upper-level seminar will introduce students to various theoretical frameworks in media studies including new materialism, media archaeology, studies of media infrastructures and ecologies, cultural geographies, and elemental media. Students are expected to critically assess the (geo)politics of material/environmental media and to adopt a mix of these frameworks to develop a research project and essay. Prerequisite: Junior standing OR What is New Media. Fulfillment: IMA/B Elective, Advanced IMA Elective.

INTM-SHU 400  
**Capstone Studio I**

Interactive Media Arts Capstone I is the first of two classes that give students the opportunity to research, design, make and test an individual interactive media project. Students will work independently (with faculty guidance) to research and write the first half of a Project Proposal to contextualize their ideas. In addition to this, students will also develop a functional proof of concept of their final project that will be tested with participants and also presented to a group of peers and faculty. Prerequisite: Seniors with primary or secondary major in IMA/IMB. Fulfillment: IMA / IMB Major Capstone.

INTM-SHU 401  
**Capstone Studio II**

Capstone II is the the second of two classes that give students the opportunity to research, design, make and test an individual interactive media project. Students will work independently (with faculty guidance) to research and write the final half of a Project Proposal. In addition students will build on their existing projects from Capstone I to further develop their work into a final project that will be tested with participants and presented to a group of faculty and peers. Prerequisite: Seniors with primary or secondary major in IMA/IMB. Fulfillment: IMA / IMB Major Capstone.
Mathematics

MATH-SHU 5

Chance

Chance is a common word whose meaning can vary, but which generally applies to situations involving a certain amount of unpredictability. How does it differ from fortune or luck? Is it synonymous with randomness? We all try to increase our chances of success; how do such efforts involve taking or minimizing certain risks? If philosophical discussions about chance can be traced back to antiquity, probabilistic and statistical concepts appeared more recently in mathematics. Starting with gambling strategies, the theory now applies to the core of almost all scientific and technical fields, including statistical and quantum mechanics, chaotic dynamics, phylogenetics, sociology, economics, risk management, and quality control. Bringing together materials and questions from philosophy, mathematics, and other disciplines, this course provides a journey in the history of ideas. Students will investigate key concepts (including independence, expectation, confidence intervals, or tests), consider their applications to specific fields of science, and illustrate them by computer experiments. Readings include excerpts from Lucretius, Pascal, Hume, Laplace, Peirce, and Hacking. Prerequisite: None. Fulfillment: This course satisfies CORE STS requirement.

MATH-SHU 9

Precalculus

This course is designed as a preparation for calculus, including study of basic properties of polynomials, rational functions, exponential and logarithmic functions, and trigonometric functions. Systems of linear equations are also covered. Prerequisite: None. Fulfillment: This course satisfies Core Curriculum Math requirement.

MATH-SHU 10

Quantitative Reasoning: Great Ideas in Mathematics

This one-semester course serves as an introduction to great ideas in mathematics. During the course we will examine a variety of topics chosen from the following broad categories. 1) A survey of pure mathematics: What do mathematicians do and what questions inspire them? 2) Great works: What are some of the historically big ideas in the field? Who were the mathematicians that came up with them? 3) Mathematics as a reflection of the world we live in: How does our understanding of the natural world affect mathematics (and vice versa)? 4) Computations, proofs, and mathematical reasoning: Quantitative skills are crucial for dealing with the sheer amount of information available in modern society. 5) Mathematics as a liberal art: Historically, some of the greatest mathematicians have also been poets, artists, and philosophers. How is mathematics a natural result of humanity’s interest in the nature of truth, beauty, and understanding? Why is math a liberal art? Prerequisite: None. Fulfillment: This course satisfies Core Curriculum Math requirement.

MATH-SHU 131

Calculus

This course presents the foundations of calculus for functions of a single variable. Topics addressed include limits, continuity, rules of differentiation, approximation, antiderivatives, indefinite and definite integrals, the fundamental theorem of calculus, integration techniques, and improper integrals. Prerequisite: Pre-placement by faculty based on high-school grades, or NYUSH “Calculus and Linear Algebra” placement exam, or grade C or better in MATH-SHU 9 (Precalculus). Anti-requisite: MATH-SHU 201 (Honors Calculus). Fulfillment: This course satisfies Economics Core Math requirement; Math Core Math requirement.

MATH-SHU 140

Linear Algebra

This first course in linear algebra covers systems of linear equations, vectors, linear transformations, matrices and their determinants, vector spaces, basis and dimension, eigenvectors and eigenvalues, quadratic forms, and matrix decompositions. In addition to its role as an essential topic within mathematics, linear algebra is also critically useful throughout the sciences: for example, in estimation theory, chemical equations, electrical networks, and heat distributions. Prerequisite: Sufficient high school grades, or NYU SH “Calculus and Linear Algebra” placement exam, or a grade of C or better in MATH-SHU 9 (Precalculus). Not open to students who have taken MATH-SHU 141 (Honors Linear Algebra I) or MATH-SHU 265 (Linear Algebra and Differential Equations) Equivalency: This course counts for MATH-UA 140. Fulfillment: This course satisfies Math required, Honors Math required (with MATH-SHU 143); Engineering required, DS required Math course.

MATH-SHU 141

Honors Linear Algebra I

This is the first semester of a 2-semester course in linear algebra for advanced mathematics majors. Topics covered include fields, vector spaces, linear independence, dimension, linear transformations, rank, matrices, eigenvalues, eigenvectors, determinants, characteristic polynomials, and the Cayley-Hamilton theorem. Examples from applications are also covered, including interpolation problems, traffic flows, genetics, the fundamental theorem of algebra, electric circuits, static mechanics, and consumption matrices in economics. Prerequisite: Pre-placement by Faculty based on high-school grades, or NYUSH “Honors Calculus and Honors Linear Algebra” placement exam, or authorization of the instructor. Fulfillment: Math Constrained Math Elective; Honors Math required, DS Math required course.

MATH-SHU 142

Honors Linear Algebra II

This course is a continuation of Honors Linear Algebra I. Topics covered include eigenspaces, multiplicities of
This course comprises a combination of the theory of probability with techniques of modern statistical analysis.

Probability and Statistics
MATH-SHU 235
satisfies Honors Math Electives, Math Additional electives; DS Data Analysis or concentration in Math.

MATH-SHU 140 (Linear Algebra) or MATH-SHU 141 (Honors Linear Algebra I), and grade C or better in either MATH-SHU 140 (Linear Algebra) or MATH-SHU 143 (Foundations of Mathematical Methods), or authorization of the instructor. Fulfillment: This course requires a good prior understanding of probability theory, calculus, and linear algebra. Prerequisite: Grade C or better in either MATH-SHU 131 (Calculus) or MATH-SHU 201 (Honors Calculus), and Grade C or better in MATH-SHU 141 (Honors Linear Algebra I) or grade C or better in MATH-SHU 140 (Linear Algebra) and grade C or better in MATH-SHU 143 (Foundations of Mathematical Methods), or authorization of the instructor. Fulfillment: Math Constrained Math Elective; Honors Math required; DS concentration in Math.

MATH-SHU 143 | MATH-SHU 143T
Foundations of Mathematical Methods
This course is an introduction to the tools of mathematical reasoning, which serves as a solid basis for advanced courses emphasizing proofs and abstraction. Topics include formal logic, sets, relations, and functions, proof techniques, cardinality, complex numbers, combinatorics, discrete probability. Prerequisite: Grade C or better in MATH-SHU 131 (Calculus), and grade C or better in either MATH-SHU 140 (Linear Algebra) or MATH-SHU 141 (Honors Linear Algebra I) or ATH-SHU 265 (Linear Algebra and Differential Equations). Anti-requisite: MATH-SHU 201 (Honors Calculus). Fulfillment: Honors Math required (with MATH-SHU 140).

MATH-SHU 151
Multivariable Calculus
This course explores calculus of functions of several variables. Topics covered include power series, differentiation and integration of functions of several variables, including directional derivatives, the gradient, line and multiple integrals, and the theorems of Green, divergence, and Stokes. Prerequisite: Grade C or better in either MATH-SHU 131 (Calculus) or MATH-SHU 201 (Honors Calculus). Anti-requisite: MATH-SHU 329 (Honors Analysis II). Equivalent to MATH-UA 123, MATH-AD 112. Fulfillment: This course satisfies CHEM required; PHYS required; Engineering required; MATH required; DS required Math course.

MATH-SHU 160
Networks and Dynamics
Today, networks and dynamics play fundamental roles throughout science, engineering and the social sciences. This is a post-calculus mathematics course that is designed to prepare students to understand the mathematical behavior of networks and dynamics as the students learn from a broad set of majors -- from mathematics, the natural sciences and engineering through the social sciences such as economics and finance. The preliminary goal is to address the following challenge: today's science and society at large requires us to understand complex networks (be it genetic network that makes us who we are, neural network underlying our brain functions, social network of friends through Facebook or WeChat) and how the behavior of such a complex network evolves in time. The language for providing a scientific understanding of such systems is the mathematics of network theory and dynamical systems theory. This course will introduce analytical methods and mathematical models from network and dynamical systems theory toward understanding dynamical network behavior. Prerequisite: Grade C or better in either MATH-SHU 131 (Calculus) or MATH-SHU 201 (Honors Calculus), and grade C or better in either MATH-SHU 140 (Linear Algebra) or MATH-SHU 141 (Honors Linear Algebra I) or MATH-SHU 265 (Linear Algebra and Differential Equations). Fulfillment: Biology elective; Economics elective; Math additional Math elective; Honors Math elective; NS elective; Engineering required.

MATH-SHU 201
Honors Calculus
This is a rigorous course in single-variable calculus for mathematics majors, providing preparation for advanced courses in analysis. Topics covered include number systems, functions, graphs, vectors, conic sections, polar coordinates, limits, continuity, least upper bounds, the derivative, convexity and concavity, inverse functions, parametric curves, Riemann sums, integrals, and the fundamental theorem of calculus. Prerequisite: Pre-placement by Faculty based on high-school grades, or NYUSH "Honors Calculus and Honors Linear Algebra" placement exam, or grade A- or better in MATH-SHU 131 (Calculus), or authorization of the instructor. Anti-requisite: MATH-SHU 143 (Foundations of Mathematical Methods). Fulfillment: This course satisfies Math required; Honors Core Math required; ECON Core Math required.

MATH-SHU 234
Mathematics of Statistics
This course offers an introduction to mathematical statistics. It covers the essential topics of statistics including point estimation, interval estimation, Bayesian inference, hypothesis testing, and linear and logistic regression. This class requires a good prior understanding of probability theory, calculus, and linear algebra. Prerequisite: Grade C or better in either MATH-SHU 140 (Linear Algebra) or MATH-SHU 141 (Honors Linear Algebra I), and grade C or better in either MATH-SHU 235 (Probability and Statistics) or MATH-SHU 233 (Theory of Probability). Fulfillment: This course satisfies Honors Math Electives, Math Additional electives; DS Data Analysis or concentration in Math.

MATH-SHU 235
Probability and Statistics
This course comprises a combination of the theory of probability with techniques of modern statistical analysis.
It is designed to acquaint the student with both probability and statistics in the context of their applications to the sciences. In probability: mathematical treatment of chance; combinatorics; binomial, Poisson, and Gaussian distributions; law of large numbers and the normal distribution; application to coin-tossing, radioactive decay, and so on. In statistics: sampling; normal and other useful distributions; testing of hypotheses; confidence intervals; correlation and regression; and applications to scientific, industrial, and financial data. Prerequisite: MATH-SHU 131 Calculus or 210 Honors Calculus. Not open to students who have taken MATH-SHU 233 Honors Theory of Probability and/or MATH-UA 234 Mathematical Statistics. Equivalency: This course counts for MATH-UA 235. Fulfillment: This course satisfies Math required course, Social Science Methods, Business Core, CS & CE & EE required; Data Science foundational, Economics required, PHYS required, IMB Business elective.

MATH-SHU 236
Foundations of Machine Learning and Data Science | The Mathematics of Data Science and Machine Learning

This is an advanced topic course for undergraduate students interested in the modern mathematics of data science and machine learning. Tentative topics include dimension reduction and data visualization, the geometry of high dimensional data, and optimization-based data analysis. Topics may change every year to reflect the current research trends. The course requires an excellent understanding of advanced calculus, linear algebra, and probability theory. Programming skills and knowledge in optimization are strongly recommended but not required.

MATH-SHU 238
Honors Theory of Probability

This course is an introduction for mathematics majors to the mathematical treatment of random phenomena occurring in the natural, physical, and social sciences. Topics covered include axioms of mathematical probability, combinatorial analysis, the binomial distribution, Poisson and normal approximations, random variables, probability distributions, generating functions, and Markov chains and their applications. Prerequisite: Grade C or better in either MATH-SHU 151 (Multivariable Calculus) or MATH-SHU 329 (Honors Analysis II), and grade C or better in either MATH-SHU 140 (Linear Algebra) or MATH-SHU 141 (Honors Linear Algebra I). Equivalency: This course counts for MATH-UA 233. Non-Shanghai students need to get the instructors' permission to enroll in classes. Fulfillment: Math required; Honors Math required; CS, CE, EE required; DS Foundational course or concentration in Math; Economics required.

MATH-SHU 245
Mathematical Choice Theory

This course is a mathematical examination of the main ideas of decision theory, including game, auction, and social choice theory. Topics covered include strategic and extensive form games, existence and properties of equilibria (Nash, Bayesian, perfect, sequential, correlated), the expected utility maximization theorem, the core, auction and mechanism design under independent and interdependent values, the revenue equivalence theorem, voting models, Arrow's impossibility theorem, the Gibbard-Satterthwaite theorem, and implementation theory. We also discuss current applications of these ideas to bargaining agreements, auction design, and voting systems. Prerequisite: Grade C or better in either MATH-SHU 131 (Calculus) or MATH-SHU 201 (Honors Calculus).

MATH-SHU 250
Mathematics of Finance

This course is an introduction to the mathematics of finance. Topics: linear programming with application to pricing. Interest rates and present value. Basic probability, random walks, central limit theorem, Brownian motion, log-normal model of stock prices. Black-Scholes theory of options. Dynamic programming with application to portfolio optimization. Prerequisite: Grade C or better in either MATH-SHU 151 (Multivariable Calculus) or MATH-SHU 329 (Honors Analysis II), and grade C or better in either MATH-SHU 235 (Probability and Statistics) or MATH-SHU 233 (Theory of Probability). Fulfillment: BUSF Finance elective; BUSM Finance track; IMB Business elective; Math Additional elective; Honors Math elective.

MATH-SHU 251
Introduction to Math Modeling

Formulation and analysis of mathematical models. Mathematical tools include dimensional analysis, optimization, simulation, probability, and elementary differential equations. Applications to biology, economics, other areas of science. The necessary mathematical and scientific background is developed as needed. Students participate in formulating models as well as in analyzing them. Prerequisites: Grade C or better in either MATH-SHU 151 (Multivariable Calculus) or MATH-SHU 201 (Honors Calculus), and grade C or better in either MATH-SHU 140 (Linear Algebra) or MATH-SHU 141 (Honors Linear Algebra I). Fulfillment: This course satisfies MATH additional elective; Honors MATH elective.

