



UNDERGRADUATE BULLETIN 2017 - 2018

NYU SHANGHAI
上海纽约大学



UNDERGRADUATE BULLETIN
2017-2018

1555 Century Ave
Pudong, Shanghai
China 200122

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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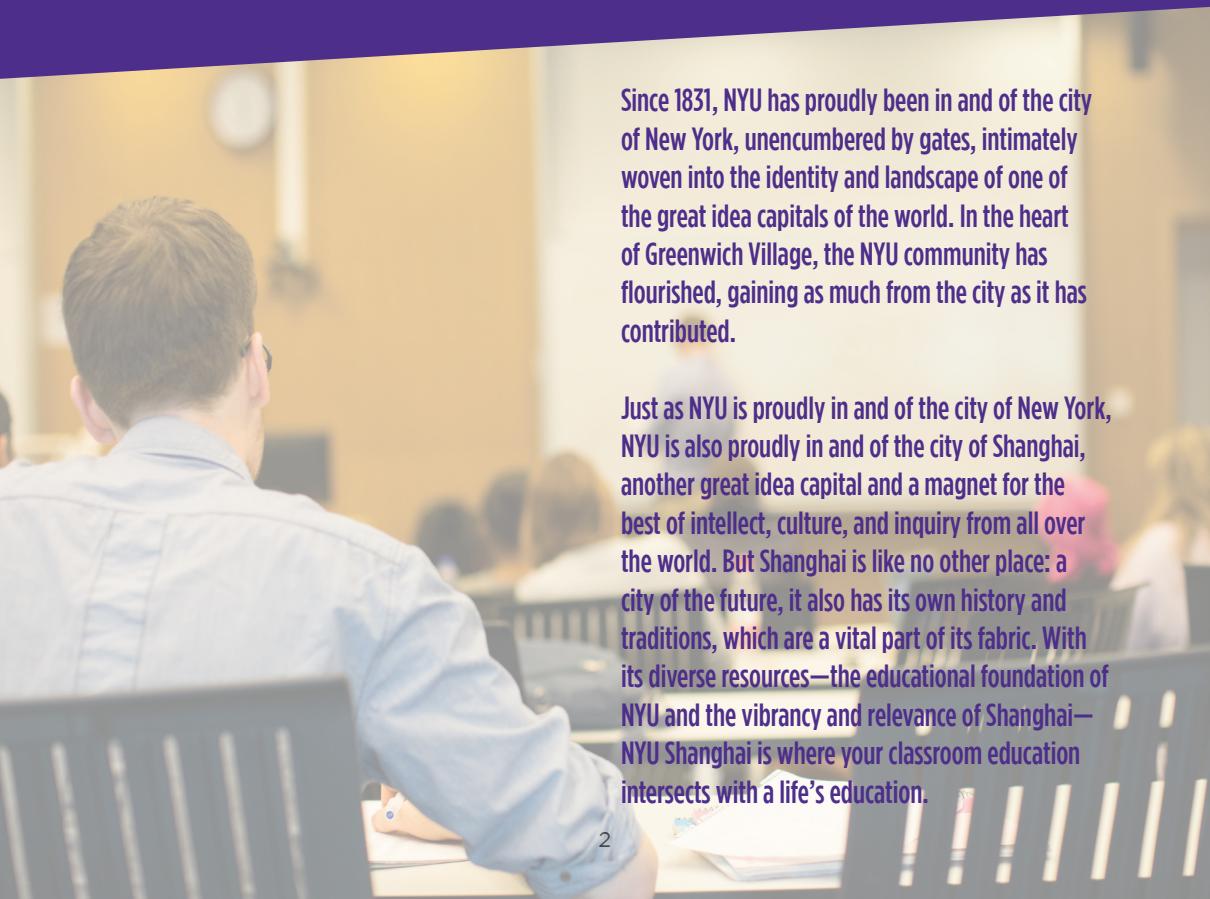
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{ Part I }

Introduction and Overview

This is NYU Shanghai 这就是上海纽约大学

NYU Shanghai is the third degree-granting campus in NYU's global network, joining NYU in New York and NYU Abu Dhabi. It is a world-class, comprehensive liberal arts and sciences research university in the heart of Shanghai, and unlike any other university in the world.



Since 1831, NYU has proudly been in and of the city of New York, unencumbered by gates, intimately woven into the identity and landscape of one of the great idea capitals of the world. In the heart of Greenwich Village, the NYU community has flourished, gaining as much from the city as it has contributed.

Just as NYU is proudly in and of the city of New York, NYU is also proudly in and of the city of Shanghai, another great idea capital and a magnet for the best of intellect, culture, and inquiry from all over the world. But Shanghai is like no other place: a city of the future, it also has its own history and traditions, which are a vital part of its fabric. With its diverse resources—the educational foundation of NYU and the vibrancy and relevance of Shanghai—NYU Shanghai is where your classroom education intersects with a life's education.

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 will continue in the great tradition of universities that combine world-class research with exceptional teaching. Research Institutes are focused on Mathematics, Computational Chemistry, Neuroscience, Physics, and Social Development with a Center for Big Data for Society and Business and a Center for Global Asia opening this year. Both graduate and undergraduate students at NYU Shanghai will have the opportunity to participate in research opportunities.

OVERVIEW

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. The NYU Shanghai academic building is located along Century Avenue in Pudong, a location as central to Shanghai as Fifth Ave is to Manhattan.



WHERE WE ARE

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.

Residence Hall

The NYU Shanghai residence halls is located in the JinQiao area of Pudong. Housed in three towers of the Green Center complex, the residence hall is located within an international hub with easy access to both local and international shops and restaurants. By living alongside fellow students and Resident Assistants, students will form intimate communities and the walls of the classroom will be broken down, allowing for education and an exchange of ideas to continue and flourish, unfettered by class schedules.

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'll 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.

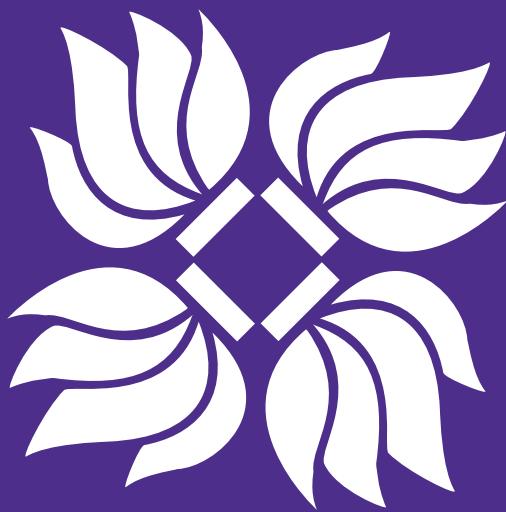
And beyond the city limits of Shanghai, the country of China is available: the Great Wall, the Lingyin Temple, the Forbidden City, the Chengdu Panda Reserve, and more. China is, after all, a country with a vast, varying geography and demography, and a history no longer confined to just the pages of a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

{Part II}

Enrollment

Everything you need to know about:

- Admission
- Tuition, Fees, and Financial Aid
- Registration, Advisement, and Counseling
- Degree Requirements



Admission

Admission to NYU Shanghai is highly selective. Students are admitted based on the overall strength of their application, including academic excellence, extracurricular activities, teacher and counselor evaluations, and a demonstrated interest in global citizenship, service, and leadership. US and other non-Chinese students may be asked to schedule a Skype interview with a member of the Shanghai Admissions team during the admissions process.

NYU Shanghai Office of Undergraduate Admissions in Shanghai
(9am - 5pm China Standard Time)
Tel: +86 21 2059-5599
shanghai.admissions@nyu.edu

NYU Office of Undergraduate Admissions in New York
(9am - 5pm Eastern Standard Time)
Tel: +1 212-998-4500
shanghai.admissions@nyu.edu

Recommended High School Preparation

All applicants should pursue the most challenging curriculum available to them, as the rigor of a student's coursework will weigh heavily in the admissions process. NYU Shanghai considers a record of Honors, Advanced Placement (AP), International Baccalaureate (IB), A-Level or other high-level coursework to be an essential component of a successful application. In addition to advanced level courses, most successful applicants include many of the following areas of study in their high school programs:

- *English*—four years of English with a heavy emphasis on writing
- *Math*—three to four years
- *History/Social Studies*—three to four years
- *Science*—three to four years
- *Foreign Language*—two to three years

Please note that NYU Shanghai's language of instruction is English; therefore, it is required that all applicants have a high level of fluency in both written and spoken English.

Applying to NYU Shanghai and Other NYU Campuses

Students can indicate their interest in being considered for admission to NYU Shanghai in addition to programs at NYU's campuses in New York City and Abu Dhabi on the Common Application.

Financial Support

NYU Shanghai is committed to providing the best financial aid package available based on an individual family's needs. As such, we invite all applicants, regardless of citizenship, to apply for financial aid through NYU Shanghai. US citizens and permanent residents should file the FAFSA and the CSS Profile; non-US citizens or permanent residents need only file the CSS Profile.

Transfer Applicants

NYU Shanghai currently only accepts first-year students. If you have already begun a university degree and are interested in applying, please contact our admissions office for more details.

Transfer Applicants Within the University

Students do not need to fill out an application to switch majors within NYU Shanghai. If a student wishes to explore the option of permanently transferring to another NYU campus, they must discuss their options with their academic advisor and the Dean of Students, who will counsel the student on when and if they may switch campuses.

Study Away Students

NYU undergraduate students from New York and Abu Dhabi as well as visiting students from other four-year accredited universities may attend NYU Shanghai as full-time students for one or more semesters. Students should apply to study away through NYU's Office of Global Programs.

Special Undergraduate (Visiting Students)

Students from other four-year accredited undergraduate universities may attend NYU Shanghai as full-time students for one or more semesters. Students should apply to study away through NYU's Office of Global Programs.

Readmission of Former Students

Any former student who has been out of attendance for more than two consecutive terms and who wishes to return to NYU Shanghai must apply for readmission. Applications for readmission are available online (See next page for admission application deadlines). Requests for readmission should be received by the following dates: April 1 for the Summer and

Fall terms, and November 1 for the Spring term.

Special (Postgraduate) Students

NYU Shanghai is not currently accepting postgraduate students.

Advanced Standing

NYU Shanghai does not award credit for work completed at another college or university. If a student receives a 4 or 5 on select Advanced Placement (AP) exams, a 6 or 7 on select Higher Level International Baccalaureate exams, or took certain foreign maturity certificate examinations, he or she may be eligible to place out of a core requirement. Students can learn more details from their academic advisors and the Registrar.

How to Apply

USA/International

US/International students applying to NYU Shanghai may follow the same procedures for applying to any of NYU's degree-granting campuses:

- Apply to NYU Shanghai via the Common App (add NYU then ensure that Shanghai is listed as a campus of application on the Member Questions page)
- Submit test scores per our testing requirements (NYU Shanghai's US and International Standardized Testing Policy is the same as that of all of NYU's degree-granting campuses)
- Submit requested academic records and school reports
- Submit requested teacher and counselor recommendation letters
- Apply for Financial Assistance via the CSS Profile and FAFSA, if applicable, by stated deadlines

Please apply in accordance with the following deadlines:

Milestone	Date
<i>Early Decision I</i> Application Deadline Notification Deadline Response to an offer of admission	Nov 1 Dec 15 Jan 9
<i>Early Decision II</i> Application Deadline Notification Deadline Response to an offer of admission	Jan 1 Feb 15 Mar 12
<i>Regular Decision</i> Application Deadline Notification Deadline Response to an offer of admission	Jan 1 Apr 1 May 1

How to Apply for Financial Aid

All applicants (regardless of citizenship) will need to submit the CSS/Financial Aid PROFILE application (and Noncustodial PROFILE, if applicable) for NYU Shanghai need-based grant consideration by:

- Early Decision I: November 15 (to receive a financial aid award in mid-December)
- Early Decision II: January 15th (to receive a financial aid award in mid-February)
- Regular Decision: February 15th (to receive a financial aid award in April)

Chinese Applicants Admissions Regulations

上海纽约大学2017年招生方案（中国大陆学生）

融合中美两国教育精华的上海纽约大学，将为优秀学生提供在全球化背景下全新的、全英语的高等教育模式。所有学生前两年均在上海学习，大三起可前往纽约大学全球教育体系中的其他校园和学习中心学习，大四再回到上海完成学业。上海纽约大学实行通识教育（博雅教育），入学后不分专业，在大一阶段学习涵盖不同学科的核心课程，大二结束前确定专业，将扎实的基础学习和深入的专业学习相结合，以培养宽广的知识面和有效的跨学科能力。

根据教育部有关规定，借鉴纽约大学招生特色和经验，上海纽约大学在全面审视每位申请学生的综合素质基础上，通过“校园日活动”选拔一批具备强烈的求知欲以及开拓创新精神、热爱尝试新事物、拥有“世界公民”素质的优秀学生，而非采用仅仅基于高考成绩的招生录取模式。

一、招生对象

能适应国际大都市竞争环境、向往走向世界、渴求新知识、勇于挑战新事物、学习成绩优异的高中毕业生。

符合[2017]年高考报名条件并参加[2017]年高考的学生均可申请报考上海纽约大学。

上海纽约大学对申请材料进行审核后，将邀请其中部分优秀的申请学生参加“校园日活动”，并在“校园日活动”基础上，结合高考、高中学业水平考试、综合素质评价等，通过高校招生综合评价体系录取学生。

二、招生计划

上海纽约大学[2017]年继续面向全国招收176名学生，招生计划不做分省安排，各省招生名额不设上下限，在所有申请学生中择优录取。各省招生主管部门编印的《2017年普通高等学校招生专业和计划》中的上海纽约大学招生计划，仅用于学生高考志愿填报，与各省（自治区、直辖市）最终录取人数无关。

三、申请方式

1. 提交通用申请（Common Application）

所有申请报考上海纽约大学的学生，都必须通过美国高校本科入学在线申请系统Common

Application (www.commonapp.org)，于[2017年1月1日]前填写并提交通用申请。

注：通用申请填写比较复杂，且截止日期临近时系统繁忙，建议学生至少提前一周提交。

2. 填写《上海纽约大学[2017]校园日活动申请表》

通用申请提交完成后，学生须下载、填写并打印《上海纽约大学[2017]年校园日活动申请表》（请至学校官网招生方案页面下载），并用通用申请的注册邮箱，将申请表以电子邮件附件形式发送至上海纽约大学招生办公室：shanghai.admissions@nyu.edu，邮件主题和邮件附件名为：省份 + 姓名 + Common App ID（注：Common App ID为登录通用申请平台后显示的八位数字）。

3. 寄送书面申请材料

完成以上申请步骤后，学生还须向上海纽约大学招生办提交以下书面申请材料。每页材料须在右上角空白处注明申请学生的Common App ID，用标准A4纸打印或复印，并按以下次序排放（申请材料请勿装订，不要加装各类订书针、封面、封底、装订夹等，以免剔除时误损申请材料）：

（1）《上海纽约大学[2017]年校园日活动申请表》

（2）高一、高二每学期期中期末成绩和高三期中成绩（须注明单科满分）、年级排名（按文理排名，如中学不提供排名请出具证明）、高中学业水平考试（会考）成绩复印件。以上材料均须加盖中学公章。

如发现成绩不实，经查实后一律取消学生的申请和录取资格，并将所在中学纳入非诚信学校。

（3）主要获奖证书复印件及其他证明自己特长和优势的材料（非必须）。

申请材料须于2017年1月1日前以快递方式邮寄至上海纽约大学招生办公室（以当地寄出日期为准）。所有申请材料恕不退还，学生请

自行备份。

邮寄地址：上海市世纪大道1555号上海纽约大学招生办公室 邮编：200122

联系电话：021-20595599

四、选拔程序

1. 审核

上海纽约大学招生委员会将对学生的申请材料进行初审，并于[2017年2月10日]前以电子邮件形式通知学生初审结果。

2. “校园日活动”

初审合格的学生参加上海纽约大学“校园日活动”，学校将通过模拟课堂、英文写作、团队活动、个别面谈等方式考察考生的求知欲、亲和力、学习能力、适应能力、交流能力、心理素质、团队精神、表达能力、行为道德等。

“校园日活动”的具体时间和地点将另行通知。

特别提醒：校园日活动全程用英语进行。

五、录取政策

上海纽约大学招生委员会将根据学生“校园日活动”表现，对每位学生进行严格的评价和讨论，并给予符合上海纽约大学要求的学生相应录取政策：

A. 预录取：学生须参加[2017]年普通高考，高考成绩达到生源所在省本科第一批录取控制线（一二本录取批次合并的省为自主招生控制分数线），上海纽约大学即予以录取。

B. 待录取：学生须参加[2017]年普通高考，高考成绩达到生源所在省本科第一批录取控制线（一二本录取批次合并的省为自主招生控制分数线），上海纽约大学将结合学生申请过程中的各项因素，包括高考成绩，综合评定，择优录取。

如考生所在省级招生办公室另有规定，则按省招办规定办理。

六、奖助学金

被上海纽约大学录取的学生，学校将根据学

生在校园日活动中的表现和申请材料给予优秀学生奖学金，优秀学生奖学金将按学期分四年发放。

被上海纽约大学录取的学生，如家庭经济条件困难，学校将根据学生的实际情况提供助学金，学校不希望被录取的学生因家庭经济困难而辍学。

上海纽约大学的学生在校期间，还可以申请各类国家和上海的奖助学金。

七、颁发证书

上海纽约大学学生修学期满，符合毕业要求，将获得以下全日制本科证书：

1. 上海纽约大学学士学位证书（中华人民共和国教育部监制）
2. 上海纽约大学毕业证书（中华人民共和国教育部监制）
3. 美国纽约大学学士学位证书（美国纽约大学颁发）

八、监督机制

上海纽约大学的招生过程坚持公平、公开、公正的原则，保证不同经济背景、种族、性别、宗教信仰的学生都有机会申请入学，接受考生及家长与社会各界的监督。

监督电话：021-20595255

监督邮箱：shanghai.jiandu@nyu.edu

九、咨询方式

学校网址：www.shanghai.nyu.edu

咨询热线：021-20595599

咨询邮箱：shanghai.admissions@nyu.edu

咨询现场：上海市世纪大道1555号上海纽约大学咨询中心

官方QQ群：上海纽约大学招生咨询
(111393813)

官方微博：上海纽约大学招生办（新浪微博）

官方微信：NYUShanghai

Tuition, Fees, and Financial Aid

When estimating the net cost to the family of a university education, a student should consider two factors: (1) the total cost of tuition, fees, and materials related to a particular program, plus costs directly related to the choice of living style (dormitory, apartment, and commuting costs) and (2) financial aid that may be available from a variety of sources. This section provides information on both of these distinct but related topics.

The following is the schedule of fees established by NYU Shanghai for the year 2017-2018. NYU Shanghai reserves the right to alter this schedule without notice. Tuition, fees, and expenses can be expected to increase in subsequent years and will be listed in online updates to this Bulletin.

Registration and school based fees cover additional expenses related to student course activities. Service fees also cover health services (separate from health insurance), emergency and accident coverage as well as basic fees necessary to support curriculum related technology.

Note: Separate course fees may be required for some courses. Students should consult the respective Albert course listing for information.

All fees are payable at the time of registration. The Office of the Bursar is located on the 10th floor of the campus building in room 1051. Online payments and wire transfers are to be paid to NYU Shanghai for the exact amount of the tuition and fees required. In the case of an overpayment, the balance is refunded in the 2nd month after each semester starts by the Office of the Bursar.

A fee will be charged if payment is not made by the term due date indicated on the student's statement.

Cost of Attendance

The preliminary cost of attendance budget represents the estimated annual cost of education for full-time undergraduate students at NYU Shanghai in US dollars for the 2017-2018 academic year. It includes tuition, room and board (which may vary based on a student's room selection), health insurance, personal expenses, books and course materials, and many student life activities. The costs listed below are estimated for the 2017-2018 academic year only. Annual adjustments to the costs and fees at NYU Shanghai may be necessary and should be expected. The yearly tuition and residence costs include only full-time fall and spring enrollment; course overloads incur additional tuition, registration and service fee. Students that take summer session or January term courses will incur additional direct and indirect expenses. Direct expenses will be billed accordingly. Financial assistance may not be available for summer or January term sessions.

Indirect costs—such as estimated board, travel, supplies, and personal expenses—are costs that you may incur during the academic year, which will vary for each student. These indirect costs are not charged through NYU Shanghai.

NYU Shanghai **Estimated Cost of Attendance** in US dollars for 2017-2018

Direct Costs: Costs that you will be charged by NYU Shanghai	Cost
Tuition, Registration and Services Fees*	\$50,464*
Health Insurance**	\$3,494**
Room	\$3,744
Estimated Books and Materials	\$904

Indirect Costs: Other educational costs incurred	Cost
Board (Meals)	\$2,496
Estimated Supplies	\$300
Estimated Personal Expenses	\$1,000
Estimated Travel	\$3,750

Total Cost of Attendance (Estimated)	\$66,152
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*Tuition, Registration and Services Fees, per unit (19 or more units) \$1,414. This charge will be assessed to students who take over 18 units.

**Health insurance charges vary. The estimated maximum is \$3,496 for 2017-2018. Your direct charges may vary.

Special Programs including Study Away

The tuition paid to NYU Shanghai is the cost of tuition for a semester away in the Global Network (for a standard full time course load). However, the cost of attendance varies between the global academic centers and degree-granting campuses, for other expenses (i.e. room, board, travel) for study in the NYU Study Away programs and in NYU International Exchange Programs. Students may refer to the cost estimator to get an estimate of their expected cost of attendance per semester.

NYU January and Summer Terms

Starting in their freshman year, students are eligible for NYU January term. After completion of the freshman year students are eligible for NYU summer terms. NYU's January and Summer terms allow students more flexibility and scheduling options. NYU Shanghai students have the opportunity to earn course credit or explore a new interest. During this time, students can take advantage of intensive study at NYU Shanghai or one of the global study away sites or other degree-granting campuses. Oftentimes, the fall and spring semesters can be overly hectic for students, considering a full-time course load, student club responsibilities, work, internship commitments, and social obligations. This busy time forces students to focus mainly on their academic progress, which doesn't always allow the freedom to explore a new interest or take advantage of the many cultural resources that originally drew them to Shanghai. Further information is available from the NYU Shanghai Office of Global Affairs. Students should be aware that there are additional tuition fees for January and summer terms outside of the fall and spring semesters. Typically financial aid is not available for the terms.

Deferred Payment Plan (For U.S. students only)

The Deferred Payment Plan allows students to pay 50 percent of their net balance

due for the current term on the payment due date and defer the remaining 50 percent until later in the semester. This plan is available to students who meet the following eligibility requirements:

- Matriculated and registered for 6 or more points
- Without a previously unsatisfactory NYU Shanghai credit record
- Not in arrears (past due) for any NYU Shanghai charge or loan

The plan includes a nonrefundable application fee of \$50, which is to be included with the initial payment on the payment due date.

A separate deferred payment plan application and agreement is required for each semester this plan is used. The Deferred Payment Plan will be available at www.nyu.edu/bursar - Make a Payment starting in July for the fall semester and in December for the spring semester.

For additional information, please visit the website of the Office of the Bursar at <http://shanghai.nyu.edu/academics/tuition/> or call +86 21 20596666.

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 at shanghai.studentaccounts@nyu.edu or call +86 21 20596666 to clear arrears or to discuss their financial status.

Withdrawal and Refund of Tuition

A student who, for any reason, finds it impossible to complete one or more courses for which he or she has registered should consult with an academic advisor. An official withdrawal must be filed either on Albert (through the first three weeks of the term only) or in writing on a completed Request for Withdrawal form with the Office of the NYU Shanghai Registrar. (Note: An official withdrawal must be filed if a course has been canceled, and, in this case, the student is entitled to a refund of tuition and registration fees paid.) Withdrawal does not necessarily entitle the student to a refund of tuition paid or a cancellation of tuition still due. A refund of tuition will be made provided such withdrawal is filed within the scheduled refund period for the term. (See below for the schedules.)

Merely ceasing to attend a class does not constitute official withdrawal, nor does notification to the instructor. A stop payment of a check presented for tuition does not constitute withdrawal, nor does it reduce the indebtedness to NYU Shanghai.

The date on which the Request for Withdrawal form is filed, not the last date of attendance in class, is considered the official date of the student's withdrawal. It is this date that serves as the basis for computing any refund granted the student. The processing of refunds takes approximately two weeks.

Undergraduate Refund Schedule

Withdrawing From ALL Courses (Fall and Spring Only)

For U.S. Students (must have a U.S. passport)

This schedule is based on the total applicable charge for tuition, excluding nonreturnable fees and deposits.