MATH-SHU 252
Numerical Analysis

In numerical analysis, one explores how mathematical problems can be analyzed and solved with a computer. This has very broad applications in mathematics, physics, engineering, finance, and the life sciences. This course gives an introduction to numerical analysis for mathematics majors. Theory and practical examples using Matlab will be combined to study a range of topics, from simple root-finding procedures to differential equations and the finite element method. Prerequisite: Grade C or better in either MATH-SHU 131 (Calculus) or MATH-SHU 201 (Honors Calculus) and grade C or better in either MATH-SHU 140 (Linear Algebra) or MATH-SHU 141 (Honors Linear Algebra I). Fulfillment: CORE AT; Math Additional elective; Honors Math elective.

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MATH-SHU 262
Ordinary Differential Equations

This course introduces the main ideas of ordinary differential equations. Topics include vector fields, existence and uniqueness of solutions to first-order linear differential equations, stability, higher order differential equations, the Laplace transform and numerical methods, linear and nonlinear systems, and Sturm-Liouville theory. Prerequisite: Grade C or better in either MATH-SHU 131 (Calculus) or MATH-SHU 201 (Honors Calculus), and grade C or better in either MATH-SHU 140 (Linear Algebra) or MATH-SHU 141 (Honors Linear Algebra I). Anti-requisite: Students who have taken MATH-SHU 362 Honors Ordinary Differential Equations are not eligible. Equivalency: This course counts for MATH-UA 262. Fulfillment: This course satisfies Math required course. Fulfillment: Math required course.

MATH-SHU 263
Partial Differential Equations

Many laws of physics are formulated as partial differential equations. This course discusses the simplest examples, such as waves, diffusion, gravity, and static electricity. Nonlinear conservation laws and the theory of shock waves are discussed, as well as further applications to physics, chemistry, biology, and population dynamics. Prerequisite: Grade C or better in either MATH-SHU 262 (Ordinary Differential Equations) or MATH-SHU 362 (Honors Differential Equations), and grade C or better in either MATH-SHU 151 (Multivariable Calculus) or MATH-SHU 329 (Honors Analysis II). Equivalency: This course counts for MATH-UA 263. Fulfillment: This course satisfies Math required Math elective; Honors Math elective.

MATH-SHU 265
Linear Algebra and Differential Equations

This course is an introduction to linear algebra and ordinary differential equations. Topics covered include the fundamental concepts of linear algebra such as matrix theory, determinants, vector spaces, subspaces, basis, linear transformations, eigenvectors, eigenvalues and the inner product spaces, as well as the fundamental techniques of ordinary differential equations such as first order differential equations, linear differential equations and systems. Pre-requisites: Calculus OR Honors Calculus. Anti-requisites: MATH-SHU 140, MATH-SHU 141, MATH-SHU 262, or MATH-SHU 362. Fulfillment: This course satisfies PHYS additional required; CE required; EE required; DS Math required.

MATH-SHU 282
Functions of a Complex Variable

Complex variables and functions play an essential role in many branches of mathematics and science. In this course, we cover basic aspects of the theory, including differentiation of complex functions, the Cauchy-Riemann equations, Cauchy's theorem and integral formula, singularities, Laurent series, conformal mapping, analytic continuations, and applications to fluid flow. Prerequisite: Grade C or better in either MATH-SHU 262 (Ordinary Differential Equations) or MATH-SHU 362 (Honors Differential Equations), and grade C or better in either MATH-SHU 151 (Multivariable Calculus) or MATH-SHU 329 (Honors Analysis II), and grade C or better in either MATH-SHU 140 (Linear Algebra) or MATH-SHU 141 (Honors Linear Algebra I). Equivalency: This course counts for MATH-UA 282. Fulfillment: This course satisfies Math constrained Math elective; Honors Math required course.

MATH-SHU 328
Honors Analysis I

This course is a continuation of Honors Calculus. Topics covered include integration techniques, trigonometric functions, the logarithm, exponential functions, approximation by polynomials, sequences, series, convergence, uniform convergence, power series, Taylor series, complex numbers and functions, Euclidean spaces, and basic topology. Prerequisite: Grade C or better in MATH-SHU 201 (Honors Calculus), or grade A- or better in MATH-SHU 131 (Calculus) and A- or better in MATH-SHU 143 (Foundations of Mathematical Methods), or authorization of the instructor. Equivalency: This course counts for MATH-UA 328. Fulfillment: This course satisfies Math constrained Math elective; Honors Math required course.

MATH-SHU 329
Honors Analysis II

This course is a continuation of Analysis I, with emphasis on functions of several variables. Topics covered include the topology of Euclidean space, the Stone-Weierstrass theorem, the implicit and inverse function theorems in several variables, Jordan regions, linear transformations, differentiation of integrals, and integration of differential forms. Prerequisite: Grade of C or better in MATH-SHU 328 Honors Analysis I and MATH-141 Honors Linear Algebra I. Equivalency: This course counts for MATH-UA 329. Fulfillment: This course satisfies Honors Math Required, MATH Constrained Math electives, DS concentration in Math.

MATH-SHU 339
Real Variables

This is an introductory course on modern analysis. The topics to be discussed include: Lebesgue measure and integration, measurable functions and sets, convergence theorems, Lebesgue differentiation theorem, elements of Hilbert space and Banach space, Riesz’s representation theorem, Sobolev space and its applications to partial differential equations. Prerequisite: Grade C or better in MATH-SHU 328 (Honors Analysis I) Fulfillment: Constrained Math elective; Honors Math elective.

MATH-SHU 345
Introduction to Stochastic Processes
This is an introductory course in stochastic processes. Stochastic processes are widely used as modeling tools in many fields of application, including finance, physics, biology and engineering. The course will include an introduction to measure theory, the basic theory of discrete and continuous time Markov chains, branching processes, Poisson point processes, Brownian motion and martingales. In the final part of the course, more advanced topics such as stochastic integrals, free fields, Markov loops and Ising model may be included as time permits and according to the background of the students. Prerequisites: Grade C or better in either MATH-SHU 140 (Linear algebra) or MATH-SHU 141 (Honors Linear Algebra I), and grade C or better in either MATH-SHU 235 (Probability and Statistics) or MATH-SHU 233 (Theory of Probability). Fulfillment: This course satisfies Honors Math Electives, Math Additional electives; DS Concentration in Math.

MATH-SHU 348
Honors Algebra I

This introduction to abstract algebra is a rigorous study of groups and rings. Topics covered include symmetric and linear groups, the Sylow theorems, classification of finitely generated abelian groups, polynomial and quotient rings, ideals, principal ideal domains, unique factorization, and the Nullstellensatz. Prerequisites: Grade C or better in MATH-SHU 141 (Honors Linear Algebra I), or grade B or better in MATH-SHU 140 (Linear Algebra) and Grade C or better in either MATH-SHU 201 (Honors Calculus) or in MATH-SHU 143 (Foundations of Mathematical Methods) Fulfillment: This course satisfies Math constrained Math elective; Honors Math required course.

MATH-SHU 350 | 350T
Probability Limit Theorems

The goal of this course is to introduce the main ideas of advanced probability: rigorous treatment of conditional expectation and martingales, weak convergence, strong law of large numbers, central limit theorem, convergence to infinitely divisible distributions, law of iterated logarithm, Markov Chains, stationary stochastic processes, ergodic theorems. Prerequisite: Grade C or better in MATH-SHU 328 (Honors Analysis 1), or authorization of the instructor. Fulfillment: This course satisfies Math Constrained Math elective; Honors Math elective.

MATH-SHU 362
Honors Ordinary Differential Equations

This course introduces the main ideas of ordinary differential equations, with a particular emphasis on proofs, in comparison with the course MATH-SHU 262. It will cover vector fields, proof of local existence and uniqueness of solutions of first-order differential equations by Picard's fixed point iteration, stability, higher order linear differential equations and their set of fundamental solutions (with proof of characterization by the Wronskian), Series Solutions of second order linear differential equations (ordinary points, proof of Frobenius Theorem, regular singular points and indicial equation), Laplace transform and numerical methods, nonlinear systems, boundary value problems. Prerequisite: Grade C or better in MATH-SHU 201 (Honors Calculus), or MATH-SHU 131 (Calculus) and MATH-SHU 143 (Foundations of Mathematical Methods), and grade C or better in either MATH-SHU 140 (Linear Algebra) or MATH-SHU 141 (honors Linear Algebra I). Fulfillment: This course satisfies Math Required; Honors Math Required.

MATH-SHU 375
Topology

This course presents the basic ideas of point-set topology, as well as their interactions with analysis and algebra. Topics covered include topological spaces, metric spaces, compactness, Tychonoff's theorem, separation axioms, Urysohn's lemma, covering spaces, fundamental groups, and homotopy groups. Prerequisite: Grade C or better in MATH-SHU 328 (Honors Analysis I).

MATH-SHU 377
Differential Geometry

This course investigates the differential properties of curves and surfaces. Topics covered include differential manifolds and Riemannian geometry. Prerequisite: Grade C or better in MATH-SHU 329 (Honors Analysis II). Fulfillment: Math Constrained Math elective; Honors Math elective.

MATH-SHU 997
Independent Study- Mathematics

Mathematics Students majoring in mathematics are permitted to work on an individual basis under the supervision of a full-time or visiting faculty member in the department if they have maintained an overall GPA of 3.0 and a GPA of 3.5 in mathematics and have a study proposal that is approved by a mathematics professor. Students are expected to spend about two to three hours a week per credit (a 4-credit IS would involve about ten to twelve hours a week) on their project. Prerequisite: None. Department consent is needed. Fulfillment: This course satisfies Math Additional Math elective; Honors Math elective.

MATH-SHU-G 2550
Functional Analysis

This course on applications of concepts in functional analysis gives special emphasis to function spaces used in practice, including Hilbert, Hardy, and Sobolev spaces. Other topics covered include the spectral theorem and its application to differential equations, Fourier series, compact operators, Fredholm determinants, measure, volume, and nonlinear analysis for infinite-dimensional spaces, and Brownian motion. Prerequisite: Grade C or better in MATH-SHU 339 (Real variables), or authorization of the instructor. Prerequisite: Grade C or better in MATH-SHU 339 (Real variables), or authorization of the instructor.
Neural Science

NEUR-SHU 100
Math Tools for Life Sciences

This course will provide a broad introduction to basic mathematical and statistical tools for a quantitative analysis in the life sciences. It will cover a broad range of topics, including introduction to linear algebra, probability, linear regression, and statistical tests. We will use the mathematical programming language MATLAB for in-class demonstrations, computer lab during recitations and homework assignments. Prerequisite: Foundations of Biology I or Foundations of Biology II. Fulfillment: Biology required; Neural Science required.

NEUR-SHU 201
Introduction to Neural Science

An introductory lecture course covering the fundamental principles of neuroscience. Topics will include: principles of brain organization; structure and ultrastructure of neurons; neurophysiology and biophysics of excitable cells; synaptic transmission; neurotransmitter systems and neurochemistry; neuropharmacology; neuroendocrine relations; molecular biology of neurons; development and plasticity of the brain; aging and diseases of the nervous system; organization of sensory and motor systems; structure and function of cerebral cortex; modeling of neural systems. Prerequisite: BIOL-SHU 21 Foundations of Biology I and BIOL-SHU 22 Foundations of Biology II (could be co-req). Fulfillment: Biology Electives; Neural Science Required Courses.

NEUR-SHU 210
Cellular and Molecular Neuroscience

A lecture course that provides students with broad exposure to current questions and experimental approaches in cellular neuroscience. Lectures are organized into three areas: cell structure and organization of the vertebrate central nervous system; mechanisms underlying neural signaling and plasticity; and control of cell form and its developmental determinants. Prerequisites: BIOL-SHU 22 Foundations of Biology II and NEUR-SHU 201 Introduction to Neural Science. Fulfillment: Neural Science Required Courses.

NEUR-SHU 222
Perception

How do humans and other animals obtain knowledge about the world? It is easy to take perception for granted, but complex processes (only partly understood) underlie our ability to understand the world by seeing, hearing, feeling, tasting, and smelling it. Perception has fascinated philosophers, physicists, and physiologists for centuries. Currently, perception is a central topic not only in neuroscience, but also in psychology, cognitive science, and computer science. How do scientists approach perception? We seek to discover lawful relations between perceptual experiences and the physical world and to develop models of the processes and mechanisms that produce these connections. To accomplish this, we need accounts of the information, the computational processes, and the neural mechanisms involved in perception. In this course, we will discuss fundamental problems in perception (primarily vision), and learn about techniques that are applied in attempts to solve these problems. The learning outcomes of this course include a better understanding of human perception and critical thinking skills for the analysis and interpretation of the related research reports. PREREQUISITE COURSES Introduction to Neural Science or Introduction to Psychology. The prerequisite can be waived based on the student's background. Contact the course instructor directly for this request. Fulfillment: Biology Major Electives; Neural Science Major Approved upper-level Psychology courses; Neural Science Major Electives; Social Science Major Focus Courses Psychology - 200 level.

NEUR-SHU 251
Behavioral and Integrative Neuroscience

This lecture and laboratory course addresses the physiological and anatomical bases of behavior. Lectures and laboratory experiments will emphasize mammalian sensory, motor, regulatory, and motivational mechanisms involved in the control of behavior, and higher mental processes such as those involved in language and memory. Prerequisite: NEUR-SHU 201 Introduction to Neural Science. This course satisfies Neural Science required course.

NEUR-SHU 261
Neurobiology of Decision Making

This special topics course will review recent research that combines psychological, economic, and neurobiological approaches to study human and animal decision-making. The course will focus on our current understanding regarding the neural underpinnings of decision-making, and how evidence concerning the neural processes associated with choices might be used to advance economic and psychological theories of decision-making. Topics covered include valuation, value learning, perceptual and value-based decisions. Prerequisite: Introduction to Neural Science or with permission of the instructor. Fulfillment: Neural Science elective.

NEUR-SHU 265
Neural Bases of Speech and Language

How does our brain work to enable us to speak and understand language? Are there special parts of the brain dedicated to speech and language? What is it like to be abnormal at speech or lose language? This course provides an introduction of the neuroscience research of speech and language, and interdisciplinary field at the heart of human cognitive neuroscience. Lectures cover basic aspects of language processing in the healthy brain, ranging from early sensory perception to higher level semantic interpretation, as well as a range of neurological and development language disorders, including aphasia, dyslexia, and other speech and language impairment. Functional neuroimaging and electrophysiological techniques will be introduced. The goal of this course is to let students acquire basic knowledge of neurolinguistics, as well as familiarise the ideas of interdisciplinary research.
in the intersection of cognitive science and neuroscience. Prerequisite: None. Fulfillment: Core Curriculum Science, Technology and Society Courses; Neural Science Major Approved upper-level Psychology courses; Neural Science Major Electives; Social Science Major Focus Courses Psychology - 200 level.

NEUR-SHU 270
**Introduction to Theoretical Neuroscience**

This course introduces students in neuroscience and mathematics to theoretical studies of neural systems. The course material is models of the nervous system at many different levels, including the biophysical, the circuit and the systems levels for biological sensing, motor control, perception, and learning. We will follow the classic textbook, “Theoretical neuroscience” by Dayan and Abbott. This broad introduction of topics in computational neuroscience aims to provide initial guidance for students to choose the computational approach to describe and analyze the data. The students will be encouraged to read the references and utilize the online materials before the lectures so that the students can participate in the discussion during the class. Mathematical tools in probability and differential equations and programming in Matlab will be introduced as needed within the course. Prerequisite: Undergraduates: Mathematical Tools for Life Sciences (NEUR-SHU 100 1) or permission by the instructor. Graduates: Mathematical Tools for Neural and Cognitive Science (NEURL-GA.2201), or permission by the instructor. Fulfillment: Neural Science Major Electives.