*Withdrawal on or before the official opening date of the term: **100%** (100% of tuition and fees)*

*Withdrawal on the second day after the official opening date of the term through the end of the first calendar week: **100%** (100% of tuition only)*

Note: The first calendar week consists of the first seven (7) calendar days beginning with the official opening date of the term (not the first day of the class meeting).

*Withdrawal within the second calendar week of the term: **70%** (tuition only)*

*Withdrawal within the third calendar week of the term: **55%** (tuition only)*

*Withdrawal within the fourth calendar week of the term: **25%** (tuition only)*

*Withdrawal after completion of the fourth calendar week of the term: **NONE***

Note: All fees (including school-related fees) are nonreturnable after the official first day of the semester.

The previous sections pertaining to the refund schedule is not applicable to Chinese and Non-U.S. students. These students should refer to the "Refunds" page on the Office of the Bursar's website located at <http://shanghai.nyu.edu/academics/tuition>.

For summer and January terms the above schedules apply but is accelerated with summer using two day increments and January term one day increments—example the end of the two week refund deadline for partial withdrawal from a full semester course translates to four days in summer and two days in a January Term.

Note: A student may not withdraw from a class after the ninth week of the fall or spring semester or in the last two weeks of each six-week summer session.

Exceptions to the published refund schedule may be appealed in writing to the Assistant Provost for Academic Affairs and should be supported by appropriate documentation regarding the circumstances that warrant consideration of an exception. Exceptions are rarely granted. Students who withdraw should review the "Refunds" page on the Office of the Bursar's website, <http://shanghai.nyu.edu/academics/tuition>.

U.S. federal regulations require adjustments reducing financial aid if a student withdraws even after the NYU refund period. Financial aid amounts will be adjusted for students who withdraw through the ninth week of the semester and have received any federal grants or loans. This adjustment may result in the student's bill not being fully paid. NYU will bill the student for this difference. The student will be responsible for payment of this bill before returning to NYU and will remain responsible for payment even if he or she does not return to NYU.

For any semester a student receives any aid, that semester will be counted in the satisfactory academic progress standard. This may require the student to make up credits before receiving any further aid. Please review the "satisfactory academic progress" standard so you do not jeopardize future semesters of aid.

Eligibility for Financial Aid

Financial aid may be comprised of university scholarships, federal aid (for US citizens/official permanent residents of the United States), or outside scholarships. NYU Shanghai reviews all students for scholarship eligibility regardless of citizenship. For most undergraduates, eligibility for merit and/or need-based scholarships is determined by a student's prior academic strengths, and upon demonstration of financial need from the results of the submitted financial aid form(s).

To be considered for financial aid, students must be officially admitted to NYU Shanghai or as a current student, you would need to be matriculated in a degree program and making satisfactory academic progress toward degree requirements. In order to renew the NYU Shanghai scholarship and grant awards at the same amount that was offered upon admission to NYU Shanghai you must: apply for financial aid each year by the returning student preferred deadline and continue to demonstrate financial need; make satisfactory progress toward degree requirements; and enroll full time (12 credits or more) each semester. Please refer to <https://shanghai.nyu.edu/admissions/returning> for current details.

Chinese nationals applying to NYU Shanghai will need to contact the NYU Shanghai Office of Admissions in the Shanghai Office (9:00 a.m.-5:00 p.m. China Standard Time): +86-21-2059-5599 for

additional information regarding individual scholarship requirements.

Non-Chinese nationals applying to NYU Shanghai must follow the instructions below if they wish to be considered for financial aid.

The College Scholarship Service/Financial Aid PROFILE

The CSS PROFILE is required of all applicants, regardless of citizenship, who would like to be considered for financial aid, including any scholarships/grants from NYU Shanghai. Note: students with divorced, separated, or unmarried biological parents will also need to submit the CSS Noncustodial parent PROFILE (or the NYU Noncustodial parent PROFILE Waiver Request with supporting documentation) by the deadlines specified below to be considered for institutional scholarships/grants. Chinese nationals applying to NYU Shanghai (using the Gaokao to qualify for admission) should not complete the CSS PROFILE.

- Visit <https://student.collegeboard.org/css-financial-aid-profile> to begin and submit the CSS/ Financial Aid PROFILE
- Visit <https://ncprofile.collegeboard.com/ncpWeb/pageflows/Main/NcpMainController.jpf> to begin and submit the CSS Noncustodial Parent PROFILE (if applicable)
- Students needing a Noncustodial Parent PROFILE Waiver request should contact shanghai.financial.support@nyu.edu.
- The New York University CSS school code number is **2785**.

Freshman Applicants CSS/PROFILE Deadlines

	Early Decision I	Early Decision II	Regular Decision
CSS PROFILE	November 15	January 15	February 15
Noncustodial PROFILE (if applicable)	November 20	January 20	February 20
Estimated Award Notification	mid-December	mid-February	April

The Free Application for Federal Student Aid (FAFSA)

NYU Shanghai is approved by the U.S. Department of Education to provide federal financial aid to eligible students who are U.S. citizens or official permanent residents of the U.S. Therefore, all U.S. citizens or official permanent resident applicants who would like to be considered for financial aid at NYU must submit the FAFSA in addition to the CSS/Profile form.

- Visit <http://fafsa.gov> to begin and submit the FAFSA.
- You must list "New York University" as a recipient and include our federal school code number **(002785)** when completing your FAFSA.
- The upcoming aid year's FAFSA becomes available as of October 1.

Freshman Applicants FAFSA Deadline:

	Early Decision I	Early Decision II	Regular Decision
FAFSA	November 15 *	January 15 *	February 15
Award Notification	mid-December *	mid-February *	April

* EARLY DECISION RECOMMENDED FILING DATE FOR FAFSA:

The FAFSA (NYU school code 002785) is required for federal financial aid and NYU scholarship consideration for all U.S. Citizens, Permanent Residents, and eligible non-citizens applying to our New York City campus and/or to NYU Shanghai. Early Decision admitted students who file and complete the FAFSA by the CSS/Financial Aid PROFILE deadline will receive a financial aid package that includes federal financial aid eligibility at the time of admission. Early Decision admitted students who file and complete the FAFSA after the CSS/Financial Aid PROFILE deadline will have their federal aid eligibility awarded upon receipt of the FAFSA. Use of the Data Retrieval Tool is preferred whenever possible.

Student Responsibilities

- You must apply for financial aid each year to renew the need-based portion of the financial aid awarded at NYU.
- You should refer to <https://www.nyu.edu/admissions/financial-aid-and-scholarships/new-undergrad.html> for all financial aid application deadlines for freshman applicants. It is important to adhere to all applicable deadlines for aid consideration.
- Use NYU Albert at albert.nyu.edu to view/accept your financial aid awards.
- If you submit documents to the Office of Financial Support, please put your NYU University I.D. number on each page and keep a copy for yourself. Please avoid submitting originals as the documents cannot be returned to you.
- It is important that you understand the conditions of the awards you accept. Contact the Office of Financial Support at shanghai.financial.support@nyu.edu if you have any questions.
- You must adhere to satisfactory academic progress standards to remain eligible for financial aid. The Office of Financial Support will send reminders, but it is the student's responsibility to know and heed the requirements.
- You must notify the Office of Financial Support immediately if you receive an award or financial aid from any additional outside source. A change in your resources may affect the type of aid you may be eligible for.
- You must respond immediately to all requests from the Office of Financial Support. Failure to comply may result in the cancellation of your aid.
- Consult with the Office of Financial Support immediately if you reduce your academic program to fewer than 12 credits per semester or if you are enrolled full-time (at least 12 credits or more) but intend to begin part-time (less than 12 credits per semester) to discuss how those changes will impact your financial aid. Also contact the Office of Financial Support if there is a change in your housing status. A change in enrollment or housing status may affect the financial aid you receive.
- Be sure to notify the Office of the NYU University Registrar if you have a change of address by updating your contact information via NYU Albert at albert.nyu.edu. We use the records from the Office of the Registrar to administer financial aid.

Registration, Advisement, and Counseling

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*](http://shanghai.nyu.edu/academics/registration). Office hours are weekdays from 9 a.m. to 5 p.m.

Students can complete their initial registration through Albert, NYU's online registration system, at [*home.nyu.edu*](http://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 preregistration immunization requirements, please see: <http://www.nyu.edu/students/health-and-wellness/student-health-center/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.

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, career and life goals;
- Evaluate progress toward goals;
- Understand curricular requirements, provide guidance during course selection, and provide help with identifying other meaningful educational experiences;
- Refer them to institutional and community support services for assistance if necessary;
- Monitor their progress as they move through the undergraduate program.

Each semester, students are required to communicate with their academic advisor (and freshmen and sophomores 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 freshman 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 and support to students looking to reach their highest academic potential. Students can schedule a meeting, or drop by the ARC, for any of the following:

- Individual and small-group tutoring in over 30 STEM, Business, and Economics courses;
- Individual writing consultations at any stage of the writing process;
- Academic coaching in areas such as time management, reading & note-taking strategies, and goal setting;
- Workshops on writing, academic skills, and computing languages;
- Group study and conversation circles.

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 counselor throughout the year. An appointment with a career counselor 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 counseling 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 fairs, career speakers, industry panels, skills workshops, alumni mentor matching, and much more.

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.

Preprofessional 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 a pre-medical, pre-dental, or pre-health major. 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 are the basic set requirements most medical schools in the U.S. request; 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
- FoS Physics I Laboratory & Physics II Lab
- Foundations of Chemistry I & II
- FoS Chemistry Laboratory
- Foundations of Biology I & II
- FoS Biology Laboratory
- Organic Chemistry I & II
- Organic Chemistry I & II Lab

Note: 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)

In addition:

- Calculus
- Statistics
- Introduction to Psychology
- A sociology course that surveys individual and social patterns of behavior and determinants of health
- 2 semesters of upper level Expository Writing courses are recommended. These courses cannot include Creative Writing and need to focus on writing or interpreting advanced texts.
- 1 semester of Biochemistry

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 Prelaw 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.

Health and Wellness Center

Health and Wellness services are 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. Health and Wellness counseling staff members provide health-related advice and assistance in workshops, as well as in group and individual psychotherapy.

The social and emotional conflicts that occur in a person's life occasionally prevent him or her 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. Health and Wellness counselors provide an atmosphere where personal concerns can be examined and discussed freely and confidentially.

Health and Wellness 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 Health and Wellness Center is located on the 6th floor of the academic building and opened 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 Health and Wellness Center program addresses the issues impacting students from a physical, emotional and health knowledge perspective and provides 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 Health and Wellness 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 Henry and Lucy Moses Center for Students with Disabilities (CSD) in New York determines qualified disability status and assists students in obtaining appropriate accommodations and services. CSD 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 supports.

Any student who needs a reasonable accommodation based on a qualified disability is required to register with the CSD for assistance. They should contact the Director of the Academic Resource Center, Cydney Delia (cydney.delia@nyu.edu) for assistance in registering.

Degree Requirements

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
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 by the President of NYU takes place annually at Commencement in May.

Students receive three confirmations of their graduation: a New York University diploma (issued by New York University), a NYU Shanghai diploma (from the Ministry of Education of the PRC), 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 as interest in majors may change as students take classes in different disciplines and changing majors after taking some of the courses 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.

(See next page)

Prerequisite Courses for Declaring a Major

Major	Final grade of C or higher in:
Biology	Foundations of Biology I
Business and Finance	Statistics for Business and Economics
Business and Marketing	Statistics for Business and Economics
Chemistry	Foundations of Chemistry II
Computer Science	Introduction to Computer Programming OR Introduction to Computer Science
Computer Systems Engineering	Introduction to Computer Programming OR Introduction to Computer Science
Data Science	Introduction to Computer Programming OR Introduction to Computer Science + Calculus
Economics	Microeconomics
Electrical and Systems Engineering	Introduction to Computer Programming OR Introduction to Computer Science
Global China Studies	Any required Global China Studies course
Honors Mathematics	Analysis I + Honors Linear Algebra II + Cumulative GPA 3.65 or higher in all classes and in Math classes
Humanities	Global Perspective on Society
Interactive Media Arts	Interaction Lab or Communications Lab
Mathematics	Multivariable Calculus
Neural Science	Foundations of Biology I
Physics	Foundations of Physics II
Social Science	Global Perspective on Society

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 special policies have been made between two particular majors that supersede this rule.

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 or disciplinary area. 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. 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.

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.

{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

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 Assistant 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 freshman 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. Chinese national students should take note that when their cumulative earned credits exceed 136 (not including J-Term or Summer coursework), they will be charged additional tuition, registration, and fees for each unit over 136. These additional charges go beyond the standard semester charges.

Availability of Courses

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. Excess demand will not lead to creation of additional space in major elective courses or for students seeking to take a required major course earlier than the semester it is listed in the recommended course sequence.

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.

Change of Program

To make any changes in their program, including dropping or adding courses given in other divisions of NYU, students must access Albert Student Center or file a Change Course Enrollment form in the Registrar's Office.

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 both 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 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 ninth week, no one may withdraw from a course. 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 form, and get the approval of the Assistant Provost for Academic Affairs.

A student who withdraws officially from all courses in a term may register for the following term, if four calendar months will have passed since the start of the withdrawal, and 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 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. 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 (nondegree) 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 are seriously ill and/or will miss more than a week of classes due to medical or personal reasons, should contact their Academic Advisor and the Office of Health and Wellness for assistance in excusing their absences from class.

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

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 substitute a higher level course for an introductory course 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. For exceptional students, some majors also offer independent study.

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.

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 with the particular major offering the course. 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 grade point average.

For Chinese national students, a repeated course will take space in their free extra 8-credits beyond 128 total credits.

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, including any courses for particular minors approved by NYU Shanghai. Students seeking additional credits beyond the 36 point limit must file a petition with the Office of Academic Affairs. This requirement applies to students seeking a third semester away within the global network. In this case the student would submit a plan for their semester(s) abroad for approval.

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

NYU Shanghai does not presently accept transfer applicants.

Credit for Non-NYU Study Abroad

Students may not be registered at another university at the same time that they are registered in NYU Shanghai. Once admitted to NYU Shanghai, students must take all courses 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.

Exceptions are granted only rarely and only for good academic reasons.

Requests for a waiver should be made by submitting a petition to the NYU Shanghai Academic Standards Committee.

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. Exceptions are granted only rarely and only for good academic reasons. Requests for a waiver should be made by submitting a petition to the NYU Shanghai Academic Standards Committee. 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.

EXAMINATIONS AND GRADES

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 25-hour period. A student who has more than two final examinations scheduled during a 25-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 pre-arranged 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 final examinations are missed because of illness, a doctor's note must be presented to the Health & Wellness Center, which can verify the medical situation and inform the instructor. The student must submit a request to the instructor to receive a grade of Incomplete. It is up to the instructor and Academic Affairs to decide if a request for a grade of Incomplete will be granted. The time and place of any makeup examinations are set by the instructor or the major leader.

Incomplete grades received because of a missed final examination must be removed within the semester following the one in which the Incomplete was received. In the case of students who are out of attendance, such grades must be removed within one year after the end of the course concerned. An Incomplete is a temporary grade; if it is not replaced within the time limit by a grade submitted by the course instructor it becomes an F or the default grade indicated by the instructor, and is computed in the grade point average. (Regarding the removal of Incompletes received for missed work other than final examinations, see next page 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:

A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
F	0.0

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 course work.

To appeal an assigned grade (only final semester grades are assigned grades, mid-term 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 the Assistant Provost for 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, present documented evidence of illness or the equivalent, 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.

Incompletes

All work missed in the fall term or in a January term session must be made up by the end of the following spring term. All work missed in the spring term or in a summer session must be made up by the end of the following fall term. Students who are on a leave of absence in the semester following the one in which the course was taken have one year to complete the work. Students should contact their advisor for an Extension of Incomplete Form, which must be approved by the instructor. Extensions of these time limits are rarely granted.

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 major core 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 have written 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 and/or internship 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.

LEAVE OF ABSENCE

General Leave

If a student would like to take a leave of absence, the advisor will assist in the withdrawal from the semester and processing a leave of absence. A student needs to make an appointment with their advisor to discuss his or her particular situation and review the terms of the leave of absence.

A student may request a leave of absence for the fall or spring semester, and must make his or her request prior to the end of the third week of the semester he or she wishes to be on leave. A student who requests a leave after that deadline or who has been out of attendance without first being granted a leave must apply for readmission. Also note that leaves are not granted retroactively for past semesters.

There are no leaves of absence for the summer and January terms, as enrollment during these terms is not required to maintain matriculation in NYU Shanghai.

A student granted a leave within the deadline does not have to make a formal application for readmission as long as he or she returns to the College within the agreed-upon 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). An extension or reduction of the leave period may be granted for good cause. Students cannot be reinstated for a particular semester after the registration deadline for that semester has passed. Students who attend another college during the leave may not transfer the credit to NYU Shanghai.

Students are advised to inquire how the leave of absence may affect their scholarship and financial aid award and should contact the Financial Aid Office. If students are on probation when the leave is granted, they will return on probation. Students out of attendance who did not apply for a leave and who wish to return to NYU Shanghai must apply for readmission. (See the [Admission section](#) of this Bulletin.)

Students on leave 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, or attend University events. They may visit campus only for scheduled appointments with University faculty or staff.

NYU Shanghai follows the Office of Global Programs policy regarding leave of absence and study away admission. Students who have been on leave from the University must return to their home campus and successfully complete one academic semester (fall or spring) of full-time coursework before enrolling at a Global Academic Center.

Psychological and Medical Leave

If a student and a counselor or a physician agree that a psychological or medical leave of absence is the best way to proceed given the situation, the counselor or physician should make a recommendation to the Dean of Students and Assistant Provost for Academic Affairs. A student needs to complete the Leave of Absence Petition form. Leave of absence petitions are accepted and reviewed on a rolling basis throughout the academic year.

A Certification of Readiness to Return to School from a Leave of Absence form should be completed by the counselor/therapist or physician, who needs to state clearly that the student is ready to return and that NYU Shanghai is a suitable environment in which to continue his or her academic work. The student must also schedule an appointment with a counselor/therapist or physician at the NYU Shanghai

Health & Wellness Center prior to receiving approval to return. A student granted a leave within the deadline does not have to make a formal application for readmission as long as he or she returns to the College within the agreed-upon 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). An extension or reduction of the leave period may be granted for good cause. Students cannot be reinstated for a particular semester after the registration deadline for that semester has passed. Students who attend another college during the leave may not transfer the credit to NYU Shanghai.

Students are advised to inquire how the leave of absence may affect their scholarship and financial aid award and should contact the Office of Financial Aid. If students are on probation when the leave is granted, they will return on probation. Students out of attendance who did not apply for a leave and who wish to return to the College must apply for readmission. (See the Admission section of this Bulletin.)

Students on leave 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, or attend NYU Shanghai events. They may only visit campus for scheduled appointments with NYU Shanghai faculty or staff.

NYU Shanghai follows the Office of Global Programs policy regarding leave of absence and study away admission. Students who have been on leave from the University must return to their home campus and successfully complete one academic semester (fall or spring) of full-time coursework before enrolling at a Global Academic Center.

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 the major, the minor, or any of the courses taken in fulfillment of 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 Registrar's website.

Petitions

The NYU Shanghai Academic Standards Committee will consider petitions of students to waive requirements or modify 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.

*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. Tests can result either in an exemption from the Chinese-language requirement or in placement into the appropriate-level course. Placement into 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 or demonstrate equivalent competency through a placement exam. In some cases, adjustments in placement may be made during the first weeks of class under advice and/or consent of instructors. Information on placement testing can be obtained from the Office of Academic Advising.

The CAS online placement exam is used for new coming students only to assess their language proficiency for a preliminary placement into Chinese language courses.

If a student has taken Chinese language courses at NYU (Shanghai, New York, Abu Dhabi and London) at any level before and wishes to be placed out of the next level (including to fulfill the language requirement), he/she needs to apply for an in-person placement exam with the Chinese Language Program. Student can only be placed out of one level at a time. Please reach to shanghai.chinese.program@nyu.edu to request. The in-person placement exam is usually held at the beginning of each semester.

Placement Process for Writing as Inquiry

Entering students who did not speak English in the home or attend K-12 schools where English was the primary language of instruction will be evaluated for placement in two different first-year writing course levels. 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.

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.

Transcripts of Record

Unofficial transcripts are available on Albert.

A stamped and 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; 2) sending an email from their NYU email account to shanghai.registrar@nyu.edu; or 3) mailing their request to the following address:

Office of the Registrar
NYU Shanghai
Suite 1049, 1555 Century Avenue
Pudong New Area
Shanghai, China 200122

The following should be included in the request letter:

1. University ID Number
2. Current Name and any name under which you attended NYU
3. Current Address
4. Date of Birth
5. School of the University attended
6. Dates of Attendance
7. Date of (Anticipated) Graduation
8. Full Name & Address of the person or institution to which the enrollment verification is to be sent

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.

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. DHL Express Delivery: The Office of the Registrar can assist students that are not on campus to deliver the paper Enrollment Verification via express mail. The international express mail service provider used by the NYU Shanghai Registrar's Office is DHL. Please note that requesting documents to be sent via DHL 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.

Academic Standards and Discipline

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 cumulative or semester grade point average falls below 2.0 or if it fails to show 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 grade point average of at least 2.0 during the term he or she is on probation, (b) not receive any grade below a C or any grade of I, and (c) not withdraw from any course without securing the permission of the NYU Shanghai Academic Standards Committee prior to the withdrawal. Students on academic probation are also required to have a special probation interview with their advisor to receive registration clearance for the next semester. More

specific requirements may be imposed.

Students on academic probation may engage in co-curricular activities but may not hold office in these 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 who are on probation must petition the Academic Standards Committee to support their study away application. If supported by the Academic Standards Committee, the final admissions decision will be made by the university's Office of Global Programs.

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.

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 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 Assistant 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 Assistant 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 Assistant 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 and not in the student's major file.

The Assistant 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 Assistant 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 Assistant 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 Assistant Provost for Academic Affairs.

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

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 her or his 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 you can contact 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 at work 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 investigations conducted under the jurisdiction of the university. Information about and policies applicable to human subjects research at NYU Shanghai are available at <https://research.shanghai.nyu.edu/resources/human-subjects>. The university believes that review independent of the investigator is necessary to safeguard the rights and welfare of human subjects of research investigations. All research involving human subjects is conducted in accordance with federal regulations, including Title 45 of the U.S. Code of Federal Regulations, Part 46 (45 CFR 46). Under federal regulations, human subjects are defined as: living individual(s) about whom an investigator conducting research obtains:

- (1) data through intervention or interaction with the individual, or
- (2) identifiable private information.

An Institutional Review Board (IRB) is established under the Provost to ensure adequate safeguards. The Provost is responsible for the composition of the IRB with respect to: (1) the qualifications of IRB members in terms of educational background and research or other relevant experience, and (2) broad representation of relevant university interests.

This IRB is responsible for reviewing investigational procedures involving human subjects prior to the initiation of the research procedure in reference to (1) the rights and welfare of the individuals involved, (2) the appropriateness of the methods used to obtain informed consent, and (3) the risks and potential benefits of the investigations. The IRB is responsible for determining when additional expertise is required for adequate review and for obtaining that additional expertise. The IRB is further responsible for maintaining records of its review activities and decisions and for ensuring that records of informed consent are developed and kept by investigators where appropriate.

It is the responsibility of investigators who plan to use human subjects in research to obtain written consent from the IRB prior to conducting an investigation involving human subjects. It is the investigator's further responsibility to take whatever steps are determined necessary for the protection of the subjects, and to meet the reporting requirements established by the IRB.

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 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 the preceding academic year, all graduation moments included. The cutoff for summa cum laude is the GPA included within the top 5 percent of the previous year's graduating class. The cutoff for magna cum laude is the GPA included within the next 10 percent of the previous year's class. The cutoff for cum laude is the GPA included within the next 15 percent of the previous year's class. For example, the necessary GPA level for summa cum laude for students graduating in September 2017 will be based on the GPA cutoff for the top 5 percent of the combined graduates from September 2016, January 2017, and May 2017.

Major Honors

Students may be awarded degrees with major honors if they complete the designated honors sequence in the major and maintain the requisite grade point average.

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 Assistant 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 Assistant 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.

Students with double majors in discrete, unrelated disciplines must complete honors programs in each major for which they seek honors. Students with double majors in interdisciplinary or related fields may, if the two majors concur, convene a joint honors committee to establish an interdisciplinary research program of coursework that culminates in a single thesis. Similarly, in the case of joint majors, the relevant majors must work out an agreement on the requirements for honors and on the supervision and evaluation of students' theses or projects.