NEUR-SHU 275
**Action and Cognition**

We need to interact with people and the environment efficiently to survive, evolve, and create a better future. Action is a crucial process in this fundamental interaction. Recent advances in cognitive science and cognitive neuroscience emphasize the functions of action and its relations to cognition. The aims of the course are to provide students with a broad understanding of the foundations as well as cutting-edge advances on the topic of the relation between action and cognition. We will focus on the research that has led to those theories, as well as experimental approaches that derive and support these hypotheses. In doing so, students will also learn about the goals as well as the scientific procedures of behavioral and cognitive neuroscience research and the methods that are being employed to reach these goals. Prerequisite: Introduction to Neuroscience AND Behavioral and Integrative Neuroscience Fulfillment: Neural Science Electives.

NEUR-SHU 303
**Introduction to Linguistics: The Science of Human Language**

This is an introductory survey course to linguistics – the science of language. During this semester, we will address humans’ language competence (e.g., is our language ability a learned behavior or rather an instinct? What do native speakers of a specific language implicitly know about word structure, sentence structure, sentence meaning, pronunciation? Etc.) and humans language performance in social context (e.g., why and how does language evolve in a society? How does language reflect our identity? Etc.). This course will approach these issues by incorporating theoretical and experimental works from (neuro)psychological, philosophical, mathematical/computational, and sociological/cultural perspectives. The course aims to help students understand multiple facets of language ability (a crucial cognitive function that defines who we are as humans – both in terms of intelligent individuals and a social species) and appreciate linguistic diversity. It will also show how linguists work towards a better scientific understanding of our language ability. Prerequisite: None. Fulfillment: CORE STS; Neural Science Electives.

NEUR-SHU 997
**Independent Study I - Neural Science Capstone**

Prerequisite: All Neural Science Major Required Courses (Introduction to Neural Science, Cellular and Molecular Neuroscience, Behavioral and Integrative Neuroscience, Math Tools for Behavioral Science), permission of a neural science faculty member (at NYU-Shanghai, NYU-Abu Dhabi, or NYU-New York) who will act as a sponsor and mentor, and approval of the Director of Undergraduate Studies for Neural Science. The faculty mentor must be selected in consultation with the Director of Undergraduate Studies for Neural Science. Offered in Fall or Spring. Can be repeated once. 2 to 4 credits per term for a maximum of 8 credits. Minimum 4 credits are required to fulfill the capstone course requirement. This course aims at engaging students in research. Taking the course for 4 credits requires 10-12 hours spent on conducting research per week (2 credits requires 5-6 hours per week). It is designed to offer students an opportunity to observe neuroscience research up close and gain hands-on research experience by working as a member in an active research team. Independent Study I and II can be done with the same supervisor or two different supervisors. No lectures will be given. Student researchers are expected to attend and actively participate in lab/supervision meetings. Fulfillment: Neural Science Major Required Courses.

NEUR-SHU 998
**Independent Study II - Neural Science**

Prerequisite: All Neural Science Major Required Courses (Introduction to Neural Science, Cellular and Molecular Neuroscience, Behavioral and Integrative Neuroscience, Math Tools for Behavioral Science), permission of a neural science faculty member (at NYU-Shanghai, NYU-Abu Dhabi, or NYU-New York) who will act as a sponsor and mentor, and approval of the Director of Undergraduate Studies for Neural Science. The faculty mentor must be selected in consultation with the Director of Undergraduate Studies for Neural Science. Offered in Fall or Spring. Can be repeated once. 2 to 4 credits per term for a maximum of 8 credits. Minimum 4 credits are required to fulfill the capstone course requirement. This course aims at engaging students in research. Taking the course for 4 credits requires 10-12 hours spent on conducting research per week (2 credits requires 5-6 hours per week). It is designed to offer students an opportunity to observe neuroscience research up close and gain hands-on research experience by working as a member in an active research team. Independent Study I and II can be done with the same supervisor or two different supervisors. No lectures will be given. Student researchers are expected to attend and actively participate in lab/supervision meetings. Fulfillment: Neural Science Required Courses/ Electives.
This is an introductory physics course covering primarily mechanics and thermodynamics. The mechanics component will cover motion along a straight line, motion in two and three dimensions, Newton's laws of motion, forces, kinetic energy and work, potential energy and conservation of energy, center of mass and linear momentum. The thermodynamics component will cover temperature, heat, and the first law of thermodynamics, the kinetic theory of gases, entropy and the second law of thermodynamics. In addition, some introduction to the foundations of physics such as vectors and measurement will be given. In addition to the course material, the students will do open-ended research projects that encourage creative applications of physics concepts. Pre-req or co-req: Calculus or Honors Calc. Fulfillment: CORE ED; Biology Foundational Courses; Chemistry Foundational Courses; Mathematics Science Lecture sections; Honors Mathematics Science Lecture sections; Neural Science Foundational Courses; Physics Foundational Courses; Computer Systems Engineering Prerequisite Science; Electrical Systems Engineering Prerequisite Science.

This course is an introduction to electricity and magnetism, light, geometrical and wave optics. Many concepts from general physics I will be used in this course such as velocity, acceleration, force, Newton's laws of motion, work and energy. The course uses high school algebra, geometry and trigonometry, vectors and vector arithmetic, and some basic calculus. The algebra, geometry, and trig are essential. The course has lecture, homework and laboratory components. Prerequisite: PHYS-SHU 91. Fulfillment: Biology Foundational Courses; Chemistry Foundational Courses; Mathematics Science Lecture sections; Honors Mathematics Science Lecture sections; Neural Science Foundational Courses; Computer Systems Engineering Prerequisite Science; Electrical Systems Engineering Prerequisite Science.

This laboratory course is to accompany FOS physics lecture. Students will be familiarized with various techniques, equipment, data analysis skills, and ideas common to physics laboratories. Experiments in mechanics and thermodynamics are chosen to illustrate the experimental foundation of physics presented in the lecture courses. The laboratory will also emphasize scientific writing. Prerequisite or Co-requisite: Physics I or Found of Physics Honors I. Fulfillment: Core ED; Biology Foundational Courses; Chemistry Foundational Courses; Mathematics Science Lab sections; Honors Mathematics Science Lab sections; Neural Science Foundational Courses; Physics Foundational Courses.

Measurement, Motion Along a Straight Line, Vectors, Motion in Two and Three Dimensions, Force and Motion, Kinetic Energy and Work, Potential Energy and Conservation of Energy, Center of Mass and Linear Momentum, Torque and Angular Momentum, Rotation and Rigid-Body Motion, Gravitation, Equilibrium, Stability, Elasticity, Oscillations and Harmonic Motion, Special Relativity. Prerequisite or Co-requisite: MATH-SHU 131 or MATH-SHU 201. Fulfillment: Core ED; Biology Foundational Courses; Chemistry Foundational Courses; Mathematics Science Lecture sections; Honors Mathematics Science Lecture sections; Neural Science Foundational Courses; Physics Foundational Courses; Computer Systems Engineering Prerequisite Science; Electrical Systems Engineering Prerequisite Science.

This is an introductory physics course covering primarily mechanics and thermodynamics. The mechanics component will cover motion along a straight line, motion in two and three dimensions, Newton's laws of motion, forces, kinetic energy and work, potential energy and conservation of energy, center of mass and linear momentum. The thermodynamics component will cover temperature, heat, and the first law of thermodynamics, the kinetic theory of gases, entropy and the second law of thermodynamics. In addition, some introduction to the foundations of physics such as vectors and measurement will be given. In addition to the course material, the students will do open-ended research projects that encourage creative applications of physics concepts. Pre-req or co-req: Calculus or Honors Calc. Fulfillment: CORE ED; Biology Foundational Courses; Chemistry Foundational Courses; Mathematics Science Lecture sections; Honors Mathematics Science Lecture sections; Neural Science Foundational Courses; Physics Foundational Courses; Computer Systems Engineering Prerequisite Science; Electrical Systems Engineering Prerequisite Science.

Continuation of Foundation of Physics II. Topics include electric charge and electric field, electric potential, Gauss's law, capacitor, current, circuits, magnetic fields, induction, electromagnetic waves, and Maxwell's equations (in an integral form). This is the second semester of a four-semester calculus-based introduction to Physics, and is intended for physics majors and other interested students. Prerequisite: (MATH-SHU 121 or MATH-SHU 201) and PHYS-SHU 91. Fulfillment: Biology Foundational Courses; Chemistry Foundational Courses; Mathematics Science Lecture sections; Honors Mathematics Science Lecture sections; Neural Science Foundational Courses; Physics Foundational Courses; Computer Systems Engineering Prerequisite Science; Electrical Systems Engineering Prerequisite Science.

Continuation of Foundation of Physics II. Topics include thermodynamics, kinetic theory, statistical physics, wave motion, sound, reflection, refraction, interference, diffraction, polarization of light. This is the third semester of a four-semester calculus-based introduction to Physics, and is intended for physics majors and other interested
students. The lectures serve as an introduction, and the real work of learning starts when you do the homework and recitation. The lectures will be most useful to you if you ask questions when there is something you do not understand. Do not imagine that you are the only person in the room who does not understand something. The most important part of the class is the homework you do. You learn more physics by doing the homework and recitation than from the lecture. I encourage you to work together with one or more friends on the homework assignments. It is more enjoyable that way, and you learn by explaining things to each other. Prerequisite: (MATH-SHU 121 or MATH-SHU 201) and PHYS-SHU 93. Fulfillment: Physics Foundational Courses.

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>PHYS-SHU 96</td>
<td>Foundations of Physics IV Honors</td>
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<td></td>
<td>Continuation of Foundation of Physics III. Topics include Relativity, Photon, Quantum Mechanics, Molecules and Condensed Matter, Nuclear Physics, Particle Physics and Cosmology. This is the fourth semester of a four-semester calculus-based introduction to Physics, and is intended for physics majors and other interested students. Prerequisite: PHYS-SHU 95. This course satisfies Physics Foundations of Science requirement.</td>
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<tr>
<td>PHYS-SHU 106</td>
<td>Mathematical Physics</td>
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<td>PHYS-SHU 135</td>
<td>Solid-State Physics</td>
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<td>This course is designed as an introduction to condensed matter physics for students with knowledge of elementary quantum mechanics. Topics include crystal structure, lattice vibrations, and the energy band theory of metals and semiconductors. Covers the electronic, magnetic, and optical properties of solids. In addition, the course may include some modern research topics such as the physics of nanostructures, soft condensed matter physics, and superconductivity. Prerequisite: None. This course satisfies Physics elective.</td>
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<tr>
<td>PHYS-SHU 200</td>
<td>Optical Imaging: Applications in Biology and Engineering</td>
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<td>Optics and imaging technology play very important roles in science and engineering. For example, the images collected by the Hubble Telescope, since year 1990, have revolutionized modern astronomy. In biology, the use of two-photon excitation microscopy has significantly advanced neuroscience, as we are now able to track the intracellular development at sub-micron resolutions. A typical course in optics offered at any university often focuses on the fundamental aspects of light but much less on its vast applications in the real world. This short course will exemplify the power and usefulness of optics in current sciences and technology, especially in biology and engineering. Prerequisites: None. Fulfillment: Physics elective.</td>
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<tr>
<td>PHYS-SHU 201</td>
<td>Topics in Introduction to Quantum Mechanics and Quantum Technology</td>
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<td>Quantum mechanics is the theory that tells us how everything we see around us - from atoms, light, electrons, to materials - behaves at the microscopic level. Starting from its abstract beginnings in the early 20th century, in the 21st century we are entering a new age where we can control individual atoms and create quantum systems for new technologies. This course gives a simplified introduction to quantum theory, for students who wish to understand quantum mechanics only to a basic level to see some of its applications. The first part of the course introduces the key aspects of quantum mechanics. In the second part we apply these ideas to technological applications such as quantum teleportation, quantum computing, and cryptography. Pre-requisite: Linear Algebra OR Honors Linear Algebra OR Linear Algebra and Differential Equations Fulfillment: Physics elective.</td>
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<tr>
<td>PHYS-SHU 302</td>
<td>Statistical Mechanics and Thermodynamics</td>
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<td>Topics include relation of entropy to probability and energy to temperature, the laws of thermodynamics, Maxwell-Boltzmann, Bose-Einstein, and Fermi-Dirac statistics, equations of state for simple gases and chemical and magnetic systems, and elementary theory of phase transitions. Prerequisite: Foundation of Physics III Honors (PHYS-SHU 95) in SH or Physics III (PHYS-UA 95) in NY as the pre-req of PHYS-SHU 302 Statistical Mechanics. This course satisfies PHYS major requirements.</td>
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<td>PHYS-SHU 303</td>
<td>Advanced Physics Laboratory</td>
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<td>A further development of the experimental techniques introduced in Foundations of Science as applied to modern physics. Following a number of introductory experiments, students have at their option a variety of open-ended experiments they can pursue, including the use of microcomputers for data analysis. Experimental areas include Mossbauer effect, cosmic rays, magnetic resonance, superfluidity and super-conductivity, and relativistic mass. Prerequisite: PHYS-SHU 95 Found of Physics III Honors. This course satisfies PHYS requirement.</td>
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PHYS-SHU 997

Independent Study – Physics

Prerequisite: Foundations of Science I-III (or Physics I&II, Foundations of Chemistry I&II, Foundations of Biology I&II), and a minimum GPA of 3.0 overall and in all science and mathematics courses required for the major, permission of a physics faculty member (at NYU-Shanghai, NYU-Abu Dhabi, or NYU-New York) who will act as a sponsor and mentor, and approval of the Director of Undergraduate Studies (DUS) in Physics. The faculty mentor must be selected in consultation with the DUS. Offered in the Fall, Spring or Summer. 2 to 4 points per term for a maximum of 4 points. This course aims at engaging students in research. It is designed to offer students an opportunity to observe physics research up close and gain hands-on research experience by working as a member in an active research team. Independent Study I and II can be done with the same supervisor or two different supervisors. No lectures will be given. Student researchers are expected to attend and actively participate in lab/supervision meetings. A Proposal for Independent Study form must be filled out, signed by the DUS, and submitted to the Registrar. Requires a written report on the research to be evaluated by the faculty sponsor, with a copy submitted to the DUS and a copy to the Dean of Arts & Sciences. Department consent is required. Fulfillment: Physics elective.

PHYS-SHU 998

Integrated Science Capstone

This course will provide students with a completion of their undergraduate science education by making use of the skills and knowledge they acquired over the course of completing their major to apply to scientific problems across disciplines. Students will be paired with a faculty mentor to engage either in Independent Research or Literature Review to address a scientific question of the student’s design, culminating in a written report. Students are encouraged to work with faculty mentors outside of their own field. Open only to Biology, Chemistry, and Physics majors in the senior year. Prerequisite: senior students with physics major. Fulfillment: Physics required.

PHYS-SHU 999

Physics Research in Shanghai

Prerequisites: Independent Study (PHYS-SHU 997 or 998), a minimum GPA of 3.65 overall, a minimum GPA of 3.65 in all science and mathematics courses required for the major, and permission of a faculty sponsor and the Dean of Arts & Sciences. Open to Physics majors only. The faculty mentor must be selected in consultation with the Dean of Arts & Sciences. May not be used for the major in physics. Offered in the fall, spring, and summer. 2 points. For physics majors who have completed at least one semester of laboratory research (PHYS-SHU 997 or 998) and are able to expand this work into a thesis. Requires writing a Thesis (i.e., a full literature search of the subject and a formal written report on the research in publication form), which is defended in front of a committee of three faculty (which includes the faculty sponsor), chosen by the student in consultation with the faculty mentor. (The defense may be a brief oral presentation followed by a question-and-answer session.) The Thesis and defense must be evaluated by the committee, with the cover page of the thesis signed by all committee members, with a copy of the Thesis submitted to the Dean of Arts & Sciences. (It is recommended that the student meet with the faculty committee at least once mid-semester to evaluate and guide the student’s progress on the thesis work.) Prerequisite: none. Fulfillment: General Elective.

PHYS-SHU 1999.1

Physics Research in Shanghai

Fulfillment: General Elective.
Why do some nations succeed while others fail? What is the relationship between regime type and prosperity? Can
“struggling” countries learn from more “successful” ones? How do we define the success and failure of nations in the first place? This course will address these and other questions about the relationship between the domestic politics of a country and the outcomes in the country that most humans care about -- wealth, happiness, stability, opportunity, and more. Students will learn tools for analyzing complicated issues like politics and prosperity through a social scientific lens. Students will master the fundamentals of the area of Comparative Politics through assignments, readings, exams, and hands-on analysis opportunities. Students will be challenged to leave their expectations and presumptions about “good” or “bad” regimes at the door, and come in, sleeves rolled up, ready to rigorously engage in the disciplined practice of Comparative Politics -- including questioning whether it even makes sense to “compare” “politics” at all. The course will prepare students for upper level coursework in Political Science as well as general life success. Prerequisite: None. Fulfillment: Social Science Foundational course; Data Science concentration in Political Science.

SOCS-SHU 160
Introduction to International Politics

What are the causes of war? Why are some countries able to cooperate over issues like trade or the environment, while others are not? What is the role of international organizations and alliances, such as the UN, NATO, and the EU in the international state system? This course will give students an introduction to thinking analytically and systematically about outcomes in the international system, will teach them the prevailing major theories about these issues, and will equip students to begin to formulate their own answers to these questions. Students will learn a set of formal tools to analyze complex world events, which will prepare them for upper level international relations and other social science courses, as well as to become comfortable applying social science methodologies and theories to better understanding the world around us. The class will use some basic math, including introductory game theory, and some background in infering statistical results will be helpful, but is not required. Over the course of the semester students will be challenged to apply the models and theories from class to real world situations. Prerequisite: None. Fulfillment: Social Science Foundation; GCS Politics, Economy and Environment of China; Data Science concentration in Social Science/Political Science.

SOCS-SHU 170
Introduction to Global Health

This course provides an introduction to current challenges in global public health. The central concepts and tools will be introduced, and health policies and health systems will be analyzed in different environments. We will discuss the role of demographics, geography, and socio-economic factors like income, resources and infrastructures disparities. We will discuss in depth a few important case studies, such as the rise of life expectancy and the epidemiological transition, and aging and global health, underline the role of environmental factors in global health, and discuss the new trends of global health for the immediate future. Prerequisite: None. Fulfillment: This course satisfies STS Core Curriculum; and Social Science Major Foundational course.

SOCS-SHU 199
Global Transportation

This course analyzes the impacts of different forms of transportation on society and urban development. Through interactive discussions of case studies drawn from a wide variety of places and modes of transit, we will explore how variation in transportation characteristics relates to issues of urban studies, politics, the economy, health, environmental studies, business, and society. At the end of the course, students will have the opportunity to analyze a topic of their choosing in a final research project, drawing on the skills they have learned over the semester. Prerequisite: None. Fulfillment: Social Science Urban Studies Focus 200 level course.

SOCS-SHU 201
Planning Global Cities: Urban Form and Spatial Transformation

This course takes an interpretative look at the spatial conditions of our rapidly urbanizing world. It focuses on comparisons and contrasts between urban development patterns of global cities, such as New York City, Shanghai, Abu Dhabi, and Mumbai. By introducing multiple scales (neighborhood, city, and regional) of urban growth, the course seeks to foster an understanding of the socio-economic processes, physical planning and design practices, cultural influences, and policy interventions that influence urban design and planning. While introducing the basic analytic skills necessary for spatial interpretation, the course addresses the challenges and opportunities of future smart cities in the era of urban big data. Pre-requisite: None. SOCS-SHU 133 Urbanization in China is recommended but not required. Fulfillment: Social Science Focus Self-Designed/Urban Studies 200 level.

SOCS-SHU 203
Global Urbanism

Today, more than half of the earth’s human population lives in urban areas. Why did urban areas initially develop, how have humans aimed to shape them, and what are today’s most pressing urban challenges? In this course, we survey key historical moments that shaped urbanism, the core tools used by urban planners throughout history, and the issues that animate urban areas and occupy planners in the modern world. While the course is grounded in the profession of urban planning as a key contributor to the development of cities, it also emphasizes a global understanding of the political, socio-economic, environmental, and technological forces that both motivate and challenge planners and impact cities independent of the formal planning process. Prerequisite: Sophomore Standing. SOCS-SHU 133 Urbanization in China is recommended but not required. Fulfillment: Social Science Focus Self-Designed/Urban Studies 200 level.
SOCS-SHU 204
Environmental System Science

When considering predictions by many scholars of apocalyptic scenarios, we are left asking: Has humanity escaped the pending environmental disasters? Numerous environmental problems—like global climate change, massive extinctions, increasing pollution—are still threatening the sustainability and prosperity of global societies. Will the new apocalyptic predictions become realities? Can we sustain the current pace of economic growth indefinitely? What can we do to survive and thrive? To equip students with the knowledge needed in answering those questions, this course offers a comprehensive survey of the key topics in environmental science, using a system science perspective. The system science perspective provides insights into why some environmental issues are nonlinear, surprising, and difficult to solve. Moreover, the system science perspective also unravels the hidden connections between various environmental topics including human population; global chemical cycles; ecosystems and biodiversity; energy flows in nature; agriculture and food systems; energy systems from fossil fuels to renewable forms; water resources; atmosphere and climate change; urban environments. Prerequisite: None. Environment and Society is (SOCS-SHU 135) recommended but not required Fulfillment: CORE STS; Social Science Focus Environmental Studies 200 level.

SOCS-SHU 205
Fundamentals of Spatial Analytics

Recent advances in spatial data science have changed how we do almost everything, from calling a cab, ordering food delivery, to managing complex networks of supply chains. These new applications generate vast amounts of spatial data. To make sense of spatial data, we need spatial analytics, a framework and a toolbox to analyze the locations of, distances and interactions between spatial objects. This course introduces different types of spatial data and reviews a range of geospatial methods to explore spatial data. Important concepts in spatial thinking, cartography, geographic information science, and remote sensing will be introduced and discussed with real-world examples and lab exercises. This course also provides tools to generate spatial insights in other disciplines, such as economics, public policy studies, sociology, anthropology, political science, environmental and urban studies. Prerequisite: None. Sophomore status is recommended but not required.

SOCS-SHU 206
Mapping and Spatial Analysis

Maps have the power to shape how we see and understand the world. This course asks students to think critically about maps, spatial data, and the cartographic process. Students will engage in hands-on exercises to gain experience with map design and a variety of spatial analysis tools. Mapping is used in research across a wide range of social science disciplines, from political science to urban studies to environmental science. This course draws on interdisciplinary readings and examples to introduce students to the fundamentals of spatial analysis methods. Students will leave the course with an understanding of how spatial data can contribute to social science research in a variety of disciplines, how cartographic decisions impact outcomes, and how to produce maps and use other tools for spatial analysis. Prerequisite: None. Fulfillment: Social Science Methods Course.

SOCS-SHU 207
Urban and Architectural Design in China

This course introduces students to the field of urban design and architecture in three steps. In the first step, we develop students' understanding and appreciation of architectural design through the introduction of design principles, precedent studies, walking tours and architectural exhibitions. In the second step, we extend the knowledge to a city scale, in which students learn how the decision making processes of urban and architectural design can affect the outcomes of a city. In the third step, we apply the concepts and skills learnt to design a pocket space, in which students work in groups to produce innovative schemes for a selected site (i.e. an urban block) in Shanghai. The goal of the course is to raise student's awareness of urban issues, environmental stewardship, social equity, and economic viability into the creation of place identity. We also encourage students' consciousness and take responsibility for the place (Shanghai) they live in by focusing on three aspects: understanding what you see, what to do, and what to communicate. These aspects will provide students with the basic ideas of the power of architectural design and urban planning. Prerequisite: None. SOCS-SHU 133 Urbanization in China is recommended but not required Fulfillment: Social Science Focus Urban Studies 200 level.

SOCS-SHU 208
Cities at Crossroads: Environmental Challenges and Opportunities in Cities

In the next three decades, urban populations will grow by more than 70 million in the United States, more than 210 million in China, and more than 2 billion in the world. This rapid pace of urbanization continues to create various environmental challenges in cities. Urban residents tend to consume more energy, animal products, and material goods. Urban land expansion leads to losses of valuable agricultural lands, natural habitats and results in more intensive heat waves and flooding. However, almost every urban environmental challenge also presents an opportunity. For example, to achieve the same living standard, urban residents may consume less energy, water, and land per capita compared to their high-income rural or suburban counterparts. The first half of this course will survey six aspects of environmental challenges in cities, including energy, heat, water, food, waste, and land. Through lectures, readings, writings, and discussions, students will understand the past, present, and future of these six challenges, and how they are interconnected with each other. In the second half of this course, students will revisit the six aspects with a more optimistic lens, to understand the possibilities in turning these environmental challenges into opportunities. Prerequisite: None. Fulfillment: CORE STS; Social Science Focus Environmental Studies/Urban Studies 200 level.
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Chinese families were governed by Confucian ethics, Chinese families in the 20th century have also been shaped
The family, one of the key social units, has changed significantly over time around the globe. While traditional
The Chinese Family

SOCS-SHU 210
Statistics for The Behavioral Sciences
Students gain familiarity with data description, variance and variability, significance tests, confidence bounds, and
linear regression, among other topics. Students work on social science data sets, learn approaches to statistical
prediction, and learn to interpret results from randomized experiments. Prerequisite: None. Fulfillment: Social
Science Methods course.

SOCS-SHU 220
Law and Society in the US

This course is an introduction to law and its role in society in the US from a practical and a critical standpoint. In
the first part of the course we engage in legal analysis and writing about cases in contracts, torts, criminal
and constitutional law. This part of the course is an introduction to “how lawyers think” and how lawyers and judges
write about legal issues. Students learn to “brief” and debate several cases each week. In the second part of the
course we take a wider and more critical view of the civil litigation and criminal justice systems in practice. We
look at instances where law has changed society and where society has changed the law, especially in the area
of economic class and race and women's rights. We consider classic questions in the philosophy of law as well as
contemporary radical critiques of the American legal system. We conclude the course with a moot court on a case
currently before the US Supreme Court. Pre-requisite: None.

SOCS-SHU 227
Inequality and Society

Inequality has reemerged as a central concern in social science research and also in the contemporary world.
Studies of social stratification and mobility seek to understand how patterns of inequality emerge and persist over
time, and what the implications of inequality are for society, families and individuals. This course will introduce the
basic concepts and theories in analyzing social and economic inequalities in the contemporary era. Readings on
selected topics will be drawn from the studies on the US, China, and other countries as available. Prerequisite: None.
Fulfillment: Social Science Focus Course, 200-level, for the Sociology and Political Economy tracks.

SOCS-SHU 228
Merchant, Chiefs, and Spirits

Brokers and intermediaries bring people together for material or symbolic rewards, often overcoming a lack of
trust or information between strangers. Brokers have been viewed, over time, with endearment as well as with
suspicion, more recently viewed as superfluous middle-men in a supposedly “friction-free” world. Despite several
predictions about the end of brokers, they are still present and thriving in different forms and scales. How do we
think of brokers in an increasingly (inter)networked, digitized, and automated world? We explore the role of brokers
and intermediaries across a range of social, cultural, and political relations and institutions, including gender,
media, political rule, public health, infrastructure, and religion. Course readings are drawn from various disciplines
and fields, including anthropology, sociology, political science, economics, and history, and we consider how
inter-disciplinary discussions and debates have approached the concept of mediation over time. Prerequisite: None.
Fulfillment: Social Science New Challenges core course; Humanities Advanced (18-19: Topic) course.

SOCS-SHU 229
Capitalism, Socialism, Communism: Theory and Practice

The ideological clash between capitalist and communist regimes shaped much of the politics of the 20th century,
and continues to frame the discourse of world politics with the rise of China as a global power. In this course,
we study the varieties of capitalism, socialism, and communism envisioned by theorists and put into practice by
nations. We examine the economic and political aspects of these regime types in their imagined and existing forms
to develop a taxonomy with which to classify and evaluate contemporary regimes. Course case studies include
the U.S., Sweden, and China, and students complete a case study of another regime as a final project. PREREQ FOR
SOCS-SHU 229 is Sophomore standing or above required. Fulfillment: Humanities Interdisciplinary course (18-19:
Topic); Social Science Core Classic Problems in Social Science/Focus Political Economy/Political Science 200 level.

SOCS-SHU 232
International Law and Institutions

How does the application of international law by international institutions, and through treaties among states,
contribute to the peace and well being of the peoples of the world? What are the sources of international law? Who
says what international law is, and who may compel obedience? What areas of human life does international law
address? What are the legal, political and moral foundations of international institutions such as the United Nations
and the UN Security Council, the International Monetary Fund and the World Bank, the International Court of Justice
and the International Criminal Court? In this course we examine core concepts in international law and crucial
players in its formation and enforcement, and consider compelling critiques of its moral force and efficacy, focusing
throughout the course on several international crises in recent history, to better understand these questions. Prereq:
None Fulfillment: Social Science Focus International Relations/Political Science 200 level.

SOCS-SHU 236
The Chinese Family

The family, one of the key social units, has changed significantly over time around the globe. While traditional
Chinese families were governed by Confucian ethics, Chinese families in the 20th century have also been shaped
by state policies, modernization, and globalization. This course introduces students to family values and practices
around marriage, reproduction, parenting, and intergenerational care in Chinese societies, especially in their modern history. It also contextualizes family values and practices and their transitions within broader demographic, social, and cultural changes in the Chinese and international settings. In this course, students engage with historical and modern cultural artifacts as well as scholarly work on Chinese families, and reflect on their own experiences with, observations of, and beliefs about Chinese families. In this way, students develop a nuanced way of understanding and analyzing family-related issues in the Chinese and global contexts. Prerequisite: Sophomore standing or above. Fulfillment: CORE SSPC or IPC; Social Science Classic Problems core; GCS Chinese History, Society and Culture.