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.

Senior Award in Arts

Awarded to the graduating senior who has excelled in arts and who has contributed in a noteworthy way to the life of the campus during four years.

Senior Award in Sciences

Awarded to the graduating senior who has excelled in sciences and who has contributed in a noteworthy way to the life of the campus during four years.

Senior 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.

Senior Award in Engineering and Computer Science.

Awarded to the graduating senior who has excelled in engineering and computer science and who has contributed in a noteworthy way to the life of the campus during four years.

{Part IV}

Academic Overview

Liberal Arts

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 last week of August prior to the start of the fall semester. The primary goals of this program is to help new students smoothly transit to college life by introducing students to the inquiry-based approach to learning of NYU Shanghai's liberal arts and sciences curriculum, providing information and resources to help students settle down in a new living and learning environment, helping students get to know their peers and foster a sense of community in a diverse student body with students from different cultural backgrounds. In addition to lectures and panels on academic learnings and university resources, students will also benefit from a series of fun events, fairs 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 is fall of their junior year and they must be in attendance in Shanghai in their final semester. NYU's global network requires students to have a 3.00 cumulative grade point average to study away. Students with a GPA below 3.00 should discuss their options with their advisor and may need to petition to the Academic Standards Committee.

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. Depending on placement, students are required to have completed Elementary Chinese II or 8 credits of English for Academic Purposes (EAP) before they are eligible to study away. 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. Through the application process, students agree to the Study Away Standard.

Majors and Minors

NYU Shanghai will offer its students an array of majors and minors, which will be phased in over time. Those that will be offered initially are in subject areas where we anticipate the greatest demand, and also in which NYU has world-class faculty, major research strength, 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
- Mathematics
- Honors Mathematics
- Neural Science
- Physics
- Social Science

Business

Dean Yuxin Chen

- Business and Finance
- Business and Marketing

Computer Science and Engineering

Dean Keith Ross

- Computer Science
- Computer Systems Engineering
- Electrical and Systems Engineering
- Data Science

Self-Designed Honors Major

Minors

Shanghai Minors

- Biology
 - Molecular and Cell Biology
 - Genomics and Bioinformatics
- Business
- Chemistry
- Chinese
- Computer Science
- Computer Systems Engineering
- Creative Writing
- Data Science
- Economics
- Electrical and Systems Engineering

- Global China Studies
- Humanities
- History
- Literature
- Philosophy
- Interactive Media Arts
- Mathematics
- Neural Science
- Physics
- Social Science

Global Network Minors

- Art History Studies
- Art Studies
- Australian Culture and Society
- British Culture and Society
- Central European Culture and Society
- Cultural Studies
- Entrepreneurship and Innovation
- European Culture and Society
- Fashion Studies
- French Culture and Society
- German Culture and Society
- Global Cities Studies
- Global Public Health Studies
- Globalization Studies
- Italian Culture and Society
- Journalism Studies
- Latin American Culture and Society
- Middle Eastern Culture and Society
- Pan African Culture and Society
- Psychological Studies
- Photographic Studies
- Political Studies
- Sociological Studies
- Spanish Culture and Society
- Sustainability Studies
- West African Culture and Society

NYU NY 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

There are six components to the NYU Shanghai core curriculum: Social and Cultural Foundations, Mathematics, Science, Algorithmic Thinking, Writing, and Language.

1 Social and Cultural Foundations

Courses in the Social Foundations and Cultural Foundations sequences 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. Social and Cultural Foundations courses will teach students to ask critical questions, find unstated assumptions, assess arguments, and offer creative interpretations of the great works and ideas of the past, especially as they live on in the present.

Required courses: Social Foundations and Cultural Foundations each have two components: a) a one-semester survey course, and b) a disciplinary course on China.

Social Foundation: In the one-semester 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 the topic. The expectation is that Global Perspectives on Society will be taken in the first semester.

Students will complete the Social Foundations requirement with a disciplinary course of their choice from the category “Social Science Perspectives on China,” (which may include courses on Chinese history, political economy, philosophy and society). This course can be taken at any point in a student’s undergraduate career.

Cultural Foundations: Perspectives on the Humanities is a one-semester core curriculum requirement. In the fall of their second year at NYU Shanghai, students choose from a variety of Perspectives on the Humanities topics. These content-based writing seminars introduce students to the questions asked and methods used by a variety of disciplines in the humanities, including philosophy, history, and literature, among others. 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 Cultural Foundations requirement, this course satisfies one of two writing requirements (see “Writing”). The course also includes a four-part evening event series with lectures, film screenings, and presentations of collaborative student work. The first-year writing course is a prerequisite for Perspectives on the Humanities.

Students will complete the Cultural Foundations requirement with a disciplinary course of their choice from the category “Chinese Arts,” which may include courses in Chinese art, architecture, drama, film, literature, and music. As with the courses in “Social Science Perspectives on China,” students may take their “Chinese Arts” course at any point in their undergraduate career.

Considered by many to be the “universal language,” mathematics provides logical and analytical tools necessary for tackling many of the important problems of our time. Quantitative skills are essential for work in the sciences and the social sciences, and they also have applications in the humanities. They are also critical to one’s ability to function and to thrive in today’s increasingly complex world.

Required courses or proficiencies: The Mathematics requirement varies depending on the background and eventual major of the student. Most students will meet the core curriculum requirement by taking the math course(s) required for their eventual major or by placing out of the math requirement through relevant exams. Students who pursue a major that does not have a math requirement may meet the core curriculum requirement through successful completion of a 4 credit NYU Shanghai math course or placing out of the math requirement altogether through relevant exams.

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

- AP Calculus AB or BC: Score of 4 or higher
- AP Statistics: Score of 4 or higher
- IB Mathematics: Score of 6 or higher
- A Level Mathematics: Score of B or higher
- NYU Shanghai Placement Into Calculus

Mathematics 2

3

Science

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 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 intellectual methods and analytical techniques that define modern science.

Required courses: The science requirement varies depending on the background and interests of the student, as follows:

- **Students who are pursuing degrees in science disciplines**—or who are taking the pre-health curriculum—will be required to take a rigorous, three-semester sequence of courses covering the fundamentals of basic science. Emphasis is placed on science as a process, from hypothesis development to testing and experimentation, on data collection, and on drawing conclusions. All of the courses in this sequence have a project-based laboratory component. In its totality, this sequence is the equivalent of full-year introductory courses in physics, chemistry, and biology. Biology, Neural Science, and Chemistry majors are not required to take Foundations of Physics III Honors and may substitute General Physics I & II for the Foundations of Physics I & II Honors courses. Physics majors are not required to take Foundations of Biology II. For more details, see the degree requirements of each major.
- Other students will fulfill the science requirement by taking 8 credits from at least two of three categories that provide a basic understanding of scientific analytical techniques, the role of science and technology in society, and algorithmic thinking. The first category, “Experimental Discovery in the Natural World”, is composed of laboratory- or experiment-based courses. The second category includes non-laboratory-based courses and is called “Science, Technology and Society.” The third category encompasses computational methods courses and is called “Algorithmic Thinking.” To fulfill a category, you must take at least one 3- or 4-credit course or two 2-credit courses in the same category.

The relevant exam scores which may be used to wholly or partially fulfill the Core Curriculum Science requirement are listed below. No corresponding credit is awarded.

Core Curriculum Science Category	Can be fulfilled by these exams (though no credit is given)
Science, Technology and Society (STS)	<ul style="list-style-type: none"> • AP Environmental Science: Score of 4 or higher
Experimental Discovery (ED)	<ul style="list-style-type: none"> • AP Psychology: Score of 4 or higher • IB Psychology HL (Higher Level): Score of 6 or higher • A Level Psychology: Score of B or higher • AP Physics C- Mech OR AP Physics C - E&M: Score of 4 or higher
<p>Satisfies two categories and completes the entire Science Core Requirement:</p> <p>Experimental Discovery (ED) AND Science, Technology and Society (STS)</p>	<ul style="list-style-type: none"> • AP Physics, Chemistry, OR Biology: Score of 4 or higher • AP Physics C- Mech and 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
Algorithmic Thinking (AT)	<ul style="list-style-type: none"> • AP Computer Science A: Score of 4 or higher • IB Computer Science HL: Score of 4 or higher • NYU Shanghai Placement into Introduction to Computer Science

Examination	Score	Serves as Prerequisite for
AP Calculus BC	5	Any Mathematics or Business course or Computer Science course that requires Calculus
AP Psychology	4 or higher	Any course that requires Introduction to Psychology as a prerequisite
IB Psychology Higher Level	6 or higher	Any course that requires Introduction to Psychology as a prerequisite
A Level Psychology	B or higher	Any course that requires Introduction to Psychology as a prerequisite

Algorithmic Thinking courses have a hands-on programming component and cover basic programming concepts.

Algorithmic Thinking

4

Required courses: All students must complete at least two credits of courses from the Algorithmic Thinking category, either as part of, or in addition to, the course(s) they take to fulfil the Core Curriculum Science requirement.

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

- AP Computer Science A: Score of 4 or higher
- IB Computer Science: Score of 4 or higher
- NYU Shanghai Placement Into Introduction to Computer Science

5

Writing

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 career.

Required courses: Students must complete two one-semester writing courses. Writing as Inquiry, the first-year writing workshop, is offered during the spring of the first year. Students must complete Writing as Inquiry before advancing to Perspectives on the Humanities, which is offered in fall term of the sophomore year (Perspectives on the Humanities also satisfies one Cultural Foundations requirements; see "Social and Cultural Foundations"). Fall 2017 Perspectives on the Humanities Topics (topics may change from year to year)

Fall 2017 Perspectives on the Humanities Topics (topics may change from year to year)

- American Superheroes
- Beyond Nature
- Brutes, Monsters, Ghosts, and Other Troubling Creatures
- Diasporas, Minorities, and Human Rights
- Embodied Language
- Expatriate, Immigrant, Refugee
- Go West!
- Language, Identity, and World Englishes
- Planet of the Apes: The Question of the Anthropocene
- Philosophy, Literature, and the Rhetoric of Dissent: Public Moralists from Socrates to Freud
- Sino-Western Literary Exchanges
- Tales of Gender and Power

Language study is central to the educational mission of NYU's global network. Our goal is for all NYU Shanghai students to be fluent in English, the language of instruction, and for non-native Chinese speakers to develop as much proficiency in Chinese, as their major course of study allows, with a minimum requirement of successful completion of the intermediate two level of Chinese or demonstrate equivalent competency through a placement exam.

Language 6

Required courses or proficiencies for Chinese: In the summer before their first year, non-native Chinese speaking students' Chinese language level will be assessed. Students will have room in their schedules for formal Chinese language courses, and will benefit from a full set of courses, from the elementary level to the most advanced level. Engineering and FoS students are unable to take 4 credit courses in Chinese in their first year because of heavy requirements in their major. They will be able to complete the requirement for a 4-credit Elementary or Intermediate level of Chinese class by completing two 2-credit Chinese classes over fall and spring semesters. These 2-credit Chinese classes are not open to other major or study away students. There will also be multiple modalities of instruction that take advantage of the latest pedagogical and technological developments. These will include formal intensive coursework during the Summer Session, language labs, online study, and co-curricular language coaching with immersion experiences. Students are required to have successfully completed Elementary Chinese II with a grade of C or better before they study away. To graduate students must successfully complete the Intermediate II level of Chinese or demonstrate equivalent competency through a placement exam.

Required courses or proficiencies for English: The English for Academic Purposes Program at NYU Shanghai is an essential gateway into the liberal arts experience. Student success in the liberal arts curriculum depends on high-level English literacy that goes beyond the language skills practiced in traditional language courses. To meet this goal, NYU Shanghai offers English for Academic Purposes (EAP) courses, which are designed as semester-long seminars with various interdisciplinary themes. These courses develop students' ability to communicate in English in a variety of contexts, connecting their understanding of the academic context with situations and experiences beyond the walls of the university, communicating academic knowledge to both academic and non-academic audiences, and communicating effectively across cultural boundary lines. The focus on using language and academic discourse skills in interdisciplinary contexts leads also to an increase in a student's ability to transfer knowledge and skills from one context to another. Students develop a necessary foundation for skillful participation in English language discourse that prepares them to negotiate and respond to the constant changes in many areas of their studies and life in general.

Students who are second language speakers of English and fluent in Chinese language are required to take 8 credits of EAP in their first two years, following a two-semester sequence from EAP I to EAP II. EAP I must be completed in the first year; most students will complete a 4-credit EAP seminar in fall term. A small number of students taking course sequences in the sciences will be able to take two 2-credit versions in the first year. Advisors will alert students if they are eligible for the 2-credit seminar. Students must take EAP II before the end of their second year, and are not eligible to study away until it is successfully completed. Students who demonstrate exceptionally strong competence on all learning outcomes as they complete EAP I may be recommended for exemption from EAP II. Exemptions are rare and most students should expect to complete 8 credits.

English for Academic Purposes Courses:

- English for Academic Purposes I
- English for Academic Purposes II

EAP I Topics for Fall 2017 (course topics may change from semester to semester)

- Business in the 21st Century
- Cities and Urban Consciousness
- Consumerism, Alienation, and Happiness
- Science in the Public Sphere
- Negotiating Self and Other

I. Social Foundations - Two Classes:

- A. CCSF-SHU 101 Global Perspectives on Society (One Class) Fall
- B. "Social Science Perspectives on China" (One Class)

Sample courses:

Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement. Some courses are listed in Chinese Arts and in the SSPC requirement above but courses may only meet requirements for one category for any particular student.

BPEP-SHU 9042 (GCHN-SHU 342)	The Political Economy of East Asia
CCSF-SHU 120	
CCSF-SHU 121	The Rise of Modern China (Modern China and World Economy)
CCSF-SHU 122	China's Development in a Comparative Perspective
CCSF-SHU 123	Traditional Chinese Wisdom and Its Transformation in Modern Times
CCSF-SHU 124	Contemporary Chinese Political Thought (China's Political Thought in the Post-Maoist Era)
CCSF-SHU 125	Growing Shanghai, Shrinking Detroit
CCSF-SHU 127	Global Cultural Heritage
CCSF-SHU 128	Public Policy Perspectives on China: An Introduction to Policy Analysis II
CCSF-SHU 132	Shanghai: Architecture and Urban Design of the 21st Century City
CCSF-SHU 133	Globalization, Urbanization, and Global Cities in Asia
CCSF-SHU 134	Governing the Local
CCSF-SHU 164J	“China for Sale”: Drugs, Food, Travel, and Advertising in Modern China
ECON-SHU 238	The Stuff of Legends: The Many Meanings of the Early Silk Road(s)
GCHN-SHU 110	History of Modern Economic Growth: Exploring China From a Comparative Perspective
GCHN-SHU 165	The Concept of China
GCHN-SHU 224	Seek Knowledge, even onto China: The Islamic World and China
GCHN-SHU 230	Chinese Maritime History
GCHN-SHU 231	Culture & Media in Urban China
GCHN-SHU 232	Social & Cultural Debates
GCHN-SHU 240	From Qing to the Republic: Social Debates in China
GCHN-SHU 243	Modern Chinese Governance
GCHN-SHU 252	Chinese Environmental Studies
GCHN-SHU 270	20th-Century East Asia-U.S. Relations
HIST-SHU 120	Researching Chinese Politics and Society
HIST-SHU 125	The Mongol Conquest in World
HIST-SHU 153 (EAST/HIST-UA 9053)	China's Last Empire: Understanding Qing History, 1636-1911
HIST-SHU 179	History of Modern China Since 1840
HIST-SHU 226	
HIST-SHU 250	History of Modern China in A Global Context
HIST-SHU 312	5000 Years of Chinese History: Fact or Fiction?
	China at the Center? An Exploration of Chinese Foreign Relations
	China Encounters the World

Core Curriculum Courses

HIST-SHU 313	China Goes Global: How China and the World Changed Each Other
HIST-SHU 325	The New Cold War History
HIST-SHU 351	From Human Sacrifices to Illicit Sex at a Funeral: A History of Violence and Crime in Ancient China
HIST-SHU 379	The Social Life of Things: Functions of Material Culture in Ancient Chinese Society and Beyond
HUMN-SHU 225	Topics in Asia-Pacific History
HUMN-SHU 366 (266)	Shanghai Stories
INTM-SHU 193 (MCC-SHU 9993)	Chinese Cyberculture
INTM-SHU 225	Media and Participation
INTM-SHU 249	Street Life & Street Food in the 21st Century City
INTM-SHU 250	Special Topics in Digital Humanities: Street Food & Urban Farming
JOUR-SHU 9202	Methods and Practice: Journalism
LWSO-SHU 491	International Investment Transactions in Developing Countries
LWSO-SHU 9251 (SOCS-SHU 251)	Topics in Law and Society: Law, Culture, & Politics in China
POL-UA 9563	International Politics and U.S.-China Relations
RELS-SHU 9270 (RELST-UA 9270)	Religion and Society in China: Gods, Ghosts, Buddhas and Ancestors
SCA-SHU 9634	Global Connections: Shanghai
SOCS-SHU 150	Introduction to Comparative Politics
SOCS-SHU 172	U.S. Constitution
SOCS-SHU 229	Capitalism, Socialism, Communism: Theory and Practice
SOCS-SHU 272	The U.S. Constitution: Is It Relevant to China?
SOCS-SHU 275	U.S. China Relations
SOCS-SHU 450 (ENVST-UA 9450)	Topics in Environmental Values & Society: Chinese Environmental Governance

II. Cultural Foundations - Two Classes:

A. Perspectives on the Humanities (One Class) Fall
 B. "Chinese Arts" (One Class) Sample Courses:

Sample courses:

Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement. Some courses are listed in Chinese Arts and in the SSPC requirement above but courses may only meet requirements for one category for any particular student.

ART-SHU 210/9210	Introduction to Studio Art
ART-SHU 301/9301	Introduction to Photography I
ART-SHU 1910	Projects in Studio Art - China
ART-SHU 380	Projects in Photography
(ART-UE 9380)	
CCCF-SHU 110J	
CCCF-SHU 120	Introduction to Shanghai Cinema Legacy and China's Film Culture and Industry Today
CCCF-SHU 121	Chinese Art and Modern World
CCCF-SHU 122	History of Chinese Cinemas
CCCF-SHU 123	China: Cultures and Contexts
CCCF-SHU 124	Chinese Literature in the 20th Century
CCCF-SHU 125	Chinese Music from Antiquity to the Present
CCCF-SHU 125	Chinese Theatrical Traditions
CCCF-SHU 126	Contemporary Chinese Art in Shanghai
CCCF-SHU 128	Contemporary Art & New Media
(ART-SHU 9077)	
CCCF-SHU 130	Screening Childhood
CCCF-SHU 131	History of Chinese Cinemas II
CCCF-SHU 132	Love and War, Wisdom and Strife: Chinese Poetry in a Global Context
CCCF-SHU 133	Journalism and Society in China
CCCF-SHU 134	Politics and Aesthetics of New Chinese
	Documentary: Globalization and Social Transformations
CCCF-SHU 9101	Cultural Foundations I
EAST-UA 9540	Chinese Film and Society
GCHN-SHU 200	Topics in Global China Studies: Global Chinese Food
GCHN-SHU 207	20th-century Chinese Writers in Global Context
GCHN-SHU 230	Culture & Media in Urban China
GCHN-SHU 231	Social & Cultural Debates
GCHN-SHU 251	Worldwide Chinese Diaspora
GCHN-SHU 263	Modern Chinese Writers
GCHN-SHU 264	Chinese Migrant and Diasporic Networks
HUMN-SHU 229	Masters of Asian Cinema
(CCCF-SHU 129)	
HUMN-SHU 267	Representing Ethnicity in Mainland China and Beyond A comparative Study
HUMN-SHU 366 (266)	Shanghai Stories
INTM-SHU 127	Paper Art: History and Practice
(CCCF-SHU 127)	
INTM-SHU 184	
	Communities and Net Literature (Exploring Net Literature)
INTM-SHU 193	Chinese Cyberculture
(MCC-SHU 9993)	

INTM-SHU 225 (formerly SOCS-SHU 225)	Media and Participation
JOUR-SHU 9202	Methods and Practice: Journalism
LIT-SHU 222	Chinese Poetry (in Translation)
LIT-SHU 223	Magic and Realism in Chinese Literature
MCC-SHU 9451 (MCC-UE 9451)	Global Media Sem: China
RELS-SHU 9270 (RELST-UA 9270)	Religion and Society in China: Gods, Ghosts, Buddhas and Ancestors
SCA-SHU 9634	Global Connections: Shanghai

III. Mathematics - Varies by Major and Placement (see "Mathematics" Section 2)

Core Math classes:

MATH-SHU 009	Precalculus (Algebra and Calculus)
MATH-SHU 010	Quantitative Reasoning: Great Ideas in Mathematics
MATH-SHU 105	Analysis and some Applications in Real world life
MATH-SHU 121 (110)	Calculus
MATH-SHU 123	Multivariable Calculus
MATH-SHU 140 (117)	Linear Algebra
MATH-SHU 160	Networks and Dynamics (Introduction to Systems and Dynamics)
MATH-SHU 201 or 122	Honors Calculus (Calculus Emphasizing Proofs; Analysis 1)
MATH-SHU 212 (124,112)	Multivariable Calculus and Differential Equations
MATH-SHU 233	Theory of Probability

IV. Science - Varies by Major (see "Science" Section 3):

Experimental Discovery in the Natural World Courses:

BIOL-SHU 21 & 123	Foundations of Biology I & FoS Biology Laboratory
CCEX-SHU 111	The Domain of Crystals
CCEX-SHU 112	Mutations and Disease
CCEX-SHU 113	Brain and Behavior
CCEX-SHU 114	The Molecules of Life
CCEX-SHU 116	Where the City Meets the Sea: Studies in Coastal Urban Environments
CCEX-SHU 117	The Legacy of Tradition I: The Growth of Science in the West
CCEX-SHU 118	Sci & Tech in Pre-Modern China
CHEM-SHU 126 & 127	Foundations of Chemistry II & FoS Chemistry Lab
INTM-SHU 246-001	Topics in Experimental Interfaces & Physical Computing: Digital Farm
NEUR-SHU 160	Introduction to Brain and Behavior
PHYS-SHU 91 & 71	Foundations of Physics I Honors & FoS Physics Laboratory
PHYS-SHU 11 & 71	General Physics I & FoS Physics Laboratory
PHYS-SHU 200 & 201	Topics in Physics: Optical Imaging: Applications in Biology and Engineering & Topics: Introduction to Quantum Theory and Technology
PSYC-SHU 101	Introduction to Psychology
<i>*Below is 2-credit course and counts only partially fulfilling the core requirement</i>	
SOCS-SHU 421 *	Topics in Applied Air Quality Research

Science, Technology and Society Courses:

CCEX-SHU 118	Science & Technology in Pre-Modern China
CCST-SHU 121	The Atom and Energy
CCST-SHU 122	Life in the Universe
CCST-SHU 123	State and Fate of the Earth
CCST-SHU 124	Social Issues in the New Biosciences
CCST-SHU 125	Interconnected: The History and Theory of Networks
CCST-SHU 126	From Ancient Cosmology to Science
CCST-SHU 127	Serendipity in Science
CCST-SHU 128	The Rise of Modern Science
CCST-SHU 129	Information Societies
CCST-SHU 130	Animals, Nature, Environment
CCST-SHU 131	Introduction to the Use of Scientific Data in Historical Research
CCST-SHU 132	Topics: Creativity Considered
HIST-SHU 225	The Global Space Age
HIST-SHU 302	History of Water

INTM-SHU 10J	Neighborhood, Map, Phone
INTM-SHU 240	Solar Solutions: Considering The Sun in our Digital Future
INTM-SHU 295	Seminar Topics: Political Uses of Social Media
LIT-SHU 245	Literature and Science in the Renaissance
NEUR-SHU 10J	What Can Neuroscience Tell Us About Free Will
NEUR-SHU 265	Neural Bases of Speech and Language
PHIL-SHU 90	Philosophy of Science
PHIL-SHU 91	Philosophy of Biology
PHIL-SHU 130	Philosophy of Technology: Thinking Machines (Philosophy of Science)
SOCS-SHU 135	Environment and Society
SOCS-SHU 301	Complexity
SOCS-SHU 306	Pestilence
SOCS-SHU 333	Global Environmental Politics

**Below is 2-credit courses and counts only partially fulfilling the core requirement*

CCSC-SHU 135	Topics in Modern Medicine
CCSC-SHU 155	Biology and Biotechnology
CCST-SHU 141	Innovation in/of Daily Spaces

Algorithmic Thinking Courses:

CENG-SHU 201	Digital Logic
CSCI-SHU 11	Introduction to Computer Programming
CSCI-SHU 101	Introduction to Computer Science
CSCI-SHU 210	Data Structures
INTM-SHU 101	Interaction Lab (Introduction to Physical Computing and Computational Media)
INTM-SHU 120	Communications Lab
INTM-SHU 231	Developing Web
INTM-SHU 246	Topics in Experimental Interfaces & Physical Computing

V. Algorithmic Thinking

CENG-SHU 201	Digital Logic
CSCI-SHU 11	Introduction to Computer Programming
CSCI-SHU 101	Introduction to Computer Science
CSCI-SHU 210	Data Structures
INTM-SHU 101	Interaction Lab (Introduction to Physical Computing and Computational Media)
INTM-SHU 120	Communications Lab
INTM-SHU 231	Developing Web
MATH-SHU 252	Numerical Analysis (*Only counts for 2-credits of the Algorithmic Thinking category)
PHIL-SHU 70	Logic (*Only counts for 2-credits of the Algorithmic Thinking category)

VI. Writing

Writing instruction at NYU Shanghai will be delivered in the first-year writing course during spring term and the second-year course *Perspective on the Humanities* during fall term. The works studied in these survey courses will be the primary focus of the essays that students will be asked to write in the workshops.

VII. Language

Varies by Student's Language Level and Major. To graduate students must successfully complete the intermediate two level of Chinese or achievement of equivalent competency.

Chinese language courses:

CHIN-SHU 101	Elementary Chinese I
CHIN-SHU 102	Elementary Chinese II
CHIN-SHU 111	Elementary Chinese for Advanced Beginners
CHIN-SHU 201	Intermediate Chinese I
CHIN-SHU 201A	Intermediate Chinese I - Accelerated.
CHIN-SHU 202	Intermediate Chinese II
CHIN-SHU 202A	Intermediate Chinese II - Accelerated.
CHIN-SHU 211	Intermediate Chinese for Advanced Beginners
CHIN-SHU 301	Advanced Chinese I
CHIN-SHU 302	Advanced Chinese II
CHIN-SHU 401	Classical Chinese I
CHIN-SHU 402	Classical Chinese II
CHIN-SHU 403	Readings in Chinese Culture I
CHIN-SHU 404	Readings in Chinese Culture II
CHIN-SHU 411	Introduction to Business Chinese
CHIN-SHU 415	Introduction to Contemporary China I
CHIN-SHU 416	Introduction to Contemporary China II
CHIN-SHU 429	Advanced High Business Chinese

English Language Courses:

ENGL-SHU 100	English for Academic Purposes I
ENGL-SHU 101	English for Academic Purposes II

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.

Actual Course Titles

Key:

NYU Shanghai

Core Curriculum Requirements 2017-2018**

Category

Writing

Writing as Inquiry

Perspectives on the Humanities (POH)

Social Foundations

Global Perspectives on Society (GPS)

Social Science Perspectives on China (one course)

Mathematics*

Calculus

Or Honors Calculus or Multi-variable Calculus

Or Precalculus

Or Quantitative Reasoning

Algorithmic Thinking*

All students must complete at least two credits of courses from the Algorithmic Thinking category, either as part of, or in addition to, the course(s) they take to fulfill the Core Science requirement.

Science*

Minimum 8 credits in 2 out of 3 categories

Experimental Discovery in the Natural World (EDD)

Science, Technology, and Society (STS)

Algorithmic Thinking (AT)

Language

All students must demonstrate proficiency in Chinese by passing or placing out of Intermediate Chinese II.

All students must demonstrate proficiency in English by passing or placing out of two semesters of English for Academic Purposes (EAP).

* The Mathematics, Science, and Algorithmic Thinking requirements may be wholly or partially fulfilled with AP, IB or A Level exam scores or NYU Shanghai placement status.

**Core Curriculum classes may be used to meet major requirements. No single course may be used to meet more than two degree requirements of any type.

{Part VI}

Overview of Majors

ARTS AND SCIENCES

BIOLOGY

CHEMISTRY

ECONOMICS

GLOBAL CHINA STUDIES

HUMANITIES

INTERACTIVE MEDIA ARTS

MATHEMATICS

HONORS MATHEMATICS

NEURAL SCIENCE

PHYSICS

SOCIAL SCIENCE

BIOLOGY

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 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 the NYU 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 the Global Network with prior approval.

Foundational Courses

- BIOL-SHU 21 Foundations of Biology I
- BIOL-SHU 22 Foundations of Biology II
- BIOL-SHU 123 FoS Biology Laboratory
- CHEM-SHU 125 Foundations of Chemistry I
- CHEM-SHU 126 Foundations of Chemistry II
- CHEM-SHU 127 FoS Chemistry Laboratory
- PHYS-SHU 71 FoS Physics Laboratory
- PHYS-SHU 91 Foundations of Physics I Honors **OR**
CCSC-SHU 50 Physics I
- PHYS-SHU 93 Foundations of Physics II Honors **OR**
CCSC-SHU 51 Physics II
- PHYS-SHU 94 Physics II Lab

Note:

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 and may substitute General Physics I & II for the FoS Physics I & II Honors courses.
3. Relationship between General Physics and Foundations of Physics Honors (FoS 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. FoS Physics I-III Honors covers a similar set of topics in considerably greater depth, plus special relativity and an introduction to quantum mechanics, over three semesters. Please note that FoS Physics I & II Honors alone do not include some important topics, such as thermal and statistical physics, which are included in FoS Physics III Honors. Therefore, students electing to take the Honors Physics track are highly recommended to take FoS Physics III Honors as well. Students with strong high-school backgrounds in physics or maths are also highly recommended to take FoS Physics I-III Honors.

Required Courses

- BIOL-SHU 42 Biostatistics
- BIOL-SHU 250 Organismal Systems
- CHEM-SHU 225 Organic Chemistry I
- CHEM-SHU 225L Organic Chemistry I Lab

Biology Electives - Choose Five

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.

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 44 Microbiology and Microbial Genomics
- BIOL-SHU 50 Immunology
- BIOL-SHU 58 Evolution
- BIOL-SHU 200 Topic: Molecular Biology of Cancer
- BIOL-SHU 261 Genomics and Bioinformatics
- BIOL-SHU 263 Developmental Biology
- BIOL-SHU 997 Independent Research / Research Internship *(Note that one 4-credit Independent Study is allowed to count towards the Biology major elective)*
- BIOL-SHU 1128 Systems Biology
- CCEX-SHU 116 Where the City Meets the Sea
- CHEM-SHU 881 Biochemistry I
- MATH-SHU 160 Networks and Dynamics
- 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

SAMPLE SCHEDULE 1

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: Foundations of Physics I Honors, Foundations of Chemistry I, and FoS Physics Laboratory	2 credits: English or Chinese
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Spring Semester

Writing as Inquiry	Core Class	8 credits: Foundations of Biology I, Foundations of Chemistry II and FoS Chemistry Laboratory	2 credits: English or Chinese
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Year 2

Fall Semester

Perspectives on the Humanities	5 credits: Organic Chemistry I + Organic Chemistry I Lab	5 credits: Foundations of Biology II and FoS Biology Laboratory	Chinese, or General Elective
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Spring Semester

5 credits: Foundations of Physics II Honors, Physics II Lab	Organismal Systems	Biostatistics	Chinese, English, or General Elective (Organic Chemistry II for pre-med students)
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Year 3

Fall Semester

Biology Elective	Biology Elective	Chinese, or General Elective	General Elective
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Spring Semester

Biology Elective	General Elective	General Elective	General Elective
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Year 4

Fall Semester

Biology Elective	General Elective	General Elective	General Elective
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Spring Semester

Biology Elective	General Elective	General Elective	General Elective
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BIOLOGY

SAMPLE SCHEDULE 2

Year 1

Fall Semester

Global Perspectives on Society	Core Class (Calculus)	Core Class	English, Chinese, or General Elective
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Spring Semester

Writing as Inquiry	Core Class	3 credits: Foundations of Biology I	English, Chinese, or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	8 credits: Foundations of Biology II, Foundations of Chemistry I, FoS Biology Laboratory	Chinese, or General Elective	No Class
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Spring Semester

Biostatistics	Organismal Systems	5 credits: Foundations of Chemistry II, FoS Chemistry Laboratory	Biology Elective, Chinese, or General Elective
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Year 3

Fall Semester

5 credits: Organic Chemistry I + Organic Chemistry I Lab	Biology Elective	Biology Elective	General Elective
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Spring Semester

Biology Elective	Biology Elective	General Elective (Could be Organic Chemistry II for pre-med students)	General Elective
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Year 4

Fall Semester

5 credits: Foundations of Physics I Honors, FoS Physics Laboratory	General Elective	General Elective	General Elective
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Spring Semester

5 credits: Foundations of Physics II Honors, Physics II Lab	General Elective	General Elective	General Elective
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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, physics and biology, 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, computational chemistry, and biochemistry courses. Advanced students are encouraged to undertake research projects with faculty, potentially culminating in an undergraduate thesis and chemistry honors. 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.

Majoring in chemistry provides strong 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 the Global Network with prior approval.

Foundational Courses

• BIOL-SHU 21	Foundations of Biology I
• BIOL-SHU 22	Foundations of Biology II
• BIOL-SHU 123	FoS Biology Laboratory
• CHEM-SHU 125	Foundations of Chemistry I
• CHEM-SHU 126	Foundations of Chemistry II
• CHEM-SHU 127	FoS Chemistry Laboratory
• PHYS-SHU 71	FoS Physics Laboratory
• PHYS-SHU 91 Foundations of Physics I Honors	OR
CCSC-SHU 50 Physics I	
• PHYS-SHU 93 Foundations of Physics II Honors	OR
CCSC-SHU 51 Physics II	
• PHYS-SHU 94 Physics II Laboratory	

Note:

1. Chemistry majors are 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 General Physics I & II for the FoS Physics I & II Honors courses.
3. Relationship between General Physics and Foundations of Physics Honors (FoS Physics Honors): General Physics I & II is a calculus-based course for pre-med, 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. FoS Physics I-III Honors covers a similar set of topics in considerably greater depth, plus special relativity and an introduction to quantum mechanics, over three semesters. Please note that FoS Physics I & II Honors alone do not include some important topics, such as thermal and statistical physics, which are included in FoS Physics III Honors. Therefore, students electing to take the Honors Physics track are highly recommended to take FoS Physics III Honors as well. Students with strong high-school backgrounds in physics or maths are also highly recommended to take FoS Physics I-III 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
• CHEM-SHU 652	Physical Chemistry: Thermodynamics and Kinetics
• CHEM-SHU 661	Physical Chemistry Laboratory
• MATH-SHU 123	Multivariable Calculus

Chemistry Electives - Choose Three

- CHEM-SHU 285 Experimental Biochemistry
- CHEM-SHU 310 Biophysical 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

Note:

1. Please note that Independent Study must have a combined total of 4 credits. This can be done in 1 semester with a 4-credit load. Students can also fulfill this requirement over 2 semesters and take 2-credit loads each semester. Students should consult with the DUS and Faculty Research Advisor for approval.
2. Students interested in pursuing graduate study in Chemistry are strongly encouraged to take Inorganic Chemistry.
3. Additional Advanced Chemistry courses in the NYU 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 the NYU 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 Elective:

- CSCI-SHU 11 Introduction to Computer Programming
- CSCI-SHU 101 Introduction to Computer Science

CHEMISTRY

SAMPLE SCHEDULE 1

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 major courses in the first semester of their first year. Sample Schedule 2 offers an alternate plan that involves beginning to pursue a Chemistry 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 I	Core Class (Calculus)	8 credits: Foundations of Physics I Honors, Foundations of Chemistry I, and FoS Physics Laboratory	2 credits: English or Chinese
Writing as Inquiry	Multivariable Calculus	8 credits: Foundations of Chemistry II, FoS Chemistry Laboratory, Foundations of Biology I	2 credits: English or Chinese

Spring Semester

Year 2

Fall Semester

Perspectives on the Humanities	5 credits: Organic Chemistry I + Organic Chemistry I Lab	5 credits: Foundations of Biology II and FoS Biology Laboratory	Core, Chinese or General Elective
Core class	5 credits: Organic Chemistry II + Organic Chemistry II Lab	5 credits: Foundations of Physics II Honors/ General Physics II, Physics II Lab	Chinese, English 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	Physical Chemistry: Thermodynamics and Kinetics	Chemistry Elective, e.g. Inorganic Chemistry (NY only in Spring)	Chinese or General Elective

Spring Semester

Year 4

Fall Semester

Chemistry Elective	General Elective	General Elective	General Elective
General Elective	General Elective	General Elective	General Elective

Spring Semester

CHEMISTRY

SAMPLE SCHEDULE 2

Year 1

Fall Semester

Global Perspectives on Society I	Core Class	Core or General Elective	English, Chinese, or General Elective
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Spring Semester

Writing as Inquiry	Core Class (Calculus)	3 credits: Foundations of Biology I	English, Chinese, General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	13 credits: Foundations of Physics I Honors, Foundations of Chemistry I, and FoS Physics Laboratory, Foundations of Biology II, FoS Biology Laboratory	No Class	No Class
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Spring Semester

Core or General Elective	Multivariable Calculus	10 credits: Foundations of Physics II Honors, Foundations of Chemistry II, FoS Chemistry Laboratory, Physics II Laboratory, Physics II Laboratory	No Class
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Year 3

Fall Semester

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

5 credits: Organic Chemistry II + Organic Chemistry II Lab	Physical Chemistry: Thermodynamics and Kinetics	Physical Chemistry Laboratory	Chinese or General Elective
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Year 4

Fall Semester

Chemistry Elective	Chemistry Elective	General Elective	General Elective
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Spring Semester

Chemistry Elective	General Elective	General Elective	General Elective
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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 interpret and use 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

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 the 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.

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
OR Some other courses in Statistics.

Economics Electives - Choose Six, at least two must be from

“Advanced Economics Electives”

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 Economics Elective, please contact your advisor to have the course reviewed.

Advanced Economics Electives

- ECON-SHU 201 Mathematics for Economists
(substituted by taking both *Linear Algebra* AND *Multivariable Calculus*)
- ECON-SHU 225 Advanced Economic Theory
- 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 (formerly ECON-SHU 211)
- ECON-SHU 5 Math for Econ 1: Optimization (0.5 class since 2 credits)
- ECON-SHU 207 Urban and Real Estate Economics
- ECON-SHU 213 Causal Inference in the Social Sciences
- ECON-SHU 215 Economic History
- ECON-SHU 216 Introduction to Game Theory
- ECON-SHU 238 History of Modern Economic Growth: Exploring China From a Comparative Perspective
- ECON-SHU 260 International Trade
- ECON-SHU 306 Economics of Education
- ECON-SHU 316 Industrial Organization
- ECON-SHU 332 Monetary Economics
- ECON-SHU 335 Development Economics
- 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 360 Experimental Economics
- ECON-SHU 368 Financial Economics

ECONOMICS

SAMPLE SCHEDULE 1

This is just one example of how a student could organize their courses if pursuing a 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.

Year 1

Fall Semester

Global Perspectives on Society	Core Class (Calculus)	Core or Principles of Macroeconomics	English or Chinese
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Spring Semester

Writing as Inquiry	Microeconomics	Probability and Statistics or alternate courses, see pg. 105	English or Chinese
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Year 2

Fall Semester

Perspectives on the Humanities	Intermediate Microeconomics or Principles of Macroeconomics	Mathematics for Economists	Chinese or Core
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Spring Semester

Intermediate Macroeconomics	Intermediate Microeconomics or Core	Econometrics	Chinese or Core
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Year 3

Fall Semester

Core class	Economics Elective	General Elective	General Elective
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Spring Semester

Core class	Economics Elective	Advanced Economics Elective	General Elective
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Year 4

Fall Semester

Core class	Advanced Economics Elective	General Elective	General Elective
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Spring Semester

Core class	Economics Elective	General Elective	General Elective
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ECONOMICS

SAMPLE SCHEDULE 2

Year 1

Fall Semester

Global Perspectives on Society	Core Class (Pre-Calculus or Calculus)	Core or General Elective	English or Chinese
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Spring Semester

Writing as Inquiry	Calculus or Core class	Core or General Elective	English or Chinese
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Year 2

Fall Semester

Perspectives on the Humanities	Microeconomics	Probability and Statistics or alternate courses, see pg. 105	Core or General Elective
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Spring Semester

Principles of Macroeconomics	Econometrics	Mathematics for Economists	Core or General Elective
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Year 3

Fall Semester

Intermediate Microeconomics	Intermediate Macroeconomics	Core or General Elective	General Elective
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Spring Semester

Core or General Elective	Economics Elective	Economics Elective	General Elective
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Year 4

Fall Semester

Core or General Elective	Economics Elective	Advanced Economics Elective	General Elective
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Spring Semester

Core or General Elective	Advanced Economics Elective	General Elective	General Elective
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China is once again a major force in the world, while increasingly the world is drawn to China. Beyond the scope of conventional Area Studies, the innovative interdisciplinary major in Global China Studies allows students to build on the knowledge and critical skills gained from the core curriculum to deepen their understanding of the interaction between global trends and China's own evolution, whether at the level of state, society or individuals in the context of economic, religious, cultural, and political transformation.

Global China Studies majors will further their formal language study, either by an additional year of modern Chinese or a year of classical Chinese, or, in consultation with the adviser, by a year's study of another dialect or language of China; Student will develop in depth understanding of historical, socio-economics and cultural evolution of China; finally, majors are encouraged to study abroad beyond the minimum one semester in order to expand their global experience. Majoring in Global China Studies at NYU Shanghai positions students to pursue professional careers (in business, consulting, government, international agencies, NGOs) as well as graduate education in a broad range of areas at the cutting edge of 21st-century experience.

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 the Global Network with prior approval.

Required Courses: 24 credits

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

Chinese Geographies - 4 credits

*Sample Courses**

- GCHN-SHU 164 The Stuff of Legends: The Many Meanings of the Early Silk Road(s)
- GCHN-SHU 270 Researching Chinese Politics & Society
- HIST-SHU 250 China at the Center? An Exploration of Chinese Foreign Relations

Digital China Studies - 4 credits

*Sample Courses**

- INTM-SHU 184 Communities and Net Literature (formerly “Exploring Net Literature”)
- INTM-SHU 193 Chinese Cyberculture
- INTM-SHU 225 Media and Participation
- INTM-SHU 249 Street Life & Street Food in the 21st Century City
- INTM-SHU 250 Special Topics in Digital Humanities: Street Food and Urban Farming
- PHIL-SHU 130 Philosophy of Technology: Thinking Machine
- SCA-SHU 9634 Global Connections: Shanghai

Worldwide Chinese Diaspora - 4 Credits

*Sample Courses**

- GCHN-SHU 263 Voices from the Margin
- GCHN-SHU 264 Chinese Migrant and Diasporic Networks (formerly “Worldwide Chinese Diaspora”)
- HUMN-SHU 225 Topics in Asia-Pacific History: Asia-Pacific History in the 20th Century
- HUMN-SHU 230 Topics in the Humanities: Introduction to Asian American Studies
- HUMN-SHU 267 Representing Ethnicity in Mainland China and Beyond: A Comparative Study

Language - Non-Native Chinese speakers - 8 credits

Advanced Chinese I and II OR 8-credits of Chinese language classes at a level higher than Intermediate II.

Additional Electives - Native Chinese speakers - 8 credits

8 credits of additional electives from the list below.

Global China Studies Electives - 12 Credits

Sample Courses *

This is not an exhaustive list. More courses will be added as time goes on. If there is a course not listed that you would like to check on, please contact your Academic Advisor.

- CCCF-SHU 121 History of Chinese Cinemas I
- CCCF-SHU 128 Contemporary Art and New Media
- CCCF-SHU 131 History of Chinese Cinemas II
- CCCF-SHU 133 Journalism and Society in China
- CCCF-SHU 130 Screening Childhood
- CCSF-SHU 122 Traditional Chinese Wisdom and Its Transformation in Modern Times
- CCSF-SHU 123 Contemporary Chinese Political Thought (formerly China's Political Thought in the Post-Maoist Era)
- CCSF-SHU 124 Growing Shanghai, Shrinking Detroit
- ECON-SHU 238 Modern Economic Growth: Explore China
- (*) GCHN-SHU 164 The Stuff of Legends: The Many Meanings of the Early Silk Road(s)
- GCHN-SHU 165 Seek Knowledge, even onto China: The Islamic World and China
- GCHN-SHU 200 Topics in Global China Studies: Global Chinese Food
- GCHN-SHU 202 Archaeology in China
- GCHN-SHU 203 Art of War in China
- GCHN-SHU 204 Ethnic Diversity in China
- GCHN-SHU 206 Global (Chinese)Texts
- GCHN-SHU 207 20th Century Chinese Writers in Global Context
- GCHN-SHU 220 Chinese Science
- GCHN-SHU 221 Chinese Inventions in Global Context
- GCHN-SHU 222 History of Chinese Medicine
- GCHN-SHU 223 Muslim Science and China
- GCHN-SHU 224 Chinese Maritime History
- GCHN-SHU 231 Social and Cultural Debates in 20th Century China
- GCHN-SHU 230 Culture and Media in Urban China
- GCHN-SHU 232 Social Debates in China: From Qing to the Republic (formerly Social and Cultural Debates in 20th-Century China)
- GCHN-SHU 240 Modern Chinese Governance
- GCHN-SHU 241 Chinese Revolutions
- GCHN-SHU 242 Mao and the Chinese Revolution
- GCHN-SHU 243 Chinese Environmental Studies
- GCHN-SHU 252 20th Century East-Asia – US relations
- GCHN-SHU 262 China Trade in Global Context
- (*) GCHN-SHU 263 Voices from the Margin
- (*) GCHN-SHU 264 Chinese Migrant and Diasporic Networks (formerly "Worldwide Chinese Diaspora")
- (*) GCHN-SHU 270 Researching Chinese Politics & Society
- GCHN-SHU 280 Play and Games in Early China
- GCHN-SHU 281 Beliefs and Social Practice in China
- GCHN-SHU 282 China and Global Religions

- GCHN-SHU 342 The Political Economy of East Asia
(BPEP-SHU 9042)
- GCHN-SHU 997 Global China Studies Independent Study
- HIST-SHU 120 The Mongol Conquest in World History
- HIST-SHU 153 History of Modern China since 1840
- HIST-SHU 226 5000 Years of Chinese History: Fact or Fiction
- HIST-SHU 312 China Encounters the World
- HIST-SHU 313 China Goes Global: How China and the World Changed Each Other
- HIST-SHU 351 From Human Sacrifices to Illicit Sex at a Funeral: A History of Violence and Crime in Ancient China
- HIST-SHU 379 The Social Life of Things: Functions of Material Culture in Ancient Chinese Society and Beyond
- (*) HUMN-SHU 225 Topics in Asia-Pacific History: Asia-Pacific History in the 20th Century
- HUMN-SHU 229 Masters of Asian Cinema
- (*)HUMN-SHU 230 Topics in the Humanities: Introduction to Asian American Studies
- (*) HUMN-SHU 267 Representing Ethnicity in Mainland China and Beyond
- HUMN-SHU 366 Shanghai Stories
- (*) INTM-SHU 184 Communities and Net Literature (formerly "Exploring Net Literature")
- (*) INTM-SHU 193 Chinese Cyberculture
- (*) INTM-SHU 225 Media and Participation
- (*) INTM-SHU 250 Special Topics in Digital Humanities: Street Food and Urban farming
- LWSO-SHU 9251 Law Culture and Politics in China (SOCS-SHU 251)
- MCC-SHU 9451 Global Media Seminar: China (MCC-UE 9451)
- (*) PHIL-SHU 130 Philosophy of Technology: Thinking Machine
- RELS-SHU 9270 Religion and Society in China: Ghosts, Gods, Buddhas and Ancestors
- SOCS-SHU 272 US Constitution: Is It Relevant to China?
- SOCS-SHU 450 Chinese Environmental Governance
- (*) SCA-SHU 9634 Global Connections: Shanghai

() Note that a course taken as 'required' may not also count as an 'elective'*

This is not an exhaustive list. More courses will be added as time goes on. If there is a course not listed that you would like to check on, please contact your Academic Advisor.