SOCS-SHU 245
Ethnographic Thinking

While ethnography—literally “to write” (grapho) “people” (ethnos)—has become synonymous with anthropology, it signifies a range of research methodologies widely used within the social sciences. The course considers discussions and debates about ethnographic research, ethics, and representation within the social sciences and beyond. The readings survey ethnographic theory and practice through a number of conceptual and methodological domains, including the problems they raise. Course topics are: objectivity, critiques of representation, participant-observation, cultural relativism, ethno-history, archives, conflict, interpretation and discourse analysis, verifiability, and life histories. Prerequisite: None.

SOCS-SHU 247
Computational Urban Science and Big Data

The concept of ‘digital smart city’ has been actively discussed in existing literature of computational urban science for its impacts around the globe. The essential research questions include: (1) what are key metrics to be included in promoting digital transformation of future cities? and (2) what role do the digital algorithms play in the construction of urban digitalization platforms that diagnose the sustainable operation of cities? This course first reviews the theoretical framework of smart city development and current trend on urban digitalization. Then the course introduces computational methods of urban science (focusing on urban computation and city digital algorithm) in the following three aspects: fundamental, urban scene, and city index. By investigating the relevant supporting algorithms, analyzing application scenarios in various societal backgrounds, selecting appropriate computational methods, this course brings forth the city vital sign system for diagnosing future urban transformation and new challenges for urban policy making. Prerequisite or Co-requisite: SOCS-SHU 201 Planning Global Cities and/or CSCI-SHU 101 Introduction to Computer Science. SOCS-SHU 133 Urbanization in China and CSCI-SHU 210 Data Structures are recommended but not required. Fulfillment: Social Science Methods Course and 200 level Focus course for the Urban Studies Track.

SOCS-SHU 250
Why Is It So Hard to Do Good?

Why is it so difficult to eliminate some of the greatest causes of human suffering—war, state-failure, poverty, and tyranny? This course examines moral and practical controversies over how we ought to respond to these problems. We will focus in particular on whether, and if so how, the international community is justified in intervening in poor and violent parts of the world. By the end of the course students will be better at analyzing and discerning the plausibility of policy proposals and ideas. Prerequisite: None. Equivalent to CORES-AD-78. Fulfillment: Social Science Core New Challenges in Social Science.

SOCS-SHU 254
Ethnographies of Change in China

China’s economic rise and shifting politics are shaping the world today, but how do these rapid changes affect daily life for the country’s 1.4 billion people? In this class we focus on diverse daily experiences of work, family, gender and sexuality, poverty and wealth, ethnic difference, religion, political engagement, illness and wellness, and environment for people in contemporary China. We examine these topics through ethnography – cultural analysis based on close observation and interaction, presented in writing and film. We examine how Chinese reformers and revolutionaries aspired to change Chinese culture in the Republican Period and Mao years, as well as how foreign and native scholars have grappled with the overwhelming changes in everyday life since Reform and Opening Up. Students in this class develop an understanding of what cultural change means to Chinese people today. Prerequisite: None. SOCS-SHU 136 recommended but not required Fulfillment: CORE SSPC or HPC; Social Science Focus Anthropology 200 level; GCS Chinese History, Society, and Culture; Humanities Advanced Course (18-19: Topic Course).

SOCS-SHU 255
The End of Authority: Politics in a Post-Truth Era

People have looked to a variety of “authorities” for verifiable, believable information around which they could build a worldview. In the 21st century those old sources of authority are in crisis, as the public simply refuses to believe what individuals and institutions assert to be true. Growing skepticism has eroded institutional authority, culminating in what’s been widely called “Post-Truth politics.” This course will examine the development of an intensely suspicious polity at the very time when more information, from more sources, than ever available in human history has changed the very act of “knowing.” This has created a perilous landscape for journalists, policy-makers, and citizens. We will examine what the public believes, why it believes, the increasingly tribal nature of “knowing” in the 21st century, and what this means going forward. Prerequisite: None. Sophomore standing is recommended but not required.
SOCS-SHU 260
Contemporary Challenges in Global Health

This course is centered on current and future challenges pertaining to global public health in the areas of environmental and planetary health, girls' and women's health, and aging. Some topics covered during Introduction to Global Health will be revisited more in depth. This course encourages students to develop their critical and original thinking, their curiosity, creativity, collaboration, rigor, communication, and empathy.

SOCS-SHU 265
Population and Society in China

This course offers an introduction to population study from a sociological perspective. It covers classic topics of fertility, mortality, and migration, and more contemporary extensions into the fields of population aging, gender inequality, marriage and families, and sustainable development. It also provides an overview of the data sources and basic methods commonly used in demographic research, including life tables and the calculation of life expectancy, fertility, and mortality rates. This course explores population issues in Chinese society and examines Chinese demographies in a global perspective. It aims to help students to understand the roots of population structures, processes, and consequences for individuals, families, and societies at the local, national, and global levels. Prerequisite: None. Fulfillment: GCS elective Chinese History, Society, and Culture; Social Science Focus Sociology 200 level.

SOCS-SHU 270
Social Change in Contemporary China

This course surveys post-1949 Chinese society, focusing on socioeconomic changes since 1978. It draws from scholarly work on China in sociology, economics, and political science. It explores the basic institutional make-up of Chinese society, the structural changes brought forth in the economic reform era, and how these institutions configure social life in contemporary China. Attention is paid to both changes from and continuities with the pre-reform past. After taking this course, students will be equipped with background information necessary to understand China's complex economic, political, and social phenomena, and the impact of reform on social structures/institutions, individuals' life chances, and social relations in contemporary China. Prerequisite: Sophomore standing or above required. Fulfillment: CORE SSPC or IPC; Social Science Core New Challenges in Social Science.

SOCS-SHU 275
US-China Relations

This course examines the complexities of the bilateral relationship between the People's Republic of China (China) and the United States (US), focusing on their historical rapport, major debates, and current relations. Topics include Sino-US economic relations, media reporting, variation in political systems, global politics, climate/energy issues, military affairs, and contested territories. Prerequisite: SOCS-SHU 160 is recommended, but not required. Fulfillment: Core SSPC or IPC; GCS China and the World/The Politics, Economy, and Environment of China; SS Focus International Relations/Political Science 200 level; HUMN 18-19 Topic.

SOCS-SHU 303
Aviation and Society

This course examines aviation's impact on and relationship with society, economics, politics, culture, health, and the environment. Topics will include aviation history and development, its influence on cities and economies, its complex political environment, social concerns related to climate change and public health, and the ways these relationships may evolve in the future. We will discuss and analyze case studies that illustrate variation in these phenomena. Students will both learn about the theory and engage in the practice of social science research as it relates to aviation, culminating in a substantive final comparative analysis project. Prerequisite: Sophomore status.

SOCS-SHU 313
Urbanization in China recommended but not required. Fulfillment: Social Science Focus Urban Studies 300 level.

SOCS-SHU 318
Ethnographic Methods

This course is a practicum-based seminar in methods of ethnographic fieldwork and anthropological inquiry and writing. The course explores the conceptual and critical basis of ethnography through fieldwork assignments and readings. The approach of the course is both experiential and experimental—how do we build theories about the world and our place in it? How does anthropology secure evidence and meaning in ways that are empirical, comparative, and deeply theoretical? The course offers students the opportunity for creative and rigorous training in ethnographic methods as well as a chance to produce a piece of ethnographic work. Prerequisites: None. Fulfillment: Social Science Methods; Humanities 18-19 Topics; Data Science concentration in Social Science.

SOCS-SHU 330
Urban Political Ecology

As environmental crises intensify across the planet, and with more than half of humanity living in cities – perhaps two out of three by 2050 – the city is perhaps the key site where future ecological understanding and intervention is needed. However, as there is no such thing as an "apolitical" ecology, the task of considering the city ecologically presents a challenge. Knowledge about the nonhuman, biophysical world must be integrated with human social relations and the political processes that generate uneven and unjust urban landscapes. Our goal in the course is to take up this challenge, to develop a theoretically-informed understanding about cities, ecology, and power, and to apply this thinking in the development of a research project. Prerequisite: SOCS-SHU 135 Environment and Society.
or SOCS-SHU 133 Urbanization in China Fulfillment: Social Science Focus Environmental Studies or Self-designed Urban Studies 300 level.

SOCS-SHU 332
Global Mental Health

Utilizing research from multiple fields including psychology, anthropology, sociology, medicine, public health and epidemiology, students will explore 1) approaches to the treatment and prevention of mental ill health and behavioral disorders, 2) the role of culture in mental illness, 3) epidemiological approaches to study and measure the prevalence and incidence of mental ill health, 4) trends in the field (e.g., implementation science), and 5) mental health among key populations (migrants). Readings in the course will focus on peer-reviewed research literature. A particular emphasis will be placed on research and case examples from Asian country contexts, so the course will have particular local and regional relevance. Prerequisite: Sophomore standing AND SOCS-SHU 170 Introduction to Global Health or PSYC-SHU 101 Introduction to Psychology Fulfillment: CORE STS; Social Science Focus Global Health or Psychology 300 level.

SOCS-SHU 334
Legal Psychology

The course provides an overview of research in legal psychology and how it can be used to improve criminal investigations, legal processes, and judicial decision-making. For example, we consider factors that negatively affect the reliability of witness statements and what can be done to improve them, issues related to child witnesses and criminal investigations involving children, and criminal profiling and dangerousness assessment of offenders. The course adopts an interdisciplinary approach, examining the influence of organizational, societal and cultural factors on legal practices and procedures. The course ends with a mock trial, based on materials created from real criminal cases, in which students adopt the role of either a psychological expert or a lawyer. Prerequisite: PSYC-SHU 101 Intro to Psychology OR SOCS-SHU 220 Law and Society in the U.S. Fulfillment: CORE STS; Social Science Core New Challenges in Social Science or Focus Psychology 300 level; Data Science Concentration in Psychology.

SOCS-SHU 339
Comparative Revolutions

Why do some countries experience revolution? What differentiates a revolution from a civil war, military coup, or foreign invasion? Importantly, how do various factors or variables come together to create revolution and can these constitute a generalizable theory of the emergence of revolution? This course is based on the study of revolutions in the modern context. Also, the course will hone your skills in social science writing, in qualitative comparative methods, and in theory building. We will define revolution and examine competing theories about its causes, outcomes, and processes. While examining the cases of France, Russia, and China, we will be particularly concerned about explaining why revolution occurs. We will then consider how more contemporary cases challenge or support those theories, focusing on the case of Iran and expanding the study to other cases while considering examples that might not fit our definition of revolution. As states face tumultuous change, the study of social movements and revolutions becomes particularly salient for both comparative politics and international affairs. Prerequisite: SOCS-SHU 160 or SOCS-SHU 150.

SOCS-SHU 341
Cross-Strait Relations

The relationship across the Taiwan Strait has been a source of tension in East Asia for decades, not only between Taiwan and mainland China, but also as a potential flashpoint in the relationship between China and the United States. Furthermore, Taiwan's geostategic position and territorial claims make it of interest to other states in the region. This course aims to introduce students to the complex sources of these tensions and the dynamics of these relationships, all of which are rooted in the two sides' closely linked histories. Students in this course develop a strong grasp of the dynamics of the cross-Strait relationship, including the role of the U.S., while honing their critical thinking and analytical skills through focused discussions of the readings and an independent final paper project. Prerequisites: SOCS-SHU 150 Introduction to Comparative Politics or SOCS-SHU 160 Introduction to International Politics or GCHN-SHU 110 The Concept of China. Fulfillment: CORE SSPC or IPC; GCS China and the World; Social Science Focus Courses International Relations/Political Science - 300 level; Humanities 18-19 Topic Courses.

SOCS-SHU 350
Empirical Research Practice

This is a hands-on course in conducting empirical research in behavioral and social sciences with a focus on quantitative methods. The course consists of two major components: First, students work in teams to address a research question provided by the instructor. The teams then plan a small-scale research project, collect empirical data, analyse the data and present the results in a Poster Session. Research projects can involve an experiment, a survey, an observational study or content analysis of empirical materials. The use of the internet as a data collection venue and source of raw materials to analyse is especially encouraged. Second, students write an individual research plan on a topic of their choosing. In some cases, the research plan can be further developed into a Capstone project. The teams are encouraged to make frequent use of instructor office hours for individual consultations. Prerequisites: Sophomore standing and above required. PSYC-SHU 101 recommended but not required. Fulfillment: This course satisfies Social Science Methods Requirement; Data Science concentration in Psychology.

SOCS-SHU 353
Urban Design Studio: Pocket Space in Shanghai

The course teaches students how to participate in an urban design project in three steps. First is the introduction
Housing and Urbanization

Non-Marketing Electives.

Political Economy/Political Science 300 level; Business and Finance Non-Finance Elective; Business and Marketing

We look at risk issues in cross border project financing. Finally we reverse our perspective and consider issues from parts. First we study the highly developed and evolving Chinese inbound foreign direct investment regime. Second the role and ethical obligations of local and international legal counsel and business advisors. The course has three risk and political risk insurance, bilateral investment treaties, dispute resolution and choice of law, and (throughout) diligence and corruption, intellectual property protection, corporate governance and ownership structures, antitrust review, land and environmental issues, labor relations and unions, management compensation, due companies and “state capitalism,” government ministries and the approval process, national security review and in China and Africa. Topics include: multilateral development institutions and development banks, state-owned companies and “state capitalism,” government ministries and the approval process, national security review and antitrust review, land and environmental issues, labor relations and unions, management compensation, due diligence and corporate governance and ownership structures, disclosure in public offerings, foreign exchange controls, private equity structures, cross border financing, political risk and political risk insurance, bilateral investment treaties, dispute resolution and choice of law, and (throughout) the role and ethical obligations of local and international legal counsel and business advisors. The course has three parts. First we study the highly developed and evolving Chinese inbound foreign direct investment regime. Second we look at risk issues in cross border project financing. Finally we reverse our perspective and consider issues from the standpoint of African countries considering Chinese outbound investments. Prerequisite: Sophomore standing or above Fulfillment: CORE SSPC; Interactive Media Business Elective; Social Science Focus International Relations/ Political Economy/Political Science 300 level; Business and Finance Non-Finance Elective; Business and Marketing Non-Marketing Electives.

SOCS-SHU 394 Housing and Urbanization

Why do slums exist next to luxury towers? How can housing help fight climate change? What can local and national governments do to ensure their citizens have access to affordable housing? Why do cities with thousands of vacant homes also struggle with high rates of homelessness? In this course, students grapple with these questions and
many others, developing a broad understanding of housing through a comparative, global lens. Students develop an understanding of the factors impacting housing's physical quality, design, location, and cost, and study how housing relates to the health of individuals, neighborhoods, and the wider economy. An emphasis is placed on identifying policy interventions that can improve housing outcomes. Prerequisite: Sophomore standing. Fulfillment: Social Science Urban Studies Focus 300 level.

SOCS-SHU 401
Social Science Capstone Seminar (4 credits)
Students design and conduct an independent research project in their area of focus using the theories, methods, and data with which they have become familiar over the course of completing the major. Prerequisite: Open only to Social Science majors in the senior year. Fulfillment: Social Science Capstone Course.

SOCS-SHU 410
Social Science Capstone Honors Seminar (4 credits)
This seminar prepares candidates for major honors in Social Science to enroll in the Honors Independent Study in the spring semester of the senior year. In this seminar, students develop a research question, select a methodological approach, assemble a working bibliography, and identify a faculty supervisor for the spring semester independent study. Prerequisite: Department consent is required. Open only to seniors who have been admitted to honors candidacy in Social Science. Fulfillment: Social Science Major Capstone Course.