Global China Studies

SAMPLE SCHEDULE 1

This is just one example of how a student could organize their courses if pursuing a GCS major. It assumes a student begins taking GCS 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	Core class	English, Chinese, Core, or General Elective
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Spring Semester

Writing as Inquiry	Core class	GCS Required Course	English, Chinese, Core, or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	GCS Required Courses	Core or General Elective	Core, Chinese or General Elective
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Spring Semester

GCS Required Courses	GCS Required Courses	Core class	Core, Chinese or General Elective
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Year 3

Fall Semester

GCS Required Courses	GCS Required Courses	General Elective	General Elective
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Spring Semester

GCS Elective	General Elective	General Elective	General Elective
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Year 4

Fall Semester

GCS Elective	General Elective	General Elective	General Elective
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Spring Semester

GCS Elective	General Elective	General Elective	General Elective
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Global China Studies

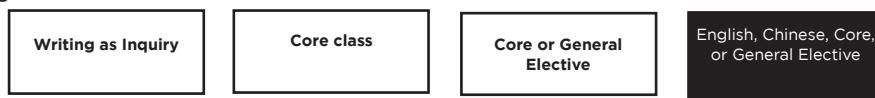
SAMPLE SCHEDULE 2

Year 1

Fall Semester



Spring Semester

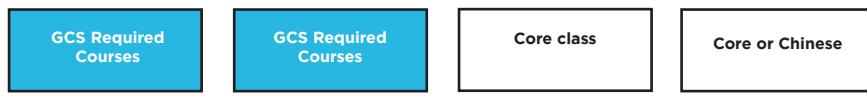


Year 2

Fall Semester



Spring Semester



Year 3

Fall Semester



Spring Semester



Year 4

Fall Semester



Spring Semester



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 history, philosophy, literature, religion, film and media, and cultural studies. Humanities students engage with Asian, African, European, American, and Oceanian cultures and intellectual traditions. They learn to employ multiple disciplinary perspectives, and to engage with a wide range of different sources.

Rather than developing career-specific skills, the Humanities major provides students with very general skills in reading, writing, interpretation, analysis and argument that are both highly valuable and highly transferable. Humanities majors graduate with the capacity to critically engage with our globalizing world, to contribute to contemporary scholarship, and to pursue a wide range of careers.

In the Humanities core courses, students acquire a set of methods for humanistic inquiry. Students then develop an area of thematic or disciplinary focus by taking courses in Shanghai and other NYU sites in consultation with faculty advisors. In the senior year, they take the Capstone Course and produce a final thesis to showcase their intellectual development.

REQUIREMENTS FOR THE MAJOR

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.

Core Courses - 8 Credits

The core courses are multidisciplinary in nature. They introduce a set of methodological approaches and highlight the cross-fertilization between disciplines. They must be taken in Shanghai when offered.

Critical Concepts - 4 credits

Sample Courses

- HIST-SHU 303 Histories and Politics of Noise
- HUMN-SHU 240 Gender, Sexuality, and Culture
- PHIL-SHU 40 Ethics
- PHIL-SHU 80 Philosophy of Mind
- PHIL-SHU 90 Philosophy of Science
- PHIL-SHU 150 Central Problems in Philosophy
- PHIL-SHU 130 Philosophy of Technology: Thinking Machines
- GCHN-SHU 110 The Concept of China

Digital Approaches - 4 credits

Sample Courses

- HIST-SHU 239 New York: History of the City
- INTM-SHU 193 Chinese Cyberculture
- INTM-SHU 249 Street Life & Street Food in the 21st Century City
- PHIL-SHU 130 Philosophy of Technology: Thinking Machines
- SCA-SHU 9634 Global Connections: China

Survey Courses - 8 Credits

These courses introduce students to the foundations of an area of study and may be taken at all global sites. A survey course provides a broad overview of a topic or a field of knowledge.

Sample Courses

- CCCF-SHU 121 History of Chinese Cinemas I
- CCCF-SHU 131 History of Chinese Cinemas II
- CCCF-SHU 128 Contemporary Art & New Media
- CCSF-SHU 122 Traditional Chinese Wisdom and Its Transformation in Modern Times
- CRWR-SHU 220 Out of the Whirlwind: A Study of Narrative Perspective
- GCHN-SHU 110 The Concept of China
- GCHN-SHU 164 The Stuff of Legends: The Many Meanings of the Early Silk Road(s)
- HIST-SHU 110 U.S. History Since 1865: U.S. History in a Global Context
- HIST-SHU 120 The Mongol Conquest in World History
- HIST-SHU 126 World History: Part I
- HIST-SHU 127 World History: Part II

- HIST-SHU 153 History of Modern China since 1840
- HIST-SHU 250 China at the Center? An Exploration of Chinese Foreign Relations
- HUMN-SHU 229 Masters of Asian Cinema
(CCCF-SHU 129)
- PHIL-SHU 70 Logic
- PHIL-SHU 150 Central Problems in Philosophy
- WRIT-SHU 159 Introduction to Creative Writing

Topic Courses - 24 Credits

Students take a total of 6 topic courses. These courses take an in-depth look at a specific topic and may be taken at all global sites. 3 or more of these courses should form a degree of thematic or disciplinary coherence and serve as the basis of the Capstone thesis.

Sample Courses

- CCSF-SHU 124 Growing Shanghai, Shrinking Detroit
- CCSF-SHU 130 China Encounters the World
(HIST-SHU 312)
- GCHN-SHU 224 Chinese Maritime History
- GCHN-SHU 232 From Qing to the Republic: Social Debates in China
- GCHN-SHU 263 Voices from the Margin: Modern Chinese and Sinophone Writers
- GCHN-SHU 264 Chinese Migrant and Diasporic Networks
- HIST-SHU 208 War and Peace: Europe Since 1900
- HIST-SHU 209 Witches, Magic and the Witch Hunts in the Atlantic World, 1400-1700
- HIST-SHU 210 History of Death, Dying, and Grief: The Impact of Modern War
- HIST-SHU 225 The Global Space Age
- HIST-SHU 226 5000 Years of Chinese History: Fact or Fiction?
- HIST-SHU 231 WWII *
- HIST-SHU 302 History of Water
- HIST-SHU 313 China Goes Global: How China and the World Changed Each Other
- HIST-SHU 329 Futures of the Twentieth Century
- HIST-SHU 351 From Human Sacrifices to Illicit Sex at a Funeral: A History of Violence and Crime in Ancient China
- HIST-SHU 379 The Social Life of Things: Functions of Material Culture in Ancient Chinese Society and Beyond
- HUMN-SHU 202 Literary Interpretation
- HUMN-SHU 210 Modern South Asia
- HUMN-SHU 225 Topics in Asia-Pacific History Asia-Pacific History in the 20th Century
- HUMN-SHU 230 Topics in the Humanities: Global Modernisms
- HUMN-SHU 230 Topics in the Humanities: Aesthetics and Literature
- HUMN-SHU 366 Shanghai Stories

- HUMN-SHU 997 Humanities Independent Study
- LIT-SHU 225 Global Shakespeare
- LIT-SHU 245 Literature and Science in the Renaissance
- PHIL-SHU 76 Epistemology
- PHIL-SHU 80 Philosophy of Mind
- PHIL-SHU 90 Philosophy of Science
- PHIL-SHU 91 Philosophy of Biology
- PHIL-SHU 130 Philosophy of Technology: Thinking Machines
- PHIL-SHU 252 Philosophy of Law
- RELS-SHU 9270 Religion and Society in China: Gods, Ghosts, Buddhas and Ancestors
- SOCS-SHU 272 The US Constitution: Is It Relevant to China?
- SOCS-SHU 339 Comparative Revolutions
- SOCS-SHU 318 Ethnographic Methods
- WRIT-SHU 209 Forms of Personal Narrative
- WRIT-SHU 219 Intermediate Fiction Workshop

Capstone Course - 4 Credits

This semester-long course provides senior-year Humanities students with a platform to showcase their intellectual development. It requires students to write a thesis under the supervision of the course instructor, in consultation with faculty experts. Faculty members from other NYU sites may also serve in this role.

HUMANITIES

SAMPLE SCHEDULE 1

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

Fall Semester

Global Perspectives on Society	Core Class	Core class	English, Chinese, Core or General Elective
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Spring Semester

Writing as Inquiry	Digital Approaches	Core class or General Elective	English, Chinese, Core or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	Humanities Survey	Critical Concepts	Core, General Elective or Chinese
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Spring Semester

Core class	Humanities Survey	Humanities Topic	Core, General Elective or Chinese
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Year 3

Fall Semester

Core or General Elective	Humanities Topic	Humanities Topic	General Elective
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Spring Semester

Humanities Topic	Humanities Topic	General Elective	General Elective
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Year 4

Fall Semester

Humanities Topic	General Elective	General Elective	General Elective
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Spring Semester

Humanities Capstone	General Elective	General Elective	General Elective
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HUMANITIES

SAMPLE SCHEDULE 2

Year 1

Fall Semester

Global Perspectives on Society	Core class	Core class	English, Chinese General Elective
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Spring Semester

Writing as Inquiry	Core class	Core class or General Elective	English, Chinese, or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	Critical Concepts	Humanities Survey	Core class, General Elective or Chinese
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Spring Semester

Core class	Digital Approaches	Humanities Survey	Core class, General Elective, or Chinese
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Year 3

Fall Semester

Humanities Topic	Humanities Topic	Core or General Elective	General Elective
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Spring Semester

Humanities Topic	Humanities Topic	General Elective	General Elective
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Year 4

Fall Semester

Humanities Topic	Humanities Topic	General Elective	General Elective
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Spring Semester

Humanities Capstone	General Elective	General Elective	General Elective
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INTERACTIVE MEDIA ARTS

Interactive Media Arts (IMA) encourages students to explore the expressive possibilities brought about by emerging forms of technology, media and communication. Our students are challenged to create interactive systems that connect people, facilitate participation, convey information, communicate stories, enhance experiences, and otherwise augment and improve society. This may involve the creation of digital media, the development of software, the production of electronic devices, the fabrication of material objects, the construction of physical and virtual spaces, or the fearless investigation of the recently possible. Our curriculum, community and active learning environment facilitate student acquisition of both conceptual insights and practical skills, and encourages our students to explore their personal interests in an attempt to find imaginative human-centered solutions to design challenges found in everyday life and the world around us.

IMA is the first undergraduate program organized in collaboration with the Interactive Telecommunications Program (ITP), a top-ranked graduate program at Tisch School of the Arts at NYU in New York. In designing the IMA curriculum, we kept ITP's focus on the intersection of emerging media and humanistic values, but designed IMA to work within the undergraduate Liberal Arts curriculum present at NYU Shanghai. All IMA majors and minors take two foundation courses, Interaction Lab and Communications Lab. Interaction Lab introduces students to the fields of Interaction Design, Physical Computing and Digital Fabrication, and provides students with foundational skills in computer programming and electronics prototyping. Communications Lab introduces students to digital media, and asks them to produce a series of interactive multimedia projects for the Web using HTML, CSS and JavaScript. Students then choose from a range of elective categories across the disciplines of art, design, science, computation, media and business with great freedom to make their selections. Majors finish with a Capstone Studio course by synthesizing methods of research and practice to produce an interactive project and related 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.

When studying away, IMA majors may apply up to 12 credits, and IMA minors may apply up to 4 credits, obtained outside of the IMA Program in Shanghai towards the major.

Foundations - 8 credits

- INTM-SHU 101 Interaction Lab
- INTM-SHU 120 Communications Lab

Distribution Electives - 24 credits

Students must complete distribution elective courses in the following required categories: Art & Design, Computation & Data, Experimental Interfaces & Physical Computing, and Seminar. Courses can be 2, 3, or 4 credits, however only a 3 or 4 credit course can satisfy a required category by itself. A 2 credit course must be combined with another 2, 3, or 4 credit course under the same category to satisfy a category requirement.

Art & Design

Sample Courses

- BUSF-SHU 211 Design Thinking
- INTM-SHU 214 User Experience Design
- INTM-SHU 235 Digital Fabrication
- INTM-SHU 236-001 Topics in Art & Design: Toy Design and Prototyping

Computation & Data*

Sample Courses

- INTM-SHU 230-001 Topics in Computation & Data: Nature of Code
- INTM-SHU 230-002 Topics in Computation & Data: Generative Language
- INTM-SHU 231 Developing Web

* Students may count a single Computer Science elective either toward the Computation & Data category requirement or the overall distribution elective requirements if they also complete at least one 2 credit IMA elective in this category.

Experimental Interfaces & Physical Computing

Sample Courses

- INTM-SHU 165 Talking Fabrics
- INTM-SHU 222 Introduction to Robotics
- INTM-SHU 245-001 New Interfaces for Musical Expression
- INTM-SHU 246-003 Kinetic Interfaces

Seminar

Sample Courses

- INTM-SHU 193 Chinese Cyberculture
- INTM-SHU 225 Media & Participation
- PHIL-SHU 130 Philosophy of Technology: Thinking Machines

Remaining distribution elective requirements may be satisfied either by taking additional courses from the required categories above, or by taking courses from any of the following optional categories.

Business of Emerging Media

Sample Courses

- INTM-SHU 252 The Minimum Viable Product
- INTM-SHU 255 Shenzhen Style

Digital Humanities & Social Sciences

Sample Courses

- INTM-SHU 249 Street Life & Street Food in the 21st Century City

New Media & Entertainment

Sample Courses

- INTM-SHU 190 Collective Methods
- INTM-SHU 209 This is the Remix
- INTM-SHU 210 Animation: Traditional Techniques and Contemporary Practices
- INTM-SHU 221 Creating Immersive Worlds

Capstone - 4 credits

- INTM-SHU 400 Capstone Studio

INTERACTIVE MEDIA ARTS

SAMPLE SCHEDULE 1

This is just one example of how a student could organize their courses if pursuing a 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.

Year 1

Fall Semester

Global Perspectives on Society	Core class	Core class	English, Chinese, core or General Elective
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Spring Semester

Writing as Inquiry	Core Class	Interaction Lab or Communications Lab	English, Chinese, core or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	Interaction Lab or Communications Lab	Interactive Media Elective	Core, Chinese or General Elective
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Spring Semester

Core class	Interactive Media Elective	Interactive Media Elective	Core, Chinese or General Elective
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Year 3

Fall Semester

Interactive Media Elective	Core or General Elective	General Elective	General Elective
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Spring Semester

Interactive Media Elective	General Elective	General Elective	General Elective
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Year 4

Fall Semester

Interactive Media Elective	General Elective	General Elective	General Elective
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Spring Semester

Senior Thesis Project	General Elective	General Elective	General Elective
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INTERACTIVE MEDIA ARTS

SAMPLE SCHEDULE 2

Year 1

Fall Semester

Global Perspectives on Society	Core class	Core class	English, Chinese, Core or General Elective
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Spring Semester

Writing as Inquiry	Core Class or General Elective	Core class	English, Chinese, core or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	Interaction Lab or Communications Lab	Interactive Media Elective	Core, Chinese or General Elective
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Spring Semester

Core class	Interaction Lab or Communications Lab	Interactive Media Elective	Core, Chinese or General Elective
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Year 3

Fall Semester

Interactive Media Elective	Interactive Media Elective	Core or General Elective	General Elective
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Spring Semester

Interactive Media Elective	General Elective	General Elective	General Elective
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Year 4

Fall Semester

Interactive Media Elective	General Elective	General Elective	General Elective
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Spring Semester

Senior Thesis Project	General Elective	General Elective	General Elective
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Mathematics forms the cornerstone of the sciences, playing a powerful dual role as both a pure science and a tool for solving problems and modeling phenomena in other disciplines. For example, mathematics allows us to build efficient algorithms in computing, investigate rare events in financial markets, model the physical universe, develop predictions for climate science, map and study the human genome, and analyze the structure of the human brain. Mathematics draws vitality from questions arising in the natural world, as well as applications to industry and technology, and yet it is grounded in rigor and abstraction.

The Mathematics major is designed to give comprehensive training in both mathematics and its applications to prepare you for a career or more advanced degree programs. Courses required for the Mathematics major provide essential training and experience in analysis, algebra, differential equations, and probability theory. Mathematics elective courses cover numerous topics of pure and applied mathematics, including statistics, numerical analysis, partial differential equations, topology, differential geometry, scientific computing, mathematical finance, abstract algebra, number theory, and functional analysis.

NYU Shanghai offers two degree tracks in Mathematics: (a) Mathematics and (b) Honors Mathematics. Students who are interested in pursuing graduate study in Mathematics or related disciplines are encouraged to consider the Honors Mathematics degree.

REQUIREMENTS FOR THE MAJOR

Note: To fulfill the Core Curriculum Science requirement, Math majors must choose two courses from the following courses:

- Foundations of Physics I or II Honors or Physics I or II;
- Chemistry I or II;
- Biology I or II.

Student must take Calculus (or Honors Calculus) to satisfy the Mathematics requirement in the core curriculum. If Honors Calculus is used for the Core requirement, it may not be used as a "Constrained Math Elective" for the major as listed below.

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

- MATH-SHU 123 Multivariable Calculus
- MATH-SHU 140 Linear Algebra
- 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-SHU 282 Functions of a Complex Variable

Math Electives - Choose Eight, at least two must be from "Constrained Math Electives"

Constrained Math Electives

- MATH-SHU 141 Honors Linear Algebra I
- MATH-SHU 142 Honors Linear Algebra II
- MATH-SHU 201 Honors Calculus
- MATH-SHU 233 Honors Theory of Probability
- MATH-SHU 328 Honors Analysis I
- MATH-SHU 329 Honors Analysis II
- MATH-SHU 348 Honors Algebra I
- MATH-SHU 349 Honors Algebra II
- MATH-SHU 377 Differential Geometry

Additional Mathematics Electives

This list is not inclusive; 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 230 Introduction to Fluid Dynamics
- MATH-SHU 234 Mathematical Statistics
- MATH-SHU 240 Combinatorics
- MATH-SHU 250 Mathematics of Finance
- MATH-SHU 251 Scientific Computations
- MATH-SHU 252 Numerical Analysis
- MATH-SHU 263 Partial Differential Equations
- MATH-SHU 264 Dynamical Systems
- MATH-SHU 329 Honors Analysis II
- MATH-SHU 339 Real Variables
- MATH-SHU 341 Number Theory
- MATH-SHU 345 Intro to Stochastic Processes

- MATH-SHU 349 Honors Algebra II
- MATH-SHU 375 Topology
- MATH-SHU 377 Differential Geometry
- MATH-SHU 997 Math Independent Study

MATHEMATICS

SAMPLE SCHEDULE 1

This is just one example of how a student could organize their courses if pursuing a Math major. It assumes a student begins taking Math 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 I	Core Class (Calculus)	Core class	English, Chinese, Core or General Elective
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Spring Semester

Writing as Inquiry	Multivariate Calculus	Core class	English, Chinese, Core or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	Linear Algebra	Probability and Statistics	Chinese, Core or General Elective
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Spring Semester

Core class	Ordinary Differential Equations	Complex Variables	Chinese, Core or General Elective
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Year 3

Fall Semester

Core class or General Elective	Constrained Math Elective	Constrained Math Elective	General Elective
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Spring Semester

Mathematics Elective	Mathematics Elective	General Elective	General Elective
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Year 4

Fall Semester

Mathematics Elective	Mathematics Elective	General Elective	General Elective
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Spring Semester

Mathematics Elective	Mathematics Elective	General Elective	General Elective
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MATHEMATICS

SAMPLE SCHEDULE 2

Year 1

Fall Semester

Global Perspectives on Society	Core Class (Calculus)	Core class	English, Chinese, Core or General Elective
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Spring Semester

Writing as Inquiry	Core class	Core class or General Elective	English, Chinese, Core or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	Linear Algebra	Multivariate Calculus	Core, General Elective or Chinese
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Spring Semester

Core class	Probability and Statistics	Complex Variables	Core, General Elective or Chinese
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Year 3

Fall Semester

Core class or General Elective	Ordinary Differential Equations	Constrained Math Elective	Mathematics Elective
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Spring Semester

Constrained Math Elective	Mathematics Elective	Mathematics Elective	General Elective
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Year 4

Fall Semester

Mathematics Elective	Mathematics Elective	General Elective	General Elective
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Spring Semester

Mathematics Elective	General Elective	General Elective	General Elective
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REQUIREMENTS FOR THE MAJOR

Students desiring 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 Analysis I and Honors Linear Algebra II and posting of their spring semester freshman year grades.

To graduate with an Honors Mathematics degree students have to maintain a general GPA of 3.65 or higher and a GPA of 3.65 or higher in the major sequence. If they fail to do so they may graduate as mathematics majors but retain the Honors designation of the individual courses they took on their transcripts.

Note:

To fulfill the Core Curriculum Science requirement, Honors Mathematics majors must choose two courses from the following courses:

- Foundations of Physics I or II Honors or Physics I or II;
- Chemistry I or II;
- Biology I or II

Student must take Honors Calculus to satisfy the Mathematics requirement in the core curriculum.

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

- MATH-SHU 141 Honors Linear Algebra I
- MATH-SHU 142 Honors Linear Algebra II
- MATH-SHU 233 Honors Theory of Probability
- MATH-SHU 282 Complex Variables
- MATH-SHU 328 Honors Analysis I
- MATH-SHU 329 Honors Analysis II
- MATH-SHU 348 Honors Algebra I **OR** MATH-SHU 377 Differential Geometry
- MATH-SHU 362 Honors Ordinary Differential Equations **OR** MATH-SHU 262 Ordinary Differential Equations

Mathematics Electives - Choose Five

This list is not inclusive; 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 230 Introduction to Fluid Dynamics
- MATH-SHU 234 Mathematical Statistics
- MATH-SHU 240 Combinatorics
- MATH-SHU 349 Honors Algebra II
- MATH-SHU 250 Mathematics of Finance
- MATH-SHU 251 Scientific Computations
- MATH-SHU 252 Numerical Analysis
- MATH-SHU 263 Partial Differential Equation
- MATH-SHU 264 Dynamical Systems
- MATH-SHU 339 Real Variables
- MATH-SHU 341 Number Theory

- MATH-SHU 345 Intro to Stochastic Processes
- MATH-SHU 375 Topology
- MATH-SHU 997 Math Independent Study

Senior Thesis (by approval) or 1 additional Mathematics elective course

HONORS MATHEMATICS SAMPLE SCHEDULE 1

This is just one example of how a student could organize their courses if pursuing a Honors Math major. It assumes a student begins taking Honors Math 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 (Honors Calculus)	Honors Linear Algebra I	English, Chinese, Core or General Elective
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Spring Semester

Writing as Inquiry	Honors Analysis I	Honors Linear Algebra II	English, Chinese, Core or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	Honors Analysis II	Honors Ordinary Differential Equations	Core, General Elective, or Chinese
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Spring Semester

Core class	Complex Variables	Honors Theory of Probability	Core, General Elective, or Chinese
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Year 3

Fall Semester

Core class	Honors Algebra I or Differential Geometry	Mathematics Elective	Core class or GE
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Spring Semester

Core class	Mathematics Elective	Mathematics Elective	General Elective
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Year 4

Fall Semester

General Elective	Mathematics Elective	Mathematics Elective	General Elective
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Spring Semester

General Elective	Mathematics Elective	General Elective	General Elective
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HONORS

MATHEMATICS

SAMPLE SCHEDULE 2

Year 1

Fall Semester

Global Perspectives on Society	Core Class (Calculus)	English, Chinese, Core or General Elective	General Elective
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Spring Semester

Writing as Inquiry	Core or General Elective	English, Chinese, Core or General Elective	General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	Honors Calculus (Pre-req: Calculus with a grade of A or A-)	Honors Linear Algebra I	General Elective (Multivariable Calculus recommended)
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Spring Semester

Core, Chinese, or General Elective	Honors Analysis I	Honors Linear Algebra II	Complex Variables
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Year 3

Fall Semester

Core, Chinese, or General Elective	Honors Algebra I or Differential Geometry	Honors Ordinary Differential Equations	Honors Theory of Probability
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Spring Semester

Honors Analysis II	Mathematics Elective	Mathematics Elective	General Elective
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Year 4

Fall Semester

Mathematics Elective	Mathematics Elective	General Elective	General Elective
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Spring Semester

Mathematics Elective	Mathematics Elective	General Elective	General Elective
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* Note that Multivariable Calculus is recommended to take in Sophomore Fall if students decide to pursue the Honors Math major starting from the second year. After taking Multivariable Calculus, students can take Complex Variables in Sophomore Spring and can study away in their junior year Fall semester. Students who have not taken Multivariable Calculus have to stay in SH in their junior year Fall semester in order to take Honors Analysis II before studying away.

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. 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 Neural Science curriculum blends courses from many of the basic sciences (such as mathematics, biology, physics, & chemistry) as a foundation for higher level work in Neural Science. NS major requirement contains 5 required courses and 3 elective courses. Students who want to have hands-on experience in doing research can take Independent study in Neural Science with a faculty member as the research supervisor. In addition, students who demonstrate a genuine interest in research and achieve a grade point average can apply to be on Honors Track.

REQUIREMENTS FOR THE MAJOR

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.

Foundational Courses

- BIOL-SHU 21 Foundations of Biology I
- BIOL-SHU 22 Foundations of Biology II
- BIOL-SHU 123 FoS Biology Laboratory
- CHEM-SHU 125 Foundations of Chemistry I
- CHEM-SHU 126 Foundations of Chemistry II
- CHEM-SHU 127 FoS Chemistry Laboratory
- PHYS-SHU 71 FoS Physics Laboratory
- PHYS-SHU 91 Foundations of Physics I Honors **OR**
CCSC-SHU 50 Physics 1
- PHYS-SHU 93 Foundations of Physics II Honors **OR**
CCSC-SHU 51 Physics II
- PHYS-SHU 94 Physics II Lab

Note:

1. Neural Science majors are encouraged to complete the above classes in their first 2 years.
2. Neural Science majors are not required to take Foundations of Physics III Honors and may substitute General Physics I & II for the FoS Physics I & II Honors courses.
3. Relationship between General Physics and Foundations of Physics Honors (FoS 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. FoS Physics I-III Honors covers a similar set of topics in considerably greater depth, plus special relativity and an introduction to quantum mechanics, over three semesters. Please note that FoS Physics I & II Honors alone do not include some important topics, such as thermal and statistical physics, which are included in FoS Physics III Honors. Therefore, students electing to take the Honors Physics track are highly recommended to take FoS Physics III Honors as well. Students with strong high-school backgrounds in physics or maths are also highly recommended to take FoS Physics Honors I-III.

Required Major Courses (All Five)

- NEUR-SHU 201 Introduction to Neural Science (Fall)
- NEUR-SHU 251 Behavioral and Integrative Neuroscience (Spring)
- NEUR-SHU 301 Cellular and Molecular Neuroscience (Fall)
- PSYC-SHU 10 Statistics for Behavioral Sciences/
Math Tools for Behavioral Sciences
- **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 Electives (Choose Three)

- MATH-SHU 160 Networks and Dynamics (Spring)
- NEUR-SHU 10J Free Will and the Brain (Spring)
- NEUR-SHU 200 Topics: Neurobiology of Hearing
- 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 302 Modeling and Simulations in Neuroscience (Fall)

**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 and are strongly encouraged (but not required) to take Introduction to Programming and choose from the following listed courses to develop research skills.

- NEUR-SHU 997 Independent study in Neural Science (2-4 credits, can be repeated once): Open to advanced neural science majors with permission of DUS.

Recommended Computer Science General Electives:

- CSCI-SHU 101 Introduction to Computer Science
- CSCI-SHU 220 Algorithms
- CSCI-SHU 358 Theory of Computation

- CSCI-SHU 360 Introduction to Machine Learning and Data Mining
- 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 123 Multivariable Calculus
- MATH-SHU 140 Linear Algebra
- MATH-SHU 233 Theory of Probability
- MATH-SHU 235 Probability and Statistics
- MATH-SHU 263 Partial Differential Equations

NEURAL SCIENCE

SAMPLE SCHEDULE 1

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.

Year 1

Fall Semester

Global Perspectives on Society	Core Class (Calculus)	8 credits: Foundations of Physics I Honors, Foundations of Chemistry I, and FoS Physics Laboratory	2 credits: English or Chinese
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Spring Semester

Writing as Inquiry	Core Class	8 credits: Foundations of Biology I and Foundations of Chemistry II and FoS Chemistry Lab	2 credits: English or Chinese
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Year 2

Fall Semester

Perspectives on the Humanities	Introduction to Neural Science	5 credits: Foundations of Biology II and FoS Biology Laboratory	NS elective, Core, Chinese, or General Elective
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Spring Semester

Behavioral and Integrative Neuroscience	Statistics for The Behavioral Sciences	Chinese, English, or General Elective	5 credits: Foundations of Physics II Honors, Physics II Lab
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Year 3

Fall Semester

Cellular and Molecular Neuroscience	NS Elective	Chinese or General Elective	General Elective
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Spring Semester

Approved upper-level course in either Psychology or Biology	NS Elective	General Elective	General Elective
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Year 4

Fall Semester

NS Elective	General Elective (Independent Study)	General Elective	General Elective
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Spring Semester

General Elective (Independent Study)	General Elective	General Elective	General Elective
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NEURAL SCIENCE

SAMPLE SCHEDULE 2

Year 1

Fall Semester

Global Perspectives on Society	Core Class (Calculus)	Core Class	English, Chinese or General Elective
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Spring Semester

Writing as Inquiry	Core Class	3 credits: Foundations of Biology I	English, Chinese or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	Intro to Neural Science	8 credits: Foundations of Chemistry I, Foundations of Biology II, FoS Biology Laboratory	No class
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Spring Semester

Statistics for The Behavioral Sciences	Behavioral and Integrative Neuroscience	5 credits: Foundations of Chemistry II and FoS Chemistry Laboratory	Chinese or General Elective
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Year 3

Fall Semester

Cellular and Molecular Neuroscience	NS Elective	General Elective	Chinese or General Elective
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Spring Semester

Approved upper-level course in either Psychology or Biology	NS Elective	NS Elective	General Elective
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Year 4

Fall Semester

5 credits: Foundations of Physics I Honors, FoS Physics Laboratory	General Elective	General Elective	General Elective
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Spring Semester

5 credits: Foundations of Physics II Honors, Physics II Lab	General Elective	General Elective	General Elective
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PHYSICS

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 the Global Network with the prior approval.

Foundational Courses

- BIOL-SHU 21 Foundations of Biology I
- BIOL-SHU 123 FoS Biology Laboratory
- CHEM-SHU 125 Foundations of Chemistry I
- CHEM-SHU 126 Foundations of Chemistry II
- CHEM-SHU 127 FoS Chemistry Laboratory
- PHYS-SHU 71 FoS Physics Laboratory
- PHYS-SHU 91 Foundations of Physics I Honors **OR**
 CCSC-SHU 50 Physics I (*with a B+ or better grade*)
- PHYS-SHU 93 Foundations of Physics II Honors
- PHYS-SHU 94 Physics II Laboratory
- PHYS-SHU 95 Foundations of Physics III Honors
- PHYS-SHU 96 Foundations of Physics IV Honors

Note:

1. Relationship between General Physics and Foundations of Physics Honors (FoS Physics Honors): General Physics I & II is a calculus-based course for pre-med, 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. FoS 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 FoS Physics I & II Honors alone do not include some important topics, such as thermal and statistical physics, which are included in FoS Physics III Honors. Therefore, students electing to take the Honors Physics track are highly recommended to take FoS Physics III Honors as well.
2. Students who have taken 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 FoS 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 strong high-school backgrounds in physics or maths are strongly recommended to take FoS 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 123 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

Physics Electives - Choose Two

- PHYS-SHU 210 Computational Physics
- PHYS-SHU 252 Solid State Physics
- PHYS-SHU 255 Biophysics
- PHYS-SHU 314 Astrophysics
- PHYS-SHU 315 Nuclear and Particle Physics

PHYSICS

SAMPLE SCHEDULE 1

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 FoS Physics Laboratory	2 credits: English or Chinese
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Spring Semester

Writing as Inquiry	Multivariable Calculus	8 credits: Foundations of Physics II Honors, Physics II Lab, Foundations of Biology I	2 credits: English or Chinese
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Year 2

Fall Semester

Perspectives on the Humanities	Linear Algebra and Differential Equations	5 credits: Foundations of Physics III and FoS Biology Laboratory	Probability and Statistics
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Spring Semester

8 credits: Foundations of Physics IV Honors, Foundations of Chemistry II, FoS Chemistry Laboratory	Mathematical Physics	Core or General Elective	English or Chinese
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Year 3

Fall Semester

Electricity and Magnetism	Quantum Mechanics	Physics Elective	Chinese or General Elective
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Spring Semester

Statistical Mechanics and Thermodynamics	Physics Elective	General Elective	Chinese or General Elective
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Year 4

Fall Semester

Advanced Physics Lab	General Elective	General Elective	Chinese or General Elective
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Spring Semester

General Elective	General Elective	General Elective	Chinese or General Elective
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PHYSICS

SAMPLE SCHEDULE 2

Year 1

Fall Semester

Global Perspectives on Society	Core Class (Calculus)	Core Class	English, Chinese, or General Elective
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Spring Semester

Writing as Inquiry	Core Class	Multivariable Calculus	English, Chinese, or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	8 credits: Foundations of Physics I Honors, Foundations of Chemistry I, and FoS Physics Laboratory	Linear Algebra and Differential Equations	No Class
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Spring Semester

Probability and Statistics	8 credits: Foundations of Physics II Honors, Physics II Lab, Foundations of Biology I	General Elective	No Class
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Year 3

Fall Semester

5 credits: Foundations of Physics III and FoS Biology Laboratory	Chinese or General Elective	General Elective	General Elective
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Spring Semester

Mathematical Physics	8 credits: Foundations of Physics IV Honors, Foundations of Chemistry II, FoS Chemistry Laboratory	Chinese or General Elective	No Class
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Year 4

Fall Semester

Physics Elective	Electricity and Magnetism	Quantum Mechanics	General Elective
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Spring Semester

Statistical Mechanics and Thermodynamics	Advanced Physics Lab	Physics Elective	General Elective
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Social scientists study human interactions among individuals, families, communities, and nations. Using a range of analytical, interpretive, and experimental tools from anthropology, economics, sociology, political science, and psychology, 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, 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 disciplinary area or a synthetic combination of fields 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 on classic forms of social science analysis and new frontiers in social science research. Social Science majors select two foundational courses in the social science disciplines, and three focus courses chosen in consultation with their faculty mentor to deepen their engagement with a social science discipline (for example, anthropology or political science)* or an interdisciplinary topic of interest (for example, environmental studies, political economy, or global health). China--its peoples and politics--is an important focus for teaching and learning in the major, but the major is purposefully heterogeneous in the geographical, methodological, and analytical scope of its course offerings. Social Science majors complete an independent research project as part of a one-semester senior year capstone project.

*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

Note: While Calculus is not a requirement in the Social Science major, some Foundational/Methods/Focus courses (but not all) do require Calculus as a prerequisite. Thus, students are encouraged to consider what courses they would like 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 the Global Network with prior approval.

Foundational Courses (100-200 level) - Two Courses

These courses provide an introduction to the foundational knowledge and building blocks of analytic methods in a range of social sciences. Typical coursework: A mix of lectures, discussion, assignments, shorter essays, quizzes, and/or exams.

Sample Courses

• ECON-SHU 1	Principles of Macroeconomics
• ECON-SHU 2	Principles of Microeconomics
• ECON-SHU 3	Microeconomics
• ECON-SHU 251	Economics of Global Business
• PSYC-SHU 101	Introduction to Psychology
• SOCS-SHU 135	Environment and Society
• SOCS-SHU 150	Introduction to Comparative Politics
• SOCS-SHU 160	Introduction to International Politics

Methods Courses (100-300 level) - Two Courses

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

• BUSF-SHU 101	Statistics for Business and Economics
• ECON-SHU 213	Causal Inference in the Social Sciences
• ECON-SHU 216	Introduction to Game Theory
• ECON-SHU 301	Econometrics
• MATH-SHU 235	Probability and Statistics
• SOCS-SHU 141	Methods of Social Research
• SOCS-SHU 210	Statistics for the Behavioral and Social Sciences
• SOCS-SHU 248	Fraud
• SOCS-SHU 318	Ethnographic Methods

** If a methods course carries only 2 credits, a second 2-credit course in a similar field is needed to complete a method course requirement.*

Core Courses (200-300 level) (Prereq: GPS) - Two Courses

The core social science courses are interdisciplinary courses that create unexpected connections between the social science disciplines. Classic Problems courses introduce the history and philosophy of the social scientific approach. New Challenges courses introduce new approaches to current

challenges in social science research. Students must take one course from each of the two core 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.

Classic Problems in Social Science

Sample Courses

- SOCS-SHU 229 Capitalism, Socialism, Communism
- SOCS-SHU 245 Ethnographic Thinking

New Challenges in Social Science

Sample Courses

- SOCS-SHU 234 Image as Evidence
- SOCS-SHU 270 Social Change in Contemporary China
- SOCS-SHU 301 Complexity
- SOCS-SHU 334 Legal Psychology

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

These courses give students an in-depth look at one specific topic or one field. In consultation with their faculty mentor, students may choose to focus in a particular social science discipline or on one topic from an interdisciplinary perspective. Additional focus courses are widely available at the study away sites, NYU New York, and NYU Abu Dhabi.

Sample Courses

- BPEP-SHU 9042 Political Economy of East Asia (GCHN-SHU 342)
- CCSF-SHU 123 Contemporary Chinese Political Thought
- ECON-SHU 10 Intermediate Microeconomics
- ECON-SHU 200 Topics: Economics of Gender
- ECON-SHU 202 Intermediate Macroeconomics
- ECON-SHU 215 Economic History
- ECON-SHU 238 History of Modern Economic Growth: Exploring China From a Comparative Perspective
- ECON-SHU 260 International Trade
- GCHN-SHU 240 Modern Chinese Governance
- GCHN-SHU 241 Chinese Revolutions
- GCHN-SHU 243 Chinese Environmental Studies
- INTM-SHU 225 Media and Participation
- LWSO-SHU 491 International Investment Transactions in Developing Countries
- MCC-SHU 9451 Global Media Seminar: China
- PSYC-SHU 234 Developmental Psychology
- PSYC-SHU 329 Parenting and Culture
- PSYC-SHU 349 Cultures of Psychology
- SOCS-SHU 232 International Law and Institutions
- SOCS-SHU 241 Cultures of Business and Work
- SOCS-SHU 251 Law, Culture, and Politics in China
- SOCS-SHU 272 The U.S. Constitution: Is It Relevant to

	China?
• SOCS-SHU 306	Pestilence: Critical Perspectives in Global Health
• SOCS-SHU 333	Global Environmental Politics
• SOCS-SHU 339	Comparative Revolutions
• SOCS-SHU 400	Topics in Social Policy: Poverty and Inequality Around the Globe

Focus Options: Disciplinary, Interdisciplinary, and Self-Designed

Students majoring in Social Science are required to choose a disciplinary or interdisciplinary track, which determines the courses they choose for their 3 Focus requirements and the subject of their senior capstone project. Tracks are noted on student transcripts. Disciplinary tracks available include Anthropology, Political Science, Psychology, and Sociology. (Students who wish to pursue a track in Economics are advised to major in Economics instead.) Interdisciplinary tracks are available in Environmental Studies, Global Health, International Relations, and Political Economy. Students may choose "Self-Designed" as their track, and select their Focus courses and senior capstone project in consultation with a faculty mentor. For these students, "Self-Designed" will appear as the track of record on their transcripts.

Capstone Course - One Course

Students complete a capstone seminar course during one semester of their senior year. As part of the capstone seminar students conduct an independent research project in their area of focus 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.

Social Science

SAMPLE SCHEDULE 1

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

Fall Semester



Spring Semester



Year 2

Fall Semester



Spring Semester



Year 3

Fall Semester



Spring Semester



Year 4

Fall Semester



Spring Semester



Social Science

SAMPLE SCHEDULE 2

Year 1

Fall Semester

Global Perspectives on Society	Core Class	Core class	English or Chinese
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Spring Semester

Writing as Inquiry	Core class	General Elective	English or Chinese
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Year 2

Fall Semester

Perspectives on the Humanities	Foundational Course	Social Science Core	Core class or Chinese
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Spring Semester

Social Science Core	Core class	Core class or Chinese	General Elective
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Year 3

Fall Semester

Foundational Course	Focus Course	Core or General Elective	General Elective
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Spring Semester

Methods Course	Focus Course	Core or General Elective	General Elective
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Year 4

Fall Semester

Focus Course	Methods Course	General Elective	General Elective
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Spring Semester

Core class	Capstone Course	General Elective	General Elective
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BUSINESS

BUSINESS AND FINANCE

BUSINESS AND MARKETING

BUSINESS AND FINANCE

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, 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

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 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.

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 Electives - Choose Two

- BUSF-SHU 142 Information Technology in Business and Society
- BUSF-SHU 210 Business Analytics
- BUSF-SHU 351 Competitive Advantage from Operations
- MGMT-SHU 301 Management and Organizations
- MKTG-SHU 1 Introduction to Marketing*

Finance Electives - Choose Two

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 306 The Chinese Financial System
- BUSF-SHU 321 Equity Valuation
- BUSF-SHU 352 Mergers & Acquisitions
- BUSF-SHU 353 International Financial Management

Non-Finance Electives - Choose Two from the Following Areas

Accounting

Management

Marketing*

Operations

Information System

China Business Studies - Choose One **

- BPEP-SHU 9042 The Political Economy of East Asia
- BUSF-SHU 288 Doing Business in China

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

*** Students who are admitted into the Business Honors Program and conduct a China related research may fulfill the China Business Studies requirement with the credits from Business Honors Program.*

BUSINESS AND FINANCE

SAMPLE SCHEDULE

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.

Year 1

Fall Semester

Global Perspectives on Society	Core Class (Calculus)	Core class	English, Chinese, Core or General Elective
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Spring Semester

Writing as Inquiry	Principles of Microeconomics	Statistics for Business and Economics	English, Chinese, Core or General Elective
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Year 2

Fall Semester

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

Core class or General Elective	Economics of Global Business	Corporate Finance	Core, General Elective, or Chinese
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Year 3

Fall Semester

Core class or General Elective	Business Core Elective	Finance Elective or Non-Finance Elective	Core class or GE
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Spring Semester

Core class or GE	Business Core Elective	Finance Elective or Non-Finance Elective	General Elective
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Year 4

Fall Semester

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

Non-Finance Elective or Finance Elective or China Business Studies	General Elective	General Elective	General Elective
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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, finance, marketing, operations, and organizational management.

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

REQUIREMENTS FOR THE MAJOR

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 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.

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 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 Competitive Advantage from Operations
- MGMT-SHU 301 Management and Organizations

Marketing Electives - Choose Two

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.

NOTE: 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 3 Advertising
- MKTG-SHU 9 Research for Customer Insights
- MKTG-SHU 53 Pricing
- MKTG-SHU 57 Digital Marketing

Non-Marketing Electives - Choose Two from the Following Areas*

Accounting
Management
Finance*
Operations
Information System

China Business Studies - Choose One **

- BPEP-SHU 9042 The Political Economy of East Asia
- BUSF-SHU 206 Doing Business in China

** 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.*

*** Students who are admitted into the Business Honors Program and conduct a China related research may fulfill the China Business Studies requirement with the credits from Business Honors Program.*

BUSINESS AND MARKETING

SAMPLE SCHEDULE

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. Students may propose alternative course sequences to their advisors as well.

Year 1

Fall Semester

Global Perspectives on Society	Core Class (Calculus)	Core class	English, Chinese, Core, or General Elective
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Spring Semester

Writing as Inquiry	Principles of Microeconomics	Statistics for Business and Economics	English, Chinese, Core, or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	Principles of Financial Accounting	Foundations of Finance or Introduction to Marketing	Core, General Elective, or Chinese
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Spring Semester

Core or General Elective	Economics of Global Business	Foundations of Finance or Introduction to Marketing	Core, General Elective, or Chinese
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Year 3

Fall Semester

Core or General Elective	Business Core Elective	Marketing Elective or Non-Marketing Elective	Core class or GE
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Spring Semester

Marketing Elective or Non-Marketing Elective	Business Core Elective	General Elective	General Elective
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Year 4

Fall Semester

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

Non-Marketing Elective or Marketing Elective or China Business Studies	General Elective	General Elective	General Elective
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COMPUTER 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, 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 smartphone application development. 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 Analytics and the Neuroscience Research Institute.

Computer science graduates have a myriad of career paths, including: creating information technology products of the future at large and dynamic companies such as Google, Microsoft, Amazon, Apple or within exciting high-tech startups throughout the world. Entrepreneurship skills combined with computer science prowess can help in creating your own high-tech startup, pursuing careers in business or finance that leverage computer science expertise, or going on to do cutting-edge research in a PhD 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

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 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 Major Courses

- CSCI-SHU 101 Introduction to Computer Science
- MATH-SHU 235 Probability and Statistics
OR MATH-SHU 233 Theory of Probability **OR**
BUSF-SHU 101 Statistics for Business and Economics
OR BIOL-SHU 42 Biostatistics
- CENG-SHU 202 Computer Architecture (prereq: CSCI-SHU 11 Intro to Programming or CSCI-SHU 101 Intro to Computer Science)
OR CSCI-UA 201 Computer Systems Organization
- CSCI-SHU 210 Data Structures (prereq: CSCI-SHU 101 Intro to Computer Science or CSCI-SHU 11 Intro to Computer Programming and permission of instructor)
- CSCI-SHU 215 Operating Systems (prereq: CSCI-SHU 210 Data Structures; CENG-SHU 202 Computer Architecture or Computer Systems Organization)
- CSCI-SHU 220 Algorithms (prereq: CSCI-SHU 210 Data Structures and CSCI-SHU 2314 Discrete Math)
- CSCI-SHU 2314 Discrete Mathematics (co-requisite or prereq: MATH-SHU 121 Calculus)

Computer Science Electives - Choose Four

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
- CENG-SHU 303 Parallel and Distributed Computing
- CENG-SHU 304 Computer Security
- CSCI-SHU 222 Introduction to Game Programming
- CSCI-SHU 235 Information Visualization
- CSCI-SHU 304 Network Security
- CSCI-SHU 308 Computer Networking
- CSCI-SHU 310 UNIX System Programming
- CSCI-SHU 340 Introduction to Databases
- CSCI-SHU 360 Machine Learning
- CSCI-SHU 410 Software Engineering
- EENG-SHU 375 Robotic Systems
- INTM-SHU 231 Developing Web
- Computer Music (no number yet)
- Advanced Topics in AI and Machine Learning (no number yet)

Senior Project

COMPUTER SCIENCE

SAMPLE SCHEDULE 1

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.

Year 1

Fall Semester

Global Perspectives on Society	Core Class (Calculus)	Core class (Intro to Programming/ Computer Science)	English, Chinese, Core, or General Elective
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Spring Semester

Writing as Inquiry	Core class	Introduction to Computer Science or Data Structures	English, Chinese, Core, or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	Data Structures or Computer Science Elective	Discrete Mathematics	Core, General Elective, or Chinese
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Spring Semester

Core class	Computer Science Elective	Computer Architecture	Core, General Elective or Chinese
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Year 3

Fall Semester

Core or General Elective	Computer Science Elective	Algorithms	General Elective
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Spring Semester

Core or General Elective	Computer Science Elective	Probability and Statistics or alternate courses, see pg. 161	General Elective
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Year 4

Fall Semester

Operating Systems	Computer Science Elective or General Elective	General Elective	General Elective
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Spring Semester

Senior Project	General Elective	General Elective	General Elective
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COMPUTER SCIENCE

SAMPLE SCHEDULE 2

Year 1

Fall Semester

Global Perspectives on Society	Core Class (Calculus)	Core class	English, Chinese, Core, or General Elective
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Spring Semester

Writing as Inquiry	Core class	Core or General Elective	English, Chinese, Core, or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	Core class (Intro to Programming/Computer Science)	Discrete Mathematics	Core, General Elective, or Chinese
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Spring Semester

Computer Science Elective	Introduction to Computer Science or Data Structures	Computer Architecture	Core, General Elective, or Chinese
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Year 3

Fall Semester

Computer Science Elective	Data Structures or Computer Science Elective	Probability and Statistics or alternate courses, see pg. 161	General Elective
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Spring Semester

Algorithms	Computer Science Elective	General Elective	General Elective
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Year 4

Fall Semester

Core class	Computer Science Elective or General Elective	Operating Systems	General Elective
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Spring Semester

Computer Science Elective	Senior Project	General Elective	General Elective
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COMPUTER SYSTEMS ENGINEERING

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.

The Computer 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 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 across the curriculum to develop an understanding of cultural, political, economic, environmental, and public safety considerations. In their courses, Computer Systems Engineering students are involved in the design process and the progression of technological inventions from concept through product development and market introduction.

REQUIREMENTS FOR THE MAJOR

Note: To fulfill the Core Curriculum Science requirement, students must take: 1) PHYS-SHU 91 Foundations of Physics I Honors or CCSC-SHU 50 Physics I; 2) PHYS-SHU 93 Foundations of Physics II Honors or CCSC-SHU 51 Physics II; and 3) CCSC-SHU 53 Physics II Lab.

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.