SOCS-SHU 411
Social Science Honors Independent Study
Candidates for major honors conduct independent research under the supervision of a faculty member in the Social Sciences. Open only to seniors who have been admitted to honors candidacy in Social Science. Prerequisite: SOCS-SHU 410, Social Science Capstone Honors Seminar. Fulfillment: Social Science Capstone course.

SOCS-SHU 445
Topics in Society, Health & Medicine
Check Albert for various relevant topics each semester.

SOCS-SHU 997
Independent Study (1-4 credits)
Students are permitted to work on an individual basis under the supervision of a full-time faculty member in the Social Science discipline if they have maintained an overall GPA of 3.0 and have a study proposal that is approved by a Social Science professor. Students are expected to spend about ten to twelve hours a week on their project for 4 credits. The results of the study are embodied in a report of a type required by the instructor. Department consent is required. Fulfillment: Social Science Major Capstone Course.

PSYC-SHU 101
Introduction to Psychology
This course highlights the fundamental principles and interesting experiments within the field of psychology, aiming to help students understand mind and behavior of themselves and others. It provides a comprehensive overview of scientific study of thought and behavior, covering a wide range of topics such as the biological and evolutionary bases of behavior, sensation and perception, learning, memory, intelligence and thinking, lifespan development, emotion and motivation, human personality, social behavior, behavioral disorders, and psychological treatment of disorders. Opportunities to apply knowledge gained in class are available through various in-class and out-of-class activities. By the end of this course you will have gained a much better understanding and appreciation of who you are and how you work. Prerequisite: None. Fulfillment: Core Curriculum Experimental Discovery (ED), and Social Science Major Foundational course; Data Science concentration in Social Science/Psychology.

PSYC-SHU 201
Social Psychology
Social psychology is about how our thoughts, feelings, and behaviors are influenced by the real or imagined presence of others. The class introduces social psychological theories and research and covers topics such as perception of others and the self, attraction, altruism and helping, aggression, moral thought and action, stereotypes, attitudes, and social influence. We learn about each topic by linking it to everyday life, as well as by seeing how researchers take a scientific approach to studying it. Prerequisite: PSYC-SHU 101 Introduction to Psychology. Fulfillment: Social Science Focus Psychology 200 level course.

PSYC-SHU 234
Developmental Psychology
This course is designed to give students a comprehensive overview of developmental psychology following a chronological approach, covering normative growth and development from conception to adolescence. Specifically, we will examine physical, cognitive, social, and emotional development with an emphasis on psychosocial development in context. This course not only covers major theories and research findings on human development, but also provides students with the opportunity to appreciate the practical significance of sound theory and research. Prerequisite: PSYC-SHU 101. Fulfillment: Social Science Focus Psychology 200 level course; DS concentration in Psychology.
PSYC-SHU 238  
**Abnormal Psychology**

This course focuses on the definition, history, and scope of abnormal psychology, with an emphasis on the psychological factors that control the origins, maintenance, and modification of behavioral disorders. The primary goal of this course is for students to become familiar with up-to-date research in the field but also to critically evaluate how we think about mental illness using theory, research findings, logic, and applied knowledge. A secondary goal is for students to become educated consumers of mental health information to be able to predict the factors that increase the risks for a given disorder and discriminate between treatment types based on efficacy demonstrated in the research literature. Prerequisite: PSYC-SHU 101 Introduction to Psychology. Fulfillment: This course satisfies Social Science focus course: Psychology 200 level.

PSYC-SHU 300  
**Psychology of Justice**

In this class, we examine various fields within psychology that study issues around justice and morality and apply it to real-world contexts. Students learn about moral development in children and adults, people's justice motive, evolutionary and social psychological perspectives on punishment behavior, interpersonal and intergroup processes related to forgiveness as well as alternatives to punishment. Within the area of retributive punishment, we cover specific topics such as the importance of victim empowerment and the theoretical framework of punishment as communication. Students learn how societal and cultural factors shape experienced (in)justice as well as reactions to it, how to apply the theoretical insights to real-world situations of conflicts and perceived injustice, and how an interdisciplinary approach benefits psychological research on this topic. Prerequisites: PSYC-SHU 101 Introduction to Psychology and Sophomore Standing. Fulfillment: Social Science Focus Psychology 300 level course.

PSYC-SHU 329  
**Parenting and Culture**

Examination of parenting views & practice across socio-cultural groups, discussion of similarities & differences in parenting around the globe, how parenting changes over the life course of the child, & how parenting shapes children's development. Prereq: Intro to Psychology. Fulfillment: CORE STS; Social Science Focus Psychology 300 level course.

PSYC-SHU 337  
**Adolescent Development**

This course covers physical, cognitive, and socio-emotional development of adolescents in diverse contexts. Specifically, changes and characteristics of key developmental domains of adolescents, such as family, peer, and romantic relationship, are discussed, with particular attention to contextual factors that influence adolescent development such as culture, gender, and social class. This course is for students who have acquired the basic principles of psychology as well as fundamental knowledge of human development. Prerequisite: PSYC-SHU 101, and PSYC-SHU 234 as a pre- or co-requisite. Fulfillment: Social Science Focus Psychology 300 level course.

PSYC-SHU 344  
**Psychology of Human-Machine Communication and Relationships**

From the perspective of psychological science, developments in machine-learning and AI raise many interesting questions. AI technologies are already proving useful in their ability to monitor and assess human behaviors, emotions, and decision patterns. This is becoming possible through the sheer volume of information available online in connection with individuals, groups, and through the sophistication of predictive algorithms that can see patterns that the human mind cannot. As AI systems, machines, and robots are increasingly built to mimic human beings, will we begin to communicate with, react to, or feel the same towards them as we do to other human beings? If an AI system can assist in an online purchase or a psychological intervention (e.g., a chatbot), can they also become our friends? Could we fall in love with an artificial agent or a robot? In this course, we use the lens of psychological science to investigate these and other aspects of human-machine communication and their effects on human-human relationships. Prerequisite: Introduction to psychology (PSYC-SHU 101) OR Introduction to Neural Science (NEUR-SHU 201) OR Introduction to Computer Science (CSCI-SHU 101) Fulfillment: IMA/IMB elective; Neural Science elective; Social Science Focus Psychology 300 level; Core STS.

PSYC-SHU 349  
**Cultures of Psychology**

The purpose of this course is to critically examine the ways that culture—w/ regard to race/ethnicity, gender, and social class—has shaped major theoretical perspectives in psychology, and to familiarize students with the impact of cultural factors on the evolution of various psychological constructs. Students will explore the multifaceted nature of their own cultural backgrounds and apply it to the establishment of their worldviews. Critical examination of the process of psychological research and scholarship will be emphasized. Prerequisite: PSYC-SHU 101. Fulfillment: This course satisfies Social Science Focus: 300 Level Psychology Track.

PSYC-SHU 352  
**Psychology of Human Sexuality**

The course provides an overview of empirical research into the psychology of human sexuality. The course surveys findings from basic research, theories regarding human sexuality, sexual functioning and its psychological correlates, and clinical research into sexual problems and their treatment. Topics covered include psychological aspects related to sexual and gender minorities, including affirmative counseling approaches for LGBTQ
individuals; current scientific understanding of sexual variations as well as sexual harassment and coercion; sex as a commodity; and psychological aspects related to HIV/AIDS and its prevention. The study of human sexuality is inherently multidisciplinary as sexuality is a biopsychosocial phenomenon. Even though the course focuses on the psychological level of analysis, cultural, societal and legal aspects related to sexuality in a global context are relevant to many of the topics covered. As an example, we explore the topic of sexual racism/racial fetishism as well as legislation related to sexuality in different societies. Prerequisite: Intro to Psychology.

PSYC-SHU 360
Evolutionary Psychology

Are we Zombies? Just vehicles, that is, for carrying copies of genes? How can that be given that our experience seems to suggest our own selves are important? It is beyond dispute that the human brain is a result of evolution. However, opinions differ regarding the extent to which evolution has created either a general purpose learning machine, the contents of which are driven primarily by culture and socialization, or a mind that consists of more specific mechanisms intended to tackle particular problems of survival and reproduction. We review the central theoretical concepts of evolutionary psychology and the empirical evidence for them. We explore problems of survival, emotions, sex and mating, as well as family and group living. We also examine the major criticisms of the evolutionary psychological framework. Finally, we discuss how the evolutionary view of human psychology affects our understanding of who we are. Prerequisite: PSYC-SHU 101 Introduction to Psychology Fulfillment: CORE STS; Social Science Focus Psychology 300 level.
Elementary Arabic I
This course is designed for learners with no prior knowledge of Arabic. Students who have studied Arabic before or who have prior knowledge of Arabic are required to take a placement test. This is a full semester (or equivalent session) course during which students first learn the Arabic alphabet, then move on to work on the sentence and paragraph levels. It is an interactive course designed to build the student's abilities in listening, speaking, reading, and writing. At the end of the semester students should be able to carry on a short conversation; ask and answer questions; introduce themselves and others; provide simple biographical information; interact in simple daily life situations; ask for assistance; express likes and dislikes; read short texts; and gain a basic understanding of Arab culture. Types of tasks and assignments required for this course include daily homework assignments, periodic quizzes, brief presentations, short essay writing, and a final exam. Prerequisites: None. Fulfillment: General Elective.

Elementary Chinese I
This course is the first part of a one-year elementary-level Chinese course designed for students who have no or almost no knowledge of Mandarin Chinese. It is designed to develop language skills in listening, speaking, reading, and writing as it relates to everyday life situations. The objectives of the course are: (1) to master the Chinese phonetic system (pinyin and tones) with satisfactory pronunciation; (2) to understand the construction of commonly used Chinese Characters (both simplified and traditional) and learn to write them correctly; (3) to understand and use correctly basic Chinese grammar and sentence structures; (4) to build up essential vocabulary; (5) to read and write level appropriate passages (100-150 characters long); and (6) to become acquainted with aspects of Chinese culture and society related to the course materials. Prerequisite: None. Fulfillment: General Elective.

Elementary Chinese I - FoS1
This specially-designed 2-credit elementary-level Chinese course for students enrolled in Foundations of Science who have no or almost no knowledge of Mandarin Chinese. It covers the first half of the 4-credit Elementary I course and is designed to develop language skills in listening, speaking, reading, and writing as it relates to everyday life situations. Prerequisite: None. (Special for freshman students enrolled in Foundation of Science). Fulfillment: General Elective.

Elementary Chinese I - FoS 2
This specially-offered course for students enrolled in Foundations of Science is the second half of the regular Elementary Chinese II course, designed for students who have completed the first half of NYU-SH's Elementary Chinese II for students in FoS. It is designed to reinforce and further develop language skills in listening, speaking, reading, and writing as it relates to everyday life situations. Prerequisite: Successful completion of first half. Fulfillment: General Elective.

Elementary Chinese II
This course is the second part of a one-year elementary-level Chinese course designed for students who have completed NYU-SH's Elementary Chinese I or equivalent. It is designed to reinforce and further develop language skills in listening, speaking, reading, and writing as it relates to everyday life situations. The objectives of the course are: (1) to continue mastering the Chinese phonetic system (pinyin and tones); (2) to become further familiarized with the construction of commonly used Chinese Characters (both simplified and traditional); (3) to understand and use correctly basic Chinese grammar and sentence structures; (4) to continue building up essential vocabulary; (5) to read and write level appropriate passages (150-200 characters long); and (6) to become acquainted with aspects of Chinese culture and society related to the course materials. Prerequisite: CHIN-SHU 101 or CHIN-SHU 101S2 Elementary Chinese I - FoS 2. Fulfillment: General Elective.

Elementary Chinese II FoS
This specially-offered course for students enrolled in Foundations of Science is the first half of the regular Elementary Chinese II course, designed for students who have completed NYU-SH's Elementary Chinese I or equivalent. It is designed to reinforce and further develop language skills in listening, speaking, reading, and writing as it relates to everyday life situations. Prerequisite: CHIN-SHU 101 or 101S2. Fulfillment: General Elective.

Elementary Chinese II FoS 2
This specially-offered course for students enrolled in Foundations of Science is the second half of the regular Elementary Chinese II course, designed for students who have completed the first half of NYU-SH's Elementary Chinese II for students in FoS. It is designed to reinforce and further develop language skills in listening, speaking, reading, and writing as it relates to everyday life situations. Prerequisite: Successful completion of first half.

Elementary Chinese for Advanced Beginners
This course is intended for students who can converse in Mandarin Chinese about matters related to everyday life.
situations but cannot read and write at the same level. This includes students who were raised in a non-Chinese speaking country but in a home where the Mandarin Chinese dialect was spoken, and/or students who have acquired a certain level of Mandarin Chinese language proficiency (primarily speaking and listening) by living or working in a Chinese speaking country/region for an extended time. Though speaking and listening will be an integral part of the course, the major focus will be on developing students’ competence in reading and writing. The objectives of the course are: 1) to master the Chinese phonetic system (pinyin and tones) with satisfactory pronunciation; 2) to understand the construction of commonly used Chinese Characters (both simplified and traditional) and write them correctly; 3) to build up essential vocabulary needed to read and write about topics covered in the textbook; 4) to understand and use correctly basic Chinese grammar and sentence structures; 5) to comprehend level appropriate passages and to be able to perform simple sentence analysis; 6) to write level appropriate essays (250-300 characters long) with grammatical, accuracy as well as cohesion and coherence; 7) to become acquainted with and be able to discuss in speech and writing aspects of Chinese culture and society related to the course materials. Prerequisite: N/A. This course is followed by Intermediate for Advanced Beginners. Fulfillment: General Elective.

CHIN-SHU 201
Intermediate Chinese I

This course is the first part of a one-year intermediate-level Chinese course designed for students who have completed NYU-SH’s Elementary Chinese II or equivalent. It is designed to consolidate and develop overall aural-oral proficiency. Objectives are: (1) to further develop competence in obtaining information from more extended conversation; (2) to express and expound on, in relative length, feelings and opinions on common topics; (3) to develop vocabulary needed to discuss common topics and begin learning to decipher meaning of compound words; (4) to develop reading comprehension of more extended narrative and expository passages; (5) to write, in relative length (200-250 characters long), personal narratives, informational narratives, comparison and discussion of viewpoints with level-appropriate vocabulary and grammatical accuracy, as well as basic syntactical cohesion; (6) to continue being acquainted with aspects of Chinese culture and society related to the course materials. Prerequisite: CHIN-SHU 102. Fulfillment: General Elective.

CHIN-SHU 201A
Intermediate Chinese I - Accelerated

This accelerated course is the first part of a one-semester intermediate-level Chinese course designed for students who have completed NYU-SH’s Elementary Chinese II or equivalent. It is designed to consolidate and develop overall aural-oral proficiency. Objectives are: (1) to be able to obtain information from more extended conversation; (2) to express and expound on, in relative length, feelings and opinions on common topics; (3) to develop vocabulary needed to discuss common topics and begin learning to decipher meaning of compound words; (4) to develop reading comprehension of more extended narrative and expository passages; (5) to write, in relative length (200-250 characters long), personal narratives, informational narratives, comparison and discussion of viewpoints with level-appropriate vocabulary and grammatical accuracy, as well as basic syntactical cohesion; (6) to continue being acquainted with aspects of Chinese culture and society related to the course materials. Prerequisite: CHIN-SHU 102 or 102A; Co-requisite: CHIN-SHU 202A. Fulfillment: General Elective.

CHIN-SHU 202
Intermediate Chinese II

This course is the second part of a one-year intermediate-level Chinese course designed for students who have completed NYU-SH’s Intermediate Chinese I or equivalent. It is designed to continue consolidating and developing overall aural-oral proficiency, gradually focusing more on semi-formal or formal linguistic expressions. Objectives are: (1) to further develop competence in obtaining information from more extended conversation; (2) to express and expound on, in more extended length, feelings and opinions on socio-cultural topics; (3) to develop more specialized vocabulary needed to discuss sociocultural topics; (4) to improve students’ ability to decipher meaning of compound words; (5) to further develop reading comprehension of extended narrative, expository and simple argumentative passages; (6) to learn to solve simple syntactical problems independently; (7) to write, in relative length (250-300 characters long) informational narratives, expository and simple argumentative passages with level-appropriate vocabulary and grammatical accuracy, as well as basic syntactical cohesion; and (8) to continue being acquainted with aspects of Chinese culture and society related to the course materials. Prerequisite: CHIN-SHU 201. Fulfillment: Core Curriculum Language.

CHIN-SHU 202A
Intermediate Chinese II - Accelerated

This accelerated course is the second part of a one-semester intermediate-level Chinese course designed for students who have completed NYU-SH’s Intermediate Chinese I or equivalent. It is designed to continue consolidating and developing overall aural-oral proficiency, gradually focusing more on semi-formal or formal linguistic expressions. Objectives are: (1) to further develop competence in obtaining information from more extended conversation; (2) to express and expound on, in more extended length, feelings and opinions on socio-cultural topics; (3) to develop more specialized vocabulary needed to discuss sociocultural topics; (4) to improve students’ ability to decipher meaning of compound words; (5) to further develop reading comprehension of extended narrative, expository and simple argumentative passages; (6) to learn to solve simple syntactical problems independently; (7) to write, in relative length (250-300 characters long) informational narratives, expository and simple argumentative passages with level-appropriate vocabulary and grammatical accuracy, as well as basic syntactical cohesion; and (8) to continue being acquainted with aspects of Chinese culture and society related to the course materials. Co-requisite CHIN-SHU 201A. Fulfillment: Core Curriculum Language.
HSK Preparation for Intermediate Chinese II

HSK Preparation course is designed for students who co-enroll Intermediate Chinese II. It aims to supplement that course by providing targeted vocabulary, relevant grammatical structures, and test-taking strategies that are specific to the HSK exam. Students in this course will also further develop their language skills in listening, reading, and writing, expand their vocabulary, improve their grammatical accuracy, enhance their ability to create with the language when talking about familiar topics related to their daily life, and also gain more concrete knowledge of Chinese customs and cultures. This course also addresses common mistakes made by Chinese language learners and strategies for how to avoid and self-correct them. Students will hone their test-taking skills and will learn valuable strategies for excelling at the HSK. Co-requisite: CHIN-SHU 202, CHIN-SHU 202A, or CHIN-SHU 211. Fulfillment: None.

Intermediate Chinese for Advanced Beginners

This course is designed for students with near-standard pronunciation and without major grammatical errors, conversational Chinese related to daily life situations and simple sociocultural topics. The objectives are: 1) to be able to obtain information from extended written passages; 2) to both express and expound on, in relative length, feelings and opinions on common social and cultural topics; 3) to expand vocabulary and learn to decipher the meaning of compound words; 4) to develop reading comprehension of extended expository and simple argumentative passages; 5) to solve non-complex textual problems with the aid of dictionaries; 6) to write in relative length personal narratives, informational narratives, comparison and discussion of viewpoints with level appropriate vocabulary and grammatical accuracy, as well as syntactical cohesion; 7) to continue to become acquainted with aspects of Chinese culture and society related to the course materials. Prerequisite: CHIN-SHU 111 Elementary Chinese for Advanced Beginners. This course is followed by Advanced Chinese I. Fulfillment: Core Curriculum Language.

Advanced Chinese I

This course is the first part of a one-year Advanced Chinese course designed for students who have successfully completed Intermediate Chinese II at NYU-SH, or who have at least the equivalent knowledge of Chinese upon registration. It is designed to reinforce and further improve students’ overall communicative competence by incorporating semi-formal or formal usages. The objectives of the course are: 1) to learn to apply formal linguistic expressions in speaking and writing; (2) to acquire specialized vocabulary and patterns necessary for conducting formal discussions of socio-cultural topics; (3) to develop reading comprehension of texts with more advanced syntax; (4) to develop further students' ability to analyze as well as produce sentences with more complex syntactical features; (5) to learn to write expository and argumentative passages in more extended length; and (6) to learn to employ basic rhetoric devices in writing. Prerequisite: CHIN-SHU 202 OR CHIN-SHU 211. Fulfillment: Core Curriculum Language; GCS Major Requirement Language Courses for Advanced GCS Track Non-native Chinese Speakers.

Advanced Chinese II

This course is the second part of a one-year Advanced Chinese course designed for students who have successfully completed Advanced Chinese I at NYU-SH, or who have the equivalent knowledge of Chinese upon registration. It is designed to reinforce and further improve students’ overall communicative competence by incorporating semi-formal or formal usages. The objectives of the course are: 1) to enhance further students' oral and written communicative competence using formal linguistic expressions; (2) to expand further specialized vocabulary and patterns necessary for conducting formal discussions of socio-cultural topics relevant to today's China; (3) to improve further students' reading comprehension of texts with more advanced syntax; (4) to develop further their competence in making context-based guess about the meaning of a new word, and further enhance ability to analyze as well as produce sentences with more complex syntactical features; (5) to improve further their ability to write expository and argumentative passages in more extended length; (6) to improve their ability to effectively employ basic rhetoric devices in writing. Prerequisite: CHIN-SHU 301. Fulfillment: Core Curriculum Language; GCS Major Requirement Language Courses for Advanced GCS Track Non-native Chinese Speakers.

Chinese Immersion Program: Advanced I

Students can enroll in the program and complete Intermediate I and Intermediate II level, or Advanced I and Advanced II level. Students must already be placed at an Intermediate I or Advanced I level. The NYU Shanghai Chinese Language Program is a 9 week summer program intended to enable students who are serious about studying Chinese language in a total immersion environment to cover a semester's worth of material and to earn four NYU Shanghai credits. This rigorous, demanding, and rewarding language program allows students to have first-hand experience in using Chinese in real world situations as well as studying and practicing it in the classroom. To ensure more effective teaching and learning, classes are capped at 10 students. In the afternoons during weekdays, students can participate in extracurricular activities such as Tai Chi, Chinese calligraphy, Chinese cooking, etc. Students participate in these activities based on their preferences and time schedules. For more details, please visit the Chinese Immersion Program website. Shanghai students will not need to formally apply but an interview with a Chinese language instructor and selection to participate will be required. There are two tracks, Intermediate or Advanced. Co-requisite: CHIN-SHU 322.
CHIN-SHU 322
Chinese Immersion Program: Advanced II

Students can enroll in the program and complete Intermediate I and Intermediate II level, or Advanced I and Advanced II level. Students must already be placed at an Intermediate I or Advanced I level. The NYU Shanghai Chinese Language Program is a 9 week summer program intended to enable students who are serious about studying Chinese language in a total immersion environment to cover a semester's worth of material and to earn four NYU Shanghai credits. This rigorous, demanding, and rewarding language program allows students to have first-hand experience in using Chinese in real world situations as well as studying and practicing it in the classroom. To ensure more effective teaching and learning, classes are capped at 10 students. In the afternoons during weekdays, students can participate in extracurricular activities such as Tai Chi, Chinese calligraphy, Chinese cooking, etc. Students participate in these activities based on their preferences and time schedules. For more details, please visit the Chinese Immersion Program website. Shanghai students will not need to formally apply but an interview with a Chinese language instructor and selection to participate will be required. There are two tracks, Intermediate or Advanced. Co-requisite: CHIN-SHU 321.

CHIN-SHU 401
Classical Chinese I for Advanced Mandarin Learners

This course is designed to give students an introduction to basic syntax, grammar, and vocabulary of Classical Chinese through close readings of authentic texts. Almost all these texts are historically significant canon texts that are extremely rich in classical Chinese cultural connotation. They are selected from a wide variety of genres, such as historical literature, philosophical and political writings, written correspondence, poetry, essay, some of which are unique to Chinese culture. The course aims to develop the students' reading and comprehension skills in this highly stylized form of written Chinese, acquaint students not only with the classic Chinese cultural heritage but also underlying working mechanism that is in many ways relevant to the form and usage of today's Mandarin Chinese. Prerequisite: CHIN-SHU 302 or placed out of Advanced Chinese II. Fulfillment: Core Curriculum Language.

CHIN-SHU 403
Interpreting Modern China: Reading the Era of 1919-1949

Chinese language at fourth-year level. Designed to enhance Chinese proficiency through studying authentic materials rich in cultural connotations, focusing primarily on reading and writing. Objectives are: to develop language skills needed for semi-formal and formal presentation on academic topics; to further improve reading comprehension and develop skills needed to conduct textual analysis of passages with sophisticated syntax and semantic nuance; to develop responsiveness to and ability to interpret stylized usage; to advance strategies for autonomous learning of Chinese language from an analytical perspective. For the first part of this year-long sequence, reading materials will generally be selected from China's modern period (1919-1949). Prerequisite for CHIN-SHU 403 is CHIN-SHU 302 OR EAST-UA 206 OR EAST-UA 9206 OR CHINL-UH 3002 OR place out of advanced Chinese II. Fulfillment: Core Curriculum Language.

CHIN-SHU 404
Readings in Contemporary Chinese Culture

Continuation of Chinese language at fourth-year level, with reading materials generally selected from contemporary sources. Prerequisite: CHIN-SHU 403 Interpreting Modern China or CHIN-SHU 302 Advanced Chinese II or place out of Advanced Chinese II. Fulfillment: Core Curriculum Language.

CHIN-SHU 405
Reading Chinese Newspapers

This 4-credit course is a post-advanced Chinese language course, which meets twice a week, 90 minutes for each meeting and is designed for students who have completed Advanced Chinese II(CHIN-SHU-302, or EAST-UA-206) or the equivalent. This course, through intensive and extensive readings of authentic materials selected from major Chinese newspapers and periodicals in China and abroad and robust in and out-of-class exercises and assignments, intends to help students further enhance their language skills with special focus on reading and writing competence, further enrich their knowledge about China society and Chinese culture, and further improve their abilities in conducting in-depth analysis, discussion, debate, comparison, contrast and conclusion orally and in written mode in Chinese language. The articles will be selected from the latest issues in newspapers and periodicals with topics ranging from culture inheritance, social entertainment to economics, technology, new lifestyle, etc., which provide different perspectives for students to observe and study phenomena (including their origins and evolutions) in modern Chinese society and Chinese culture. The course also focuses on language learning, aiming at helping students accumulate more formal written-style vocabulary and getting acquaintance with the modes, structures and characteristics of Chinese formal news reports. Fulfillment: Core Curriculum Language; GCS Major Requirement Language Courses for Advanced GCS Track Non-native Chinese Speakers.

CHIN-SHU 408
Introduction to Chinese Phonetics

This is a 4-credit 400 level post-advanced Chinese course aiming to let students gain the vocabulary of the Chinese phonetic vocabulary and basic knowledge of standard Mandarin sound system. Through the learning and intensive practice of the Chinese syllables, tones, stresses, intonations and rhythms, this course also aims to improve the course participants' Chinese pronunciation and speaking fluency. Students will write and sing Chinese songs and raps, recite and perform classical Chinese poems, give real speeches, and perform dramas and plays. Each participant will receive an initial pronunciation diagnosis and individual feedback on their pronunciation progress throughout the semester. Prerequisite: Advanced Chinese II (or equivalent.) Fulfillment: This would count toward the current Chinese minor and also toward the proposed Chinese Language and Literature Major (for L2 learners).
**CHIN-SHU 410**  
**Written Chinese Discourse**

This is a 4-credit Chinese language course meeting twice a week, 75-minutes per session. It aims to further develop students' writing competence in Chinese language. It proposes to improve students' proficiency, accuracy and ease in written expression so that they can use Chinese language in more professional fields and real life situations in a variety of contexts and registers. They will read contemporary texts from various fields and refine their skills in narration, description, and argumentative writing. They will also develop their skills in practical writing, like emails, reports, film reviews and application letters. The course will adopt the process writing approach, therefore, students will hone their writing skills through writing exercises in and out of class. The majority of the high-stakes assessments will be typewritten. The course also includes a number of handwritten tasks that students complete to reinforce their knowledge of production of characters. Although this course is targeted at improving students' writing competence, it will also enhance their integrated language skills through various classroom tasks, discussions, and learning activities. Prerequisite: Advanced Chinese II (CHIN-SHU 302) or equivalent or by placement exam. Fulfillment: General Elective.

**CHIN-SHU 415**  
**Introduction to Contemporary China I**

This course is a post advanced Chinese language course and is designed for those students who have completed Advanced Chinese II at NYU-SH or NYU (or the equivalent) and intend to further enhance their language skills and knowledge about different aspects of China. It's designed to help students to know the hot issues taking place in modern China and improve their ability to understand the cultural components and thinking modes behind the issues and their ability in expressing their opinions and carrying out discussions and debates on these issues in Chinese language. This course integrates the language learning with the study of social issues of modern China, and covers the authentic materials with topics ranging from China human geography, Chinese political system, Chinese economy, Chinese education, to Chinese science and technology.

**CHIN-SHU 460A**  
**Teaching Chinese Language Through Children's Storybooks**

This is the first part of a two-semester, 4-credit Dean's Service Scholar course that runs for 14 weeks. The course integrates Chinese language learning and teaching with community exploration and service, to introduce students to Chinese language pedagogy and its application in a children's setting, as well as the differences in approach for a university setting. This course will be conducted in an immersive target language environment. The students will have the opportunity to work closely with a local public kindergarten on a curriculum development project on Reading to Children. Students will observe classes, analyze sample teaching videos, prepare teaching plans, conduct mock teaching, conduct field teaching and reflect on their first-hand service learning experiences in Chinese language. As a final project, students will combine the teaching skills they have learned with relevant research in order to create either 1) a teaching manual for incorporation of children's literature into listening comprehension exercises or 2) an original children's book that incorporates targeted pedagogical techniques for Chinese language learning. In the course of pursuing teaching perfection, students will improve their interpersonal skills and communication skills in the target language as well. Prerequisite: Advanced II or equivalent. Fulfillment: General Elective.

**CHIN-SHU 500**  
**Chinese Topic Course: Contemporary Chinese Art and Fashion**

This course is designed for post-advanced level students who are interested in learning about Chinese contemporary art, fashion, and culture while advancing their reading, writing, and conversational skills in mandarin Chinese. Students will be introduced to major works of Chinese artists and fashion designers. Course materials are particularly selected to build and reinforce students' vocabulary, grammar, as well as composition and conversation skills on a variety of topics pertaining to Chinese modernism and postmodernism through conventional and new media. This course is conducted entirely in Chinese. Prerequisite: Advanced Chinese 2 or equivalent. Fulfillment: Can count toward Chinese minor. Can fulfill global language requirement for L1 Chinese study away students.