Required Major Courses

- CENG-SHU 201 Digital Logic
- CENG-SHU 202 Computer Architecture
- CENG-SHU 350 Embedded Computer Systems
- CSCI-SHU 101 Introduction to Computer 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 123 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

Major Electives - Choose Two

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 215 Operating Systems
- CENG-SHU 302 Compilers
- CENG-SHU 303 Parallel and Distributed Computing
- CENG-SHU 304 Computer Security
- CSCI-SHU 304 Network Security
- CSCI-SHU 308 Computer Networking
- CSCI-SHU 310 UNIX System Programming
- CSCI-SHU 340 Introduction to Databases
- EENG-SHU 3193 Very Large Scale Integration Circuit Design
- EENG-SHU 322 Electronics
- EENG-SHU 375 Robotic Systems

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

COMPUTER SYSTEMS ENGINEERING

SAMPLE SCHEDULE 1

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 Programming/ Computer Science	English, Chinese, Core, or General Elective
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Spring Semester

Writing as Inquiry	Introduction to Computer Science or Rapid Prototyping (or similar IMA course)	Multivariable Calculus	English, Chinese, Core, or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	Digital Logic	Physics I & Lab	Core, General Elective, or Chinese
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Spring Semester

Intro to Computer Science or Data Structures	Circuits	Physics II & Lab	Core, General Elective, or Chinese
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Year 3

Fall Semester

Data Structures or Core class	Computer Architecture	Probability and Statistics or Theory of Probability	Computer Systems Engineering Elective
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Spring Semester

Discrete Math	Linear Algebra and Differential Equations or alternative course	Embedded Computer Systems	General Elective
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Year 4

Fall Semester

Core or General Elective	Core or General Elective	Computer Systems Engineering Elective	General Elective
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Spring Semester

Core or General Elective	Senior Capstone Design Project	General Elective	General Elective
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COMPUTER SYSTEMS ENGINEERING

SAMPLE SCHEDULE 2

Year 1

Fall Semester

Global Perspectives on Society	Core Class (Calculus)	Physics I & Lab	English, Chinese, Core, or General elective
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Spring Semester

Writing as Inquiry	Core or General Elective	Physics II & Lab	English, Chinese, Core, or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	Intro to Programming/ Computer Science	Multivariable Calculus	Core class
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Spring Semester

Circuits	Introduction to Computer Science or Rapid Prototyping (or similar IMA course)	Probability and Statistics or Theory of Probability	Core or General Elective
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Year 3

Fall Semester

Embedded Computer Systems	Intro to Computer Science or Data Structures	Linear Algebra and Differential Equations or alternative course	Computer Systems Engineering Elective
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Spring Semester

Digital Logic	Data Structures or Core class	Discrete Math	General Elective
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Year 4

Fall Semester

Core class	Computer Systems Engineering Elective	General Elective	General Elective or Chinese
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Spring Semester

Senior Design Project	Computer Architecture	General Elective	General Elective or Chinese
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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

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 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.

Foundational Courses

- CSCI-SHU 101 Introduction to Computer Science
- MATH-SHU 235 Probability and Statistics

OR MATH-SHU 233 Theory of Probability

OR BUSF-SHU 101 Statistics for Business and Economics

Required Major Courses

Programming & Computer Science

- CSCI-SHU 210 Data Structures

Mathematics

- MATH-SHU 123 Multivariable Calculus **OR** ECON-SHU 5 Math for Economists (2 credits or 4 credits)
- MATH-SHU 140 Linear Algebra

Data Analysis

- CSCI-SHU 235 Information Visualization
- CSCI-SHU 360 Machine Learning
- ECON-SHU 301 Econometrics

Data Management

- CSCI-SHU 283 Introduction to Databases

Concentration Courses

2 domain-area courses

Senior project or another domain-area course

**Please refer to the Academic Advising Website for concentration options.*

Note: Students who are strong in mathematics are encouraged to take Analysis I and Analysis II (in place of Multivariable Calculus), Honors Linear Algebra I and II (in place of Linear Algebra), and Theory of Probability.

DATA SCIENCE

SAMPLE SCHEDULE 1

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

Fall Semester

Global Perspectives on Society	Core Class (Calculus)	Core class (Intro to Programming/ Computer Science)	English, Chinese, Core, or General Elective
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Spring Semester

Writing as Inquiry	Probability and Statistics or alternate courses, see pg. 169	Machine Learning	English, Chinese, Core, or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	Intro to Computer Science or Data Structures	Multivariable Calculus OR Math for Economists	Core, General Elective, or Chinese
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Spring Semester

Core class	Data Structures or Domain-area class	Econometrics	Core, General Elective, or Chinese
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Year 3

Fall Semester

Core or General Elective	Databases	Domain-area class	General Elective
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Spring Semester

Core or General Elective	Linear Algebra	Domain-area class or General Elective	General Elective
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Year 4

Fall Semester

Information Visualization	General Elective	General Elective	General Elective
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Spring Semester

Senior Project or another domain-area course	General Elective	General Elective	General Elective
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DATA SCIENCE

SAMPLE SCHEDULE 2

Year 1

Fall Semester

Global Perspectives on Society	Core Class (Calculus)	Core class	English, Chinese, Core, or General Elective
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Spring Semester

Writing as Inquiry	Core class	Core or General Elective	English, Chinese, Core, or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	Core class (Intro to Programming/ Computer Science)	Multivariable Calculus OR Math for Economists	Core, General Elective, or Chinese
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Spring Semester

Machine Learning	Intro to Computer Science or Data Structures	Probability and Statistics or alternate courses, see pg. 169	Core, General Elective, or Chinese
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Year 3

Fall Semester

Econometrics	Data Structures or Domain-area class	Databases	General Elective
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Spring Semester

Core class	Linear Algebra	Domain-area class	General Elective
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Year 4

Fall Semester

Information Visualization	General Elective	Domain-area class or General Elective	General Elective
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Spring Semester

Senior Project or another domain-area course	General Elective	General Elective	General Elective
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ELECTRICAL AND SYSTEMS ENGINEERING

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

Note: To fulfill the Core Curriculum Science requirement, students must take: 1) PHYS-SHU 91 Foundations of Physics I Honors or CCSC-SHU 50 Physics I; 2) PHYS-SHU 93 Foundations of Physics II Honors or CCSC-SHU 51 Physics II; and 3) CCSC-SHU 53 Physics II Lab.

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.

Required Major Courses

- CENG-SHU 201 Digital Logic
- CSCI-SHU 11 Introduction to Programming **OR** CSCI-SHU 101 Introduction to Computer Science
- EENG-SHU 2054 Signals and Systems
- EENG-SHU 251 Circuits
- EENG-SHU 304 Electromagnetic Fields and Waves
- EENG-SHU 322 Electronics
- EENG-SHU 400/EENG-SHU 401 Senior Capstone Design Project (*4-credit project taken in the spring semester of senior year*)
- MATH-SHU 123 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 2 from these 4 courses:

- EENG-SHU 356 Communication Systems
- EENG-SHU 364 Feedback Control
- EE-UY 112/EE-UY 3124 Fundamentals of Electronics II (*offered in New York*)
- EE-UY 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
- EENG-SHU 306 Instrumentation, Sensors and Actuators
- EENG-SHU 3193 Very Large Scale Integrated (VLSI) Circuit Design
- EENG-SHU 355 Digital Signal Processing
- EENG-SHU 356 Communication Systems
- EENG-SHU 375 Robotic Systems

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

ELECTRICAL AND SYSTEMS ENGINEERING

SAMPLE SCHEDULE 1

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.

Year 1

Fall Semester

Global Perspectives on Society	Core Class (Calculus)	Intro to Programming/ Computer Science	English, Chinese, Core, or General Elective
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Spring Semester

Writing as Inquiry	Multivariable Calculus	Linear Algebra and Differential Equations or alternate course	English, Chinese, Core, or General Elective
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Year 2

Fall Semester

Perspectives on the Humanities	Physics I & Lab	Digital Logic	Core, General Elective, or Chinese
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Spring Semester

Core or General Elective	Physics II & Lab	Circuits	Core , General Elective, or Chinese
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Year 3

Fall Semester

Core or General Elective	Electronics	Electromagnetic Fields and Waves	Signals and Systems
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Spring Semester

Electrical and Systems Engineering Elective	Electrical and Systems Engineering Elective	General Elective	General Elective
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Year 4

Fall Semester

Probability and Statistics or Theory of Probability	Electrical and Systems Engineering Elective	Electrical and Systems Engineering Elective	General Elective
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Spring Semester

Senior Capstone Design Project	General Elective	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 & Lab	English, Chinese, Core, or General Elective
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Spring Semester

Writing as Inquiry	Multivariable Calculus	Physics II & Lab	Intro to Programming/Computer Science	2-credit English or Chinese (if available)
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Year 2

Fall Semester

Perspectives on the Humanities	Digital Logic	Core Class	Core Class
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Spring Semester

Core or General Elective	Circuits	Linear Algebra and Differential Equations or alternate course	Core or General Elective
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Year 3

Fall Semester

Electronics	Signals and Systems	Electromagnetic Fields and Waves	General Elective
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Spring Semester

Probability and Statistics or Theory of Probability	Electrical and Systems Engineering Elective	Electrical and Systems Engineering Elective	General Elective
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Year 4

Fall Semester

Electrical and Systems Engineering Elective	Electrical and Systems Engineering Elective	General Elective or Chinese	General Elective
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Spring Semester

Senior Capstone Design Project	General Elective or Chinese	General Elective	General Elective
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**SELF-
DESIGNED
HONORS
MAJOR**

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 Assistant 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 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.

Additional Majors and Minors at New York University Shanghai

Requirements for an Additional or Double Major

See Page 31.

Regulations Pertaining to both Major and Minor

See Page 31.

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 (Formerly 264) 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 Intro to Macro and Intermediate Macro to substitute EGB)
- MATH-SHU 121 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 Competitive Advantage from Operations
- 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 Competitive Advantage from Operations
- 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
- CHEM-SHU 127 FoS Chemistry Laboratory
- CHEM-SHU 225 Organic Chemistry I + Organic Chemistry I Lab
- CHEM-SHU 226 Organic Chemistry II + Organic Chemistry II Lab

Chinese 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 passed out of with other Chinese language classes higher than the level(s) they passed out of.**

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 is 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 Advanced High Business Chinese, Readings in Chinese Culture I, and Readings in Chinese Culture II.

Computer Science Minor

- CENG-SHU 202 Computer Architecture
- CSCI-SHU 101 Introduction to Computer Science (prereq: CSCI-SHU 11 Introduction to Computer Programming or placement exam)
- CSCI-SHU 210 Data Structures
- One computer science elective course

Computer Systems Engineering Minor

- CENG-SHU 201 Digital Logic
- CENG-SHU 202 Computer Architecture **OR** CENG-SHU 350 Embedded Computer Systems
- CSCI-SHU 11 Introduction to Programming **OR** INTM-SHU 101 Interaction Lab
- CSCI-SHU 101 Introduction to Computer Science
- EENG-SHU 251 Circuits

Creative Writing Minor

- WRIT-SHU 159 Introduction to Creative Writing (a prerequisite for the intermediate and advanced craft courses).
- Two intermediate/advanced craft courses
- An additional intermediate/advanced craft course or a designated elective

Data Science Minor

- CSCI-SHU 101 Introduction to Computer Science (prereq: CSCI-SHU 11 Intro to Programming or placement exam)
- CSCI-SHU 210 Data Structures
- CSCI-SHU 360 Machine Learning
- ECON-SHU 301 Econometrics
- MATH-SHU 235 Probability and Statistics **OR** MATH-SHU 233 Theory of Probability **OR** BUSF-SHU 101 Statistics for Business and Economics **OR** BIOL-SHU 42 Biostatistics

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
- Two additional 4-credit courses from the Economics elective list

Electrical and Systems Engineering Minor

- CENG-SHU 201 Digital Logic
- CSCI-SHU 11 Introduction to Programming **OR** INTM-SHU 101 Interaction Lab
- EENG-SHU 251 Circuits
- Electrical and Systems Engineering Elective

Global China Studies minor

Four classes from the required and elective list of Global China Studies courses, of which at least one must be from the required list. 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

- INTM-SHU 101 Interaction Lab
- INTM-SHU 120 Communications Lab
- 7-8 credits from the Interactive Media Arts Elective List

Literature Minor

Four classes from the required and elective list of Humanities major Literature

courses.

Mathematics Minor

Four 4-credit mathematics courses at the Calculus level or higher.
Of current math offerings, Mathematics for Economists and Mathematical Functions do not count for the minor.

Neural Science Minor

- BIOL-SHU 21 Foundations of Biology I
- BIOL-SHU 22 Foundations of Biology II
- BIOL-SHU 123 FoS Biology Laboratory
- NEUR-SHU 201 Introduction to Neural Science
- NEUR-SHU 251 Behavioral and Integrative Neuroscience

OR NEUR-SHU 301 Cellular and Molecular Neuroscience

Philosophy minor

Four classes from the required and elective list of Humanities major Philosophy courses.

Physics Minor

- PHYS-SHU 71 FoS Physics Laboratory
- PHYS-SHU 91 Foundations of Physics I Honors **OR** CCSC-SHU 50 Physics I
- PHYS-SHU 93 Foundations of Physics II Honors **OR** CCSC-SHU 51 Physics II
- PHYS-SHU 94 Physics II Laboratory
- 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 courses.

Global Network Minor

Students can complete a Global Network (GN) Minor using classes from one or more of the eleven Study Away Sites or the degree-granting campuses in the 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 Global Network drawing on courses from any of the study away sites or degree-granting campuses. 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 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. 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 200

Topics in Acting: Intro to Dramatic Literature: The Nature of The Play

A creative exploration of four plays that illustrate the arc of dramatic literature throughout history and the synergy of dramaturgical components even as they span the centuries. By means of reading, discussing and exploring the various production elements of each of these plays, students will attain an awareness and working knowledge as to what defines a play as an engaging sensory experience; one that also serves as a catalyst for exploring their timelessness and application to current trends and controversies. Culminating projects include an experiential exercise/presentation based on the work studied and individual production portfolio by advisement.

Prerequisite: None.

ART-SHU 200

Topics in Acting: Theory and Practice

This course is focused on the theoretical and practical techniques necessary for the actor to live truthfully within the imaginary circumstances of a character. Students participate in group and individual activities centered on self-observation, applying discoveries to improvisations, monologues, and scene work. At the onset of the class, one filmic version of the chosen play is viewed, (and if possible, attendance at a live performance of the same text), which will serve as the touchstone for class members to explore the various tenets and themes of the play, especially as to how they inform acting choices. In the first part of the semester students will concentrate on a series of lessons designed to facilitate exploration of a character's physical, intellectual and social truth. In the second half of the semester students will present monologues of their own choice (subject to approval by instructor) and scenes by applying the lessons and techniques learned. Reading and writing assignments are due as outlined in the course schedule. Class participants should wear suitable clothing for movement and rehearsal.

Prerequisite: None.

ART-SHU 210

Introduction to Studio Art - Chinese Traditional Methods in Contemporary Art

This course will be an introduction to studio art for students who want to learn traditional Chinese art forms with contemporary expression, to traverse both cultural and temporal barriers of visual arts. These include calligraphy and ink painting as seen from a modern perspective. Students will examine the content of artwork, including ideas in contemporary and traditional art, both Chinese and international, and build various skills to translate ideas into reality. The course includes a study of ancient Chinese paintings, drawings of still-lifes, as well as visits to local artists, galleries, and museums. Class time will be devoted to individual projects and critiques, lectures, and group discussions.

This course is open to all students with or without an art background.

Note that attendance in the first class meeting is mandatory, otherwise you will be dropped from the course.

This course satisfies: Core Curriculum: Culture Foundations: Chinese Art.

ART-SHU 211

Foundations in Painting

It is an exciting time in contemporary painting. The rules have changed. Artists are making paintings no longer limited by a particular medium or set of mediums. In the "Now," painting is made up of non-hierarchical inclusions of materials, many of which are non-art-mediums adopted for studio use, and various approaches that mirror the complexities and experiences of our daily lives.

At the forefront of this non-hierarchical, cross-disciplinary attitude are artists such Shahzia Sikander, Charline von Heyl, Mark Bradford, Os Gemeos, and Beatriz Milhazes.

Students will learn or revisit foundational techniques, modes, forms, and applications - composition, color, form, space, surface, and texture using materials such as acrylic and oil paint, various mediums, ink, collage and transfer techniques, and reductive methods. Further, they will explore the implications and uses of materiality as a subject as well as a tool or medium.

Students will also engage in selected readings to ground their visual pursuits in an historical and classical understanding as well as a theoretical, critical and contemporary context. Students will become proficient in the fundamental skills needed to write an artist statement, art critique and a work-in-progress conceptual outline.

Prerequisite: None.

ART-SHU 225A

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.

This class counts towards the Tisch School of the Arts Dance Minor.

ART-SHU 225B

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.

This class counts towards the Tisch School of the Arts Dance Minor.

This course satisfies: Global China Studies: Global China Studies Electives.

ART-SHU 230

Ballet

This course is an introduction to the fundamentals of classical ballet technique. A thorough warm-up will be given in each class to improve strength, balance, and coordination through various exercises. This class begins with barre, develops into stretch, adagio, and finishes with allegro and reverence. Throughout the semester, three major movement combinations will be taught and the student will be expected to demonstrate their mastery of those combinations. No prior dance experience is necessary.

ART-SHU 239.2

Choreography & Performance

The purpose of this 2-credit course is to enable the student to gain an appreciation and knowledge of team building skills, collaboration, and the creative process through movement exploration, choreography and performance. Through individual and collective participation in bodywork, contact improvisation, developing phrases, and playing an active role in the final performance, students are physically and conceptually challenged and informed. Through better understanding space, control, aesthetics, alignment, and musicality as well as practicing learning strategies within a duet/group context, the student gains an appreciation not only for self and collective discovery, but also for the creative process underlining and shaping personal, artistic expression. All levels are welcome. No previous experience is required.

This class counts towards the Tisch School of the Arts Dance Minor.

ART-SHU 239.4

Choreography & Performance

The purpose of this 4-credit course is to enable the student to gain an appreciation and knowledge of team building skills, collaboration, and the creative process through movement exploration, choreography and performance. Through individual and collective participation in bodywork, contact improvisation, developing phrases, and playing an active role in the final performance, students are physically and conceptually challenged and informed. Through better understanding space, control, aesthetics, alignment, and musicality as well as practicing learning strategies within a duet/group context, the student gains an appreciation not only for self and collective discovery, but also for the creative process underlining and shaping personal, artistic expression. All levels are welcome. No previous experience is required.

This class counts towards the Tisch School of the Arts Dance Minor.

ART-SHU 242

Chinese Folk & Minority Dance

This course is an introduction to diverse dances representing the vast regions and cultures of China. Students will learn basic elements and movement combinations from the provinces of Anhui, Liaoning, Xizang (Tibet) and Xinjiang. Through practice and application, students will be expected to mimic these dances, individually and collectively, learning more about these cultures through movement mastery. No prior dance experience is required.

This course satisfies: Core Curriculum: 2 credits of Chinese Arts.

ART-SHU 274

Foundations in Printmaking

Prints define our everyday aesthetic experience of the world – from book and poster design, to fashion and house-hold objects, to the walls of art galleries and museums. Our understanding of

contemporary printing is based on the latest digital technology however, the use of traditional techniques in printmaking is a unique and rewarding experience. The demanding mediums require specialized technical understanding of both hand skills and tools in order to become proficient. Students will be introduced to various printmaking techniques in conjunction with their histories. They will trace the global history of printing, starting with relief prints (woodblocks from China and Japan) through to more contemporary forms to contextualize as well as critique the forms, functions and representations therein. Although some contemporary artists did work with print studios to make prints, until very recently, many contemporary artists did not incorporate printmaking into their regular studio practice. Kiki Smith and Jasper Johns were among those who did early on. More recently there has been a turn towards printmaking being utilized as a component in cross-disciplinary and mixed-media forms as well as in traditional forms. Students will learn foundational techniques, modes, forms, and applications - monotypes (transfers and rubbings), relief prints (stamps and wood cuts), intaglio (dry point engraving), stencils, and mixed media techniques. Further, they will explore the implications and uses of materiality as a subject as well as a tool or medium. Students will also engage in selected readings to ground their visual pursuits in an historical and classical understanding as well as a theoretical, critical and contemporary context. Students will become proficient in the fundamental skills needed to write an artist statement, art critique and a work-in-progress conceptual outline.

Prerequisites: None.

One-time semester course fee of US\$75 to cover tools and materials.

ART-SHU 301

Introduction to Photography I

This course will be an introduction to the use of photography as a medium of documentation and art expression. The student will use photography to witness and create images to begin to understand their experience in Shanghai, and understand photography as an art medium. Basic digital photography techniques will be taught, including use of a digital camera and Photoshop. Lectures, technical demonstrations, and group critiques, as well as presentations by guest photographers will be included. Assignments on individual photographers and artists will be required.

This course is for beginning photography students with minor or no experience with photography.

Students will provide their own cameras.

This course is open to all students with or without an art background.

Note that attendance in the first class meeting is mandatory, otherwise you will be dropped from the course.

This course satisfies: Core Curriculum: Culture Foundations: Chinese Art.

ART-SHU 1050

Acting: Fundamentals

This course offers a foundation upon which to build the technique needed to do the actors job: to live truthfully under the imaginary circumstances of the play. In this Stanislavski/Uta Hagen based approach, students participate in a guided study of self-observation and apply discoveries to scene work.

Prerequisite: None.

ART-SHU 1910

Projects in Studio Art - Chinese Traditional Methods in Contemporary Art

This course is designed for studio artists who want to create a succinct body of artwork while studying in Shanghai. Students will create contemporary artworks using traditional Chinese art forms to traverse both cultural and temporal barriers of expression, creating a unique integrated style of work. Students of traditional Western methods of art making, including drawing, painting, sculpture, and printmaking, are going to be asked to work out of traditional Chinese art methods, including calligraphy and ink painting. Also, students will have the opportunity to combine Western and Chinese methods of art making.

Students will examine the content of artwork, including ideas in contemporary and traditional art, both Chinese and international, and build various skills to translate ideas into reality.

The course includes a study of ancient Chinese paintings, drawings of still-lifes and live models, as well as visits to local artists, galleries, and museums. Class time will be devoted to individual projects and critiques, lectures, and group discussions.

As a final project, students will integrate their living experiences in Shanghai with personal experience and/or the societal landscape, to create a substantial body of artwork for a group exhibition.

This course is open to students who have an art background and upon the approval of the professors.

Note that attendance in the first class meeting is mandatory, otherwise you will be dropped from the course.

This course satisfies: Core Curriculum: Culture Foundations: Chinese Art.

ART-SHU/CCCF-SHU 9077/128

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.

Prerequisite: None.

This course satisfies Chinese Arts Core Curriculum. It fulfills Humanities 13-14: History Course: Asia Pacific World course, Humanities 14-15/15-16: Survey Course and Global China Studies: Global China Studies Elective.

ART-SHU 9210

Introduction to Studio Art

This course will be an introduction to studio art for students who want to learn traditional Chinese art forms with contemporary expression, to traverse both cultural and temporal barriers of visual arts. These include calligraphy and ink painting as seen from a modern perspective. Students will examine the content of artwork, including ideas in contemporary and traditional art, both Chinese and international, and build various skills to translate ideas into reality. The course includes a study of ancient Chinese paintings, drawings of still-lifes, as well as visits to local artists, galleries, and museums. Class time will be devoted to individual projects and critiques, lectures, and group discussions.

This course is open to all students with or without an art background.

Note that attendance in the first class meeting is mandatory, otherwise you will be dropped from the course.

This course satisfies Chinese Arts Core Curriculum.

ART-SHU 9301

Introduction to Photography I

This course will be an introduction to the use of photography as a medium of documentation and art expression. The student will use photography to witness and create images to begin to understand their experience in Shanghai, and understand photography as an art medium.

Prerequisite: None

This Course satisfies Chinese Arts Core Curriculum.

MUS-SHU 56

Piano (Private Lessons)

Private instruction for all skill levels in the literature & techniques of playing piano. Designed to foster appreciation of music & an interest in piano repertoire, musical interpretation, & music notation.

Prerequisite: None.

MUS-SHU 56.2

Piano (Private Lessons)

Private instruction for all skill levels in the literature & techniques of playing piano. Designed to foster appreciation of music & an interest in piano repertoire, musical interpretation, & music notation.

Prerequisite: None.

MUS-SHU 59

Group Piano for Beginners

Classes are scheduled based on student availability and require all students to complete the survey that can be found at this link:

https://docs.google.com/a/nyu.edu/spreadsheets/d/1kEDEpf1-qWxJl4dVaCOVuA7vts89tFAegiF_D5LN58I/edit?usp=sharing

Prerequisite: None.