**CHIN-SHU 9000**  
**Introduction to Conversational Chinese**

This two-credit language course introduces students to Chinese language and culture. It is aimed at students with no prior knowledge of Chinese. The language component of the course runs for 14 weeks and focuses on the development of competence in verbal communication and communication structures which can be used in daily life in China. The culture component includes excursions that are closely tied to the language topics being studied. This course does NOT cover Elementary I. It is designed for students who do not need to complete Elementary I for their major, or have already completed the language requirement for their major, and/or students who have been to two other global sites. Students cannot take this class if they have already: Passed Elementary Chinese 1 or the equivalent or higher; Are a native Chinese speaker. Note: Students enrolled in this 2-credit course must also be enrolled in a four-credit China-focused content course in order to meet the Global Programs study away language requirement. The course must be taken for a letter grade and is not open to students who place at a higher level than Elementary I Chinese. Prerequisite: None. Fulfillment: General Elective.

**CHIN-SHU 9002**  
**Introduction to Conversational Chinese-4 Credits**

This four-credit language course for Study Away Students only introduces students to Chinese language and culture. It is aimed at students with no prior knowledge of Chinese. The language component of the course runs for 14 weeks and focuses on the development of competence in verbal communication and communication structures
which can be used in daily life in China. The culture component includes excursions that are closely tied to the
language topics being studied. Compared to the 2-credit Intro to Conversation Chinese, this 4-credit course will
have a wider coverage of topics, vocabulary and grammar, more activities and field trips, and meet 4 days a week of
in-class instructions over the 14 weeks. This course does NOT cover Elementary I. It is designed for students who do
not need to complete Elementary I for their major, or have already completed the language requirement for their
major, and/or students who have been to two other global sites. Students cannot take this class if they have already:
Passed Elementary Chinese 1 or the equivalent or higher; native Chinese speaker. Prerequisite: None. Fulfillment:
General Elective.

FREN-SHU 1
Elementary French I

Open to students with no previous training in French and to others on assignment by placement test. This course
introduces students to the foundations of French grammar, vocabulary, and structure through practice of the four
skills (listening, speaking, reading, writing). Not equivalent to FREN-UA 10. Only by combining FREN-UA 1 with
FREN-UA 2 can a student complete the equivalent of FREN-SHU 10 and then continue on to the intermediate level.
Prerequisite: None Fulfillment: General Elective.

FREN-SHU 2
Elementary French II

This Elementary French II course is designed to provide students who have already studied one semester of French
(or the equivalent thereof) with continued progress in the French language through the practice of the four skills.
This is a continuation of FREN-SHU 1. To progress to the intermediate level, a student must complete both FREN-
SHU 1 and FREN-SHU 2 (or the equivalent of both semesters, FREN-SHU 10). 4 points. Prerequisite: FREN-SHU 1 or
the equivalent. Fulfillment: General Elective.

FREN-SHU 10
Intensive Elementary French

Open to students with no previous training in French and to others on assignment by placement test. Completes
the equivalent of a year's elementary level in one semester. Offered every semester. 6 points. Prerequisite: None.
Fulfillment: General Elective.

FREN-SHU 11
Intensive Elementary French I

This Intermediate French I course is designed to give students who have completed the elementary sequence
(or the equivalent) a deeper understanding of the French language through the practice of the four skills. Open
to students who have completed the equivalent of a year's elementary level and to others on assignment by
placement test. Not equivalent to FREN-UA 20. 4 points. Prerequisite: FREN-SHU 2 or FREN-SHU 10 (or the equivalent
or by placement exam). Fulfillment: General Elective.

FREN-SHU 20
Intensive Intermediate French

Completes the equivalent of a year's intermediate level in one semester. Offered every semester. 6 points
Prerequisite: Intensive Elementary French or Instructor Permission.

FREN-SHU 30
French Grammar and Composition

Systematizes and reinforces the language skills presented in earlier-level courses through an intensive review of
grammar, written exercises, an introduction to composition, lexical enrichment, and literary analysis. Prerequisite:
FREN-SHU 20 or FREN-SHU 12 (or the equivalent or by placement exam (http://www.nyu.edu/cas/flpexam/)).
Fulfillment: General Elective.

FREN-SHU 110
Business French

Designed for students who wish to learn the specialized language used in French business. Emphasis on oral and
written communication and the acquisition of a business and commercial vocabulary dealing with the varied
activities of a commercial firm (e.g., advertising, transportation, banking). Stresses group work in simulated
business situations and exposure to authentic spoken materials. Prerequisite: FREN-SHU 30 French Grammar and
Composition or the equivalent or take the NYU placement test (http://www.nyu.edu/cas/flpexam/). Fulfillment:
General Elective.

JAPN-SHU 5
Elementary Japanese I

Introductory course in modern spoken and written Japanese, designed to develop fundamental skills in areas of
speaking, listening, reading, and writing. Gives contextualized instructions to develop both communicative and
cultural competency. Systematically introduces the Japanese writing system (Hiragana, Katakana, and Kanji). Open
to students with no previous training in Japanese and to others on assignment by placement test. Prerequisite:
None. Fulfillment: General Elective.
### JAPN-SHU 10
**Elementary Japanese II**

Open to students who have completed JAPN-SHU 5 Elementary Japanese I or the equivalent, or by placement exam (http://www.nyu.edu/cas/flpexam/). This course builds on the foundations of Japanese grammar and language through a balanced approach of the four skills. Students will learn relevant lexical items and grammar points in context. Prerequisite: JAPN-SHU 5 Elementary Japanese I or EAST-UA 247. Fulfillment: General Elective.

### JAPN-SHU 15
**Intermediate Japanese I**

This course is designed to build on the first year Japanese by studying increasingly complex grammatical patterns, vocabulary and phrases, and syntax in order to expand our level of comprehension and developing our ability to produce longer and more nuanced sentences in speaking, reading, and writing. Prerequisite: JAPN-SHU 10 Elementary Japanese II. Fulfillment: General Elective.

### JAPN-SHU 20
**Intermediate Japanese II**

This course is a continuation of Intermediate Japanese I. It is designed for students to learn increasingly complex grammatical patterns, vocabulary and phrases, and syntax in order to expand their level of comprehension and developing their ability to produce longer and more nuanced sentences in speaking, reading, and writing. Furthering reading abilities is one of the major objectives. This course also prepares students to discuss, describe, explain, and summarize various topics by integrating the language skills. Prerequisite: JAPN-SHU 15 or equivalent with a minimum grade of C-, or placement exam (http://www.nyu.edu/cas/flpexam/). Fulfillment: General Elective.

### JAPN-SHU 25
**Advanced Japanese I**

Continuing study of Japanese at the advanced level. Stresses reading comprehension, spoken fluency, and composition; uses original materials, such as newspaper/magazine articles, TV news, and video. Introduces additional Kanji characters. Advanced use of Japanese and character dictionaries. Prerequisite: JAPN-SHU 20 or the equivalent (EAST-UA 249) with a minimum grade of C+. Fulfillment: Counts toward Japanese minor.

### SPAN-SHU 1
**Elementary Spanish I**

Open to students with no previous training in Spanish and to others on assignment by placement test. Beginning course designed to teach the elements of Spanish grammar and language structure through a primarily oral approach. Emphasis is on building vocabulary and language patterns to encourage spontaneous language use in and out of the classroom. No prerequisite. Fulfillment: General Elective.

### SPAN-SHU 2
**Elementary Spanish II**

Open to students who have completed SPAN-SHU 1 or the equivalent, or by Placement Exam. This course builds on the foundations of Spanish grammar and language through a balanced approach of the four skills, with emphasis on building vocabulary and language patterns to encourage spontaneous language use in and out of the classroom. After completion of this course, students take Intermediate Spanish I or Intensive Intermediate Spanish. Prerequisite: Spanish for Beginners I (SPAN-SHU 1, or equivalent) or placement. Fulfillment: General Elective.

### SPAN-SHU 3
**Intermediate Spanish I**

Review of grammar, language structure, and culture, concentrating on fluency and accuracy through listening, speaking, reading, and writing activities. After completion of this course, students take SPAN-SHU 4. Prerequisite: Spanish for Beginners II (SPAN-SHU 2 or equivalent), Intensive Elementary Spanish (SPAN-UA 10), or placement.

### SPAN-SHU 10
**Intensive Elementary Spanish**

This is a one-semester intensive course that covers the equivalent of one year of elementary Spanish in one semester. 6 points. Open to students with no previous training in Spanish and to others on assignment by placement test. Prerequisite: None. Fulfillment: General Elective.

### SPAN-SHU 20
**Intensive Intermediate Spanish**

Promotes proficiency in reading and writing as well as oral performance. This course is an intensive intermediate course that covers the equivalent of one year of intermediate Spanish (SPAN-UA 3 and SPAN-UA 4) in one semester. Prerequisites: Intensive Elementary Spanish or Instructor Permission. Fulfillment: General Elective.

### SPAN-SHU 100
**Advanced Spanish Grammar and Composition**

Expands and consolidates students’ lexical and grammatical understanding of the language and introduces them
to the fundamental principles of expository writing as they apply to Spanish. Utilizes exercises, readings, and intensive practice of various prose techniques and styles. Prerequisite: Intermediate Spanish II (SPAN 4), Intensive Intermediate Spanish (SPAN 20), or assignment by placement test, or permission of the director of language programs. For non-native speakers only. Equivalent courses: SPAN-UA 100 (NY), SPAN-UA 9100 (Madrid & Buenos Aires).

SPAN-SHU 101
Advanced Spanish Conversation

Intensive course in spoken Spanish, designed to give the student fluency in the use of idiomatic, everyday language as well as a comprehensive, practical vocabulary. For non-native speakers only. Advanced Spanish Conversation is a four-credit advanced-level course designed to expand students’ speaking skills beyond the practical, day-to-day language functions. The aim is to achieve a more elaborate and abstract use of the language through the practice of pronunciation, vocabulary, idioms, and structures, within the contexts of selected subject areas. Although the main concentration of the course is on the oral component, reading and writing skills are practiced as well, as a basis for oral expression. The goal of the course is to generate active participation through thought-provoking discussions and creative activities that stimulate critical thinking as well as conversation. This is achieved through authentic readings from contemporary sources — newspapers, magazines, literature, films, music, videos, etc. — that sensitize students to the actual concerns of Spanish. A process of recording, transcribing and editing actual conversations will also help students better their Spanish. Finally, various listening comprehension activities will be included to fine-tune the student’s ear to Spanish sounds. Prerequisite: SPAN-UA 4 or SPAN-SHU 20 or SPAN-UA 9020. Fulfillment: General Elective.

KORE-SHU 5
Elementary Korean I

This is the first semester of Korean, open to students with little to no experience in Korean language study. It is designed to introduce the Korean language and alphabet, Hangul, and provides a solid foundation in all aspects of the language, including speaking, listening, reading, and writing. Students study the language's orthographic and phonetic systems, grammar, syntax, and vocabulary within social and cultural contexts. Prerequisite: None. Fulfillment: General Elective.

KORE-SHU 10
Elementary Korean II

This is the second semester of Korean, open to students who have completed Elementary Korean I (or the equivalent), or by placement exam. It is designed to reinforce the Korean language and alphabet, Hangul, and provides a solid foundation in all aspects of the language, including speaking, listening, reading, and writing. Students study the language's orthographic and phonetic systems, grammar, syntax, and vocabulary within social and cultural contexts. Prerequisite: Elementary Korean I (KORN-SHU 3) or the equivalent, or by placement exam. Fulfillment: General Elective.

ENGD-SHU 101
Deans’ Service Scholars: Language & Power

Linguist James Paul Gee has described English language teachers as standing, “at the heart of the most crucial educational, cultural, and political issues of our time.” This Deans’ Service Scholars course places students at the intersection of service learning, English language teaching, and critical applied linguistics. It is designed to integrate experiential learning with an exploration of the broader forces which influence educational settings. The course is both a study and application of service-learning, a pedagogy combining academic inquiry and engagement with a community outside the university. In the fall semester, with the support of faculty and in partnership with a local volunteer organization, Scholars will teach English at a local school for migrant communities in Shanghai. At the same time, through discussion seminars, readings, and reflective writing, Scholars will explore the social, cultural, and political factors which often intersect with language teaching, and consider how these factors operate in the context of their service learning project. Seminar topics will include linguistic imperialism, language stigma and status, English as a lingua franca, and the recent rise of global Englishes. In the spring semester, Scholars will organize a community engagement project which is based on their experiential and course learning in the fall.

ENGD-SHU 101B
Deans’ Service Scholars: Language & Power

Linguist James Paul Gee has described English language teachers as standing, “at the heart of the most crucial educational, cultural, and political issues of our time.” This Deans’ Service Scholars course places students at the intersection of service learning, English language teaching, and critical applied linguistics. It is designed to integrate experiential learning with an exploration of the broader forces which influence educational settings. The course is both a study and application of service-learning, a pedagogy combining academic inquiry and engagement with a community outside the university. In the fall semester, with the support of faculty and in partnership with a local volunteer organization, Scholars will teach English at a local school for migrant communities in Shanghai. At the same time, through discussion seminars, readings, and reflective writing, Scholars will explore the social, cultural, and political factors which often intersect with language teaching, and consider how these factors operate in the context of their service learning project. Seminar topics will include linguistic imperialism, language stigma and status, English as a lingua franca, and the recent rise of global Englishes. In the spring semester, Scholars will organize a community engagement project which is based on their experiential and course learning in the fall.
Through coursework, volunteer teaching, and community engagement, Scholars will also gain experience in the pedagogical and service approaches of Project-Based Learning (PBL) and Participatory Action Research (PAR). Prerequisite: ENGD-SHU 101A. Fulfillment: General Elective.
EXLI-SHU 9301
City as Text

“City as Text” is a rigorous, 4-credit seminar designed to introduce students to the study away environment through an intensive academic program of cultural preparation and local immersion. Through scholarly and journalistic readings from interdisciplinary perspectives, students develop a nuanced understanding of the local, regional, national, and global forces that bring shape to the character of the city. Multiple class sessions take place in locations around the city, such as ports, markets, industrial centers, parks, pedestrian zones, and other points of interest, where students apply direct observation to examine critically formed questions of place, space and identity. Students draw on the city as a primary resource for academic research and critical inquiry and they produce innovative research projects (digital or print) that reflect on the city at the crossroads of local and global identity. Fulfillment: General Elective.

EXLI-SHU 9302
Experiential Learning

“Experiential Learning” is a 2-credit, Pass/Fail course that supports students in the Spring semester as they enter the workplace culture of the city through Community Placements which may include, but are not limited to, volunteer work, internships, or in some cases, independent research. Through class meetings, reflective writing, and individual conferences, faculty guide students to define an independent research project that grows out of the workplace experience, and which reflects a nuanced understanding of how the workplace culture relates to the social and cultural milieu of the city. Pre-requisite: EXLI-SHU 9301 City as Text. Fulfillment: General Elective.
NYU Shanghai has a world class faculty and administration in Shanghai as well as a large cohort of affiliated faculty from across NYU’s Global Network. At NYU Shanghai professors are scholars, scientists, and artists who are proven and innovative teachers and leaders of international standing in their fields. They have been appointed because of their commitment to cutting-edge research and engaged teaching methods to build the university of the future, NYU Shanghai.
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