MUS-SHU 60

Group Piano for Inter Beginner

Prerequisite: Beginning Piano; prior training

MUS-SHU 61

Group Piano for Advanced

MUS-SHU 200
Topics in Music

Centered around attending a variety of musical performances in Shanghai, in class work will consist of lectures, readings, listening and discussions in advance of the event as well as further discussion and reflection afterwards. Students will work on refining critical listening skills and a greater knowledge of music and music as an integral part of society and in particular, Shanghai's past and present artistic community. Genres to be chosen from: jazz, classical, indigenous, fusion, theatre music and contemporary pop/rock.

Prerequisite: None.

This course satisfies 2 credits of the Chinese Arts Core Curriculum.

MUS-SHU 1085.1
Choral Arts: NYU Shanghai Chorale

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.

MUS-SHU 1181
Chamber Ensemble

Open to students with an intermediate to advanced ability in instrumental music who would like to play as an ensemble. Chamber music will be arranged for the instruments and ability of the class population. Students must be able to read music and provide their own instrument. This class will be taught by Prof. Yue Chen who is the principal oboist with the Shanghai Philharmonic and the Shanghai Chamber Orchestra.

Prior training / Permission of instructor required.

Prerequisite: None.

MUS-SHU 1511
Vocal Training: Group - 2 credits

This course introduces singing - in theory and in practice - by means of lectures, listening, individual and group instruction. Topics to be covered are: the history of the voice as a musical instrument; the act of singing as artistic expression and communication of the human condition; and the scientific principles related to healthy vocal technique. Students will receive one-on-one and group instruction as well as participate in discussions and class performances.

Prerequisite: None.

MUS-SHU 1512
Private Voice Instruction

Students will receive individual singing instruction in a studio setting. Vocal function and its application will be discussed and repertoire assigned accordingly. Students are encouraged to explore singing as a communicative tool in delivering text and story telling.

Prerequisite: None.

MUS-SHU 1514
Private Voice Instruction

Students will receive individual singing instruction in a studio setting. Vocal function and its application will be discussed and repertoire assigned accordingly. Students are encouraged to explore singing as a communicative tool in delivering text and story telling.

Prerequisite: None.

Biology

BIOL-SHU 21

Foundations of Biology I

Prerequisite: None

This course satisfies the following: Core Curriculum ED; FoS for Science & Math & Honor Math Majors

BIOL-SHU 22

Foundations of Biology II

Prerequisite: MATH-SHU 121 Calculus AND BIOL-SHU 21 Foundations of Biology I.

This course satisfies: Biology Major; Requirement: Foundations of Science II (5+6)

BIOL-SHU 30 (formerly 264)

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).

This course satisfies the following: Biology Elective; Core Curriculum ED.

BIOL-SHU 31

Genetics Laboratory

Prerequisite or corequisite: BIOL-SHU 30 Genetics.

This course satisfies the following: Biology Elective; Core Curriculum ED.

BIOL-SHU 37 (formerly 210)

Applied Cell Biology

Understanding the fundamental methods for growing and studying cells—the smallest units of life—is basic to biology. This course introduces students to the methods used to study cell structure and function. In the laboratory, students study the fundamentals of cell biology and the experimental approaches used to examine the cell. Topics cover cellular, subcellular, and macromolecule localization; biochemical analysis of the cell; and cell culture techniques. Accurate record-keeping, reports, and presentations are emphasized.

Prerequisite: Foundation of Biology I or II.

This course satisfies: Biology Major Electives.

BIOL-SHU 42 (formerly 251)

Biostatistics

The ability to organize and analyze biological and behavioral science data is an essential research tool. This course provides an introduction to the use of statistical methods for analyzing this data. It introduces methods for describing and displaying data, the role and use of probability in describing and understanding living systems, hypotheses testing, and how to design experiments. Biological and behavioral science data and R—a free, open-source statistical software package—are used to gain proficiency with these tools.

Prerequisites: BIOL-SHU 21 (Foundations of Biology I) and BIOL-SHU 22 (Foundations of Biology II).

This is a required Biology Course.

BIOL-SHU 123

Foundations of Science: Biology Laboratory

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.

Prerequisite: BIO-SHU 21 OR 22 (Foundation of Biology I or II)

This course satisfies Experimental Discovery Core Curriculum.

It fulfills Biology Major:Requirement: Foundations of Science II (5+6).

BIOL-SHU 200

Topics: Molecular Biology of Cancer

Prerequisites: BIOL-SHU 22 (Foundations of Biology II)

This course satisfies the following: Bio elective, NS elective, NS 16-17:General Elective

BIOL-SHU 250

Organismal Biology

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 (Foundations of Biology I).

This course satisfies Required Biology 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 systems perspective.

Prerequisite: Basic programming experience is required, preferably with R. FOS biology is preferred, but not required.

This course satisfies Science, Technology and Society Core Curriculum. It fulfills Biology Elective and Neural Sciecene Elective.

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 effect shape, movement, and signaling among cells.

Prerequisite: BIOL-250 (Organismal Systems), or Foundations of Science III Biology, or BIOL-SHU 22 (Foundations of Biology II).

BIOL-SHU 267

Microbiology

Microbiology. Bacterial viruses. Assembly of macromolecular structures. Regulation of gene expression. Transduction. Phage that carry disease causing genes. Phage display. Animal viruses: HIV, influenza, polio. Bacteria. DNA replication. Cell walls. Division into Gram positive and negative. Control of gene expression. Turning on large sets of genes. Conjugation and transformation. Antibiotics and antibiotic resistance. Transposons. Immunology. Mechanisms of bacterial virulence. Major chemical cycles mediated by bacteria. Archaea and extreme environments. Protists and protozoa. The eukaryotic cell and single- celled organisms with sophisticated functions. Algae and algal products.

Prerequisites: none; Recommended: BIOL-SHU 21 (Foundations of Biology I) and BIOL-SHU 22 (Foundations of Biology II), and BIOL-SHU 264 (Genetics).

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. Must be approved by Area Leader and Academic Affairs.

Bio Undergrad Research Thesis

Prerequisites: BIOL-SHU 997 or 998 (Independent Study), 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.

BPEP-SHU 9042
Political Economy of East Asia

This course focuses on China's political and economic development over the last century and a half with particular attention to the last 33 years, the so-called Reform Period. Our three primary objectives are to (1) understand the historical trajectory of China's development path; (2) consider in what ways and to what degree the growth experiences of East Asia's high-performing economies helped inform China's economic policymakers decisions and shed light on the prospects for the long-term success of reforms in China; (3) assess the state of China's contemporary political economy.

Prerequisite: Upperclass standing, with priority to Stern BPE Students.

This course satisfies the following: Econ Elective; SS: Focus; GCS elective; or Business - non-finance/marketing elective or China Business Studies.

BUSF-SHU 3
Business Honors Seminar

BUSF-SHU 101
Statistics for Business and Economics

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.

This course satisfies the following: major pre-req: Business and Finance, Business and Marketing, Economics, Data Science; Social Science: methods course.

BUSF-SHU 142
Information Technology in Business & Society

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: None.

This course satisfies Business and Finance/ Marketing Major: Business Elective.

BUSF-SHU 200
Topics in Business: Social Media and Business

The Internet and mobile technologies have dramatically changed the way that companies conduct business. This course is to explore issues related to the newly emerging Web 2.0 landscape and online platforms. The course covers essential skills to analyze, evaluate, and develop the Web 2.0 and platform-based business models as well as marketing strategies. Different platforms and Web 2.0 applications (e.g., search engines, social network, user-generated content, sharing platforms, and Groupon) and their multi-disciplinary implications will be discussed.

Not open to freshmen.

Prerequisite: None.

This course satisfies: Business and Finance Major:Non-Finance Elective;Business and Marketing Major:Non-Marketing elective.

BUSF-SHU 200A
Topics in Business: IT Enable Business Model and New Economy

The Internet and mobile technologies have dramatically changed the way that companies conduct business. This course is to explore issues related to the newly emerging Web 2.0 landscape and online platforms. The course covers essential skills to analyze, evaluate, and develop the Web 2.0 and platform-based business models as well as marketing strategies. Different platforms and Web 2.0 applications (e.g., search engines, social network, user-generated content, sharing platforms, and Groupon) and their multi-disciplinary implications will be discussed.

Not open to freshmen.

Prerequisite: None.

This course satisfies: Business and Finance Major:Non-Finance Elective;Business and Marketing Major:Non-Marketing elective.

This course enables students to apply tools and skills learned in previous business courses, as well as develop many new skills, through undertaking projects focused on real business cases provided by real companies. The cases are supplied by companies expressly for this course and concern real opportunities and challenges facing the companies. Students will participate on teams of 4 or 5 people. Each Team will meet regularly with the professor who will act as a mentor. Each Team will also be assigned an outside Executive Mentor – a senior businessperson (not from the organization contributing the project) who will meet at least twice with the Team to comment on their work from the perspective of a real executive.

There will be three milestones -- Proposal; Interim Report; Final Report. Each of these milestones will require written as well as oral reports. There will also be correspondence and meetings with the client along the way.

The course offers students exposure to the real issues faced by companies in developing strategies to solve contemporary problems and/or capture emerging opportunities in dynamic and competitive business environments.

Specific learning objectives include, as a minimum:

- Cultivate critical thinking, analytic capabilities and problem solving skills
- Cultivate a strategic mindset
- Cultivate soft skills such as listening, communications, teamwork, collaboration, and time management
- Be exposed to the challenges and thinking of real decision makers
- Deal with the challenges of acquiring data/information and insights in the real world, in China

Prerequisite: None.

(Depending on the topic: this course may satisfy China Business Studies; otherwise non-Finance/non-Marketing elective)

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 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: BUSF-101 (Statistics for Business and Economics) and ECON-150 (Microeconomics) or ECON-3 (Microeconomics).

This course satisfies the following major core: Business and Finance, Business and Marketing. It can count for the Stern Minor.

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 and the outward expansion of Chinese firms. The course will be require 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: BUSF-SHU 202 (Foundations of Finance) or BUSF-SHU 303 (Corporate Finance) AND ECON-SHU 251 (Economics of Global Business) or ECON-SHU 1 (Macroeconomics). This course satisfies 2 credits of Business and Finance Elective.

BUSF-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: A prior Statistics Course.

This course satisfies Business elective for Business and Finance/ Marketing major.

BUSF-SHU 211

Design Thinking

Design Thinking is a novel approach to problem-solving that can be applied to any discipline. It is used to rapidly develop concepts, products, services, strategies, and systems that are both innovative and responsive to user needs and desires.

This course will examine the origins and spread of Design Thinking, analyze the strengths and weakness of the methodology, and show how it is used to solve problems and create solutions that improve quality of life.

This course blends theory with practice and culminates in a team design challenge to apply the course objectives.

Prerequisite: None.

This course satisfies the following: Business and Finance Major:Non-Finance Elective;Business and Marketing Major:Non-Marketing elective.

BUSF-SHU 220

Topics in Business: Chinese and International Accounting (2 credits)

NYU Shanghai Business majors have a priority to this class.

Prerequisite: BUSF-SHU 250 (Principles of Financial Accounting).

This class satisfies 2 credits of a Business Non-Finance/Non-Marketing Major.

BUSF-SHU 220B

Topics in Business: Global Investment

Prerequisite: BUSF-SHU 202 (Foundations of Finance).

This course satisfies the following: Business and Finance Major:.5 Non-Finance Elective;Business and Marketing Major: .5 Non-Marketing elective.

BUSF-SHU 220C

Topics in Business: Emerging Markets Finance

Prerequisite: None.

This course satisfies the following: Business and Finance Major:.5 Non-Finance Elective;Business and Marketing Major: .5 Non-Marketing elective.

BUSF-SHU 220D

Topics in Business: FinTech

Robert Merton suggests "...the primary function of any financial system is to facilitate the allocation and deployment of economic resources, both spatially and temporally, in an uncertain environment (Merton: 1992). A financial system is therefore defined by its required functions, and not by its institutions. As Merton further argued: "...competition will cause the changes in institutional structure to evolve toward greater efficiency in the performance of the financial system."

Technological innovation propagates financial invention and shapes financial institutions. The pace of change accelerated after the 2008 financial crisis eliminated or undermined many established financial institutions. "Fintech" is the label given to increasingly technological approaches to the main financial intermediation functions: payments for goods and services, equity and fixed income capital raising, transferring capital across time and boundaries, managing uncertainty and risk, market price discovery, and mediating information asymmetry and incentives. In today's Fintech businesses, consumers do their banking via a mobile app, and institutions trade electronically, without the involvement of a retail or investment bank.

In a world where regulation continues to challenge incumbent financial intermediaries and where mobile-savvy consumers are more and more demanding, FinTech is relevant to financial stability, economic productivity, corporate competitiveness, and capital raising and investing. This course provides a comprehensive overview of the emerging field of "FinTech." During the course we will address the following questions:

- How is financial innovation different than industrial innovation? How is financial innovation evolving?
- What are the light sides and dark sides of financial innovation?
- Will traditional financial intermediaries be able to adapt? Or will upstart FinTechs disrupt them, re-imagining business models just as Amazon reshaped book-selling and Uber transformed taxi-rides?
- How is innovation finance changing with the fragmentation of funding sources (crowd-funding etc.) and how does this affect standard investment approaches and valuation models?
- How is Fintech reconfiguring business models and target markets?

What is corporate technology strategy today, what are the basic building blocks of FinTech, and how are they assembled into new businesses? What determines success in FinTech? How should FinTech entrepreneurs present their case? The course addresses these questions, beginning with a review of the origins of innovation in general and financial innovation in particular, followed by a summary of the VC process and valuation. The course then proceeds to a detailed review of the major Fintech segments and building blocks. In sessions 4 and 5 we will review the business cases, and the opportunities and challenges of representative Fintech startups in each of the main areas of financial intermediation. The course concludes with a case study and a Fintech pitch that allows students to apply what they have learned. Real-world financial innovation is a recurring theme.

The course incorporates special features of the Chinese Fintech context.

Prerequisite: None.

This course satisfies the following: Business and Finance Major: .5 Non-Finance Elective; Business and Marketing Major: .5 Non-Marketing elective.

BUSF-SHU 220E

Topics in Business: Fixed Income Derivatives

This course describes important fixed income securities and markets and develops tools for valuing debt instruments and managing interest rate risk. The course covers interest rate risk concepts and the analytical and institutional aspects of fixed income derivatives, such as interest rate swaps, and options, as well as bonds with embedded options. Topics also include financial engineering, and international fixed income. The study of fixed income is quantitative and technical by nature. This course together with the course BUSF-SHU 220F (Debt instruments) is equivalent to the course 'Debt instruments and Markets'.

Prerequisite: BUSF-SHU (Foundation of Finance).

This course satisfies the following: Business and Finance Major: .5 Non-Finance Elective; Business and Marketing Major: .5 Non-Marketing elective.

BUSF-SHU 220F

Topics in Business: Debt Instruments

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 and term structure topics. It also covers the analytical and institutional aspects of basic fixed income derivatives, such as forwards, futures, and Repos. Topics also include credit risk, bond portfolio management and hedging. The study of fixed income is quantitative and technical by nature. This course together with the course BUSF-SHU 220E (Fixed Income Derivatives) is equivalent to the course 'Debt instruments and Markets'.

Business major students have a priority and it opens to all students except for freshmen beginning Nov. 21.

Prerequisite: None.

This course satisfies the following: Business and Finance Major: .5 Non-Finance Elective; Business and Marketing Major: .5 Non-Marketing elective.

BUSF-SHU 220G

Topics in Business: 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 help you understand the structure of negotiation as it is practiced in a variety of settings, and to help you 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).

Prerequisite: None.

This course satisfies the following: Business and Finance Major: 5 Non-Finance Elective; Business and Marketing Major: .5 Non-Marketing elective.

BUSF-SHU 220H

Topics in Business: Managerial Tools and Skills

Prerequisite: None.

This course satisfies the following: Business and Finance Major: 5 Non-Finance Elective; Business and Marketing Major: .5 Non-Marketing elective.

BUSF-SHU 232

Entrepreneurship Explored

An entrepreneur is someone who is always on the lookout for problems that can be turned into opportunities and finds creative ways to leverage limited resources to reach their goals. In this course, students will explore fundamental concepts, theories, and frameworks of entrepreneurship.

Through cases, articles, guest entrepreneurs and team challenges, students will gain expertise in how to identify and evaluate opportunities; interpret, analyze, and build financial models; live life as an entrepreneurial leader; and create a new product or service.

This course is not just for students who want to be entrepreneurs. Anyone who wants to create and sustain positive change should enroll.

Prerequisite: None.

BUSF-SHU 240

Solving the Healthcare Equation

As all countries around the world struggle with the right balance of effective healthcare, we will briefly examine the key elements that are driving the importance of healthcare today. Dramatic technology improvements, spiraling increases in costs, improved patient access, increased government regulations and focused social expectations are all driving a calculation which is harder and harder to solve. This course will step us through the issues and questions and setup how the equation could be solved. This course is project-based (no midterm or final exam) and is open to students of all majors and all years.

Prerequisite: None.

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: None.

This course satisfies major core for Business and Finance, Business and Marketing. It can count for the CAS Business Studies Minor.

BUSF-SHU 288

Doing Business in 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: None.

This course satisfies the following: Business Major: Chinese Business Studies Courses; Business and Marketing Major: China Business Studies Course.

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 (Foundation of Finance).

This course satisfies a major core for Business and Finance, and major core elective for Business and Marketing.

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-202 (Foundation of Finance).

This course satisfies the following: Business Finance Elective; Business and Marketing Major: Non-Marketing 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-202 (Foundation of Finance).

This course satisfies the following: Business Finance Elective; Business and Marketing Major: Non-Marketing Elective

BUSF-307

Private Equity & Venture Capital in Asia and Emerging Markets

This course is designed to prepare students to have a good general understanding of private equity and venture capital especially with an Asian focus. This will provide an overview of investments, financing, strategies and other elements in private equity and venture capital 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.

This course is an upper level finance elective.

Prerequisites: BUSF-SHU 202 (Foundations of Finance), BUSF-SHU 303 (Corporate Finance) and BUSF-SHU 250 (Economics of Global Business) (or ECON-SHU 1 Macroeconomics).

This course satisfies 2 credits of Finance Elective.

BUSF-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 202 (Foundations of Finance) AND BUSF-SHU 303 (Corporate Finance). This course satisfies Business & Finance Elective.

BUSF-SHU 326

Big Data and Accounting Analytics

An introduction to data science for business majors. Explore public data sources (e.g., SEC EDGAR), and important data formats. Overview of tools for data management, text parsing, and visualization (e.g., Javascript, Regular Expression). Basic ratio analysis, forecasting, and security valuation with accounting data.

Prerequisites: Principles of Fin Accounting (BUSF-SHU 250), and Introduction to Computer Science (CSCI-SHU 101). Or with Instructor Permission.

This course satisfies the following: Business and Finance Major:Non-Finance Elective;Business and Marketing Major:Non-Marketing elective.

BUSF-SHU 340
Advanced Financial Accounting

Prerequisite: None.

This course satisfies the following: Business and Finance Major:Non-Finance Elective;Business and Marketing Major:Non-Marketing elective.

BUSF-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: BUSF-SHU 250 (Principles of Fin Accounting).

This course satisfies the following: Business and Finance Major:Non-Finance Elective;Business and Marketing Major:Non-Marketing elective.

BUSF-SHU 351
Competitive Advantage from Operations

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.

This course satisfies Business Elective for Business and Finance / Marketing Major.

BUSF-SHU 353
International Financial Management

This course examines the operation of international currency exchange and capital markets and applies financial management principles to the financial decisions of multinational corporations. It addresses such topics as economic determinants of exchange rates, currency market efficiency, exchange rate forecasting, techniques for measuring and managing exposure to exchange and political risk and financing alternatives and capital budgeting decisions of multinational corporations. Readings and case studies are employed.

Prerequisites: BUSF-303 (Corporate Finance) and ECON-250 (Economics of Global Business).

This course satisfies Business Finance Elective.

MGMT-SHU 18
Strategic Analysis

This course emphasizes the need to look outward to the environment and inward to a firm's resources and capabilities and operating policies. It describes a firm's strategy as the formulation of "competitive strategy", "corporate strategy," and "organizational strategy." Competitive strategy involves identifying structurally attractive industries and developing the most attractive position within that industry - where attractiveness is driven by absolute conditions combined with the resources and capabilities the firm brings to that position. Businesses create value by operating in positions within industries that, by virtue of the characteristics of industry, the position, and the firm, are defensible from the encroachment of competitors and deterioration of the environment as a whole. Corporate strategy focuses on the management and understanding of multi-product, multi-location, and multi-business firms. Organizational strategy involves developing policies within each functional area of the business unit that are integrative and consistent with the firm's plan for creating value.

Prerequisite: None.

This course satisfies the following: Business and Finance Major:Non-Finance Elective;Business and Marketing Major: .5 Non-Marketing elective.

MGMT-SHU 21
Managerial Skills

Many companies bestow a management title on key talent and expect appropriate behavior to follow. That is not the most effective way to develop future business leaders. Your expertise will take you just so far. Increasing self-awareness and being open to feedback are important first steps in leading today's business for tomorrow's results. DEVELOPING MANAGEMENT SKILLS is a course that focuses primarily on the practical aspects of managing. This course is highly interactive and, while based on solid research, it stresses a hands-on approach to improving your management skills. The focus is on developing:

Your Personal Skills: self-awareness; managing stress; solving problems & creativity
What behaviors help or get in your way as you strive for personal/professional success?
How do your values influence your decisions and problem-solving approaches?
How do your learning styles help or hinder how you handle ethical dilemmas?, etc.)
Your Interpersonal Skills: coaching; counseling; supportive communication; gaining power & influence; motivating self & others; managing conflict
Your Group Skills: empowering & delegating; building teams, leading change, running meetings.
Each session will give you an opportunity to "assess", "analyze", "practice", "learn", "teach", and "apply" the above skills to your own work or life situation so that you can turn good ideas into effective practice. You will not only learn about management skills but you will begin to apply those skills in class, at work, at home, etc., to help you become a more effective business leader. This is not the course for you, if you prefer classes where you can sit passively by and be an "academic tourist".

In the self-assessment step you assess your own skills in the topic under discussion. Usually, these will be at the beginning of each chapter. Class lectures and discussions will involve such topics as: self-awareness, creative problem-solving, communication, stress management, gaining power, motivating others, managing conflict, empowering others, giving and receiving feedback, delegating, and team building, etc...not necessarily in that order. You will analyze, write about, practice and apply these topics through case studies, group exercises, and being responsible to teach some topics to the class.

NOTE: We will NOT be reading each chapter in class. The text is YOUR resource to use as we go along as a starting point. Use it. We will seldom refer to it during class. It can serve as the basis for class discussion and reflection. However, it is not to be considered the only resource available to you. This is your opportunity to explore these topics through outside sources, including but not limited to professional and popular journals/books/organizations, Human Resources professionals, web sites, etc. Your chance to network beyond your comfort zone!

You will be required to keep a journal/log from day one. A self-awareness journal allows you to keep track of the issues that help or get in the way of your career/management goals and the action-steps you take to achieve them. This will be especially important for your final project. You will be required to hand in a one-page summary of highlights about of the way through the course.

A secondary goal is to provide you an opportunity to develop your skills in critical thinking, oral and written communication, and your ability to influence others through rational and creative approaches. Therefore, at the end of this course you will be able to:

Demonstrate your understanding and competence with respect to fundamental managerial skills: Self-awareness, stress management, creative problem solving, supportive communication, gaining power and influence, motivating others, managing conflict, building effective teams, etc. Analyze, develop, practice, and demonstrate your ability to use these fundamental personal, interpersonal and team building skills through self-assessments, textbook learning, cases, experiential exercises, written application exercises and a final paper.

Prerequisite OR Corequisite: MGMT-SHU 301 (Management & Organizations)

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: None.

This course satisfies Business and Finance/ Marketing Major: Business Elective.

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: None.

This course satisfies the following: Business and Finance core elective. Business and Marketing required core course. It can count for the CAS Business Studies Minor and the Stern Business Studies Minor. Business majors have priority for this course and study away students have priority for a limited number of seats.

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).

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.

Pre-requisite: None.

This course satisfies Marketing elective.

MKTG-SHU 9
Research for Customer Insights

This course provides students with both research and managerial perspectives in the development and application of marketing research tools and procedures. It describes the development of research designs from problem formulation to analysis and submission of the research report. It also covers the analysis of techniques in marketing research, such as focus groups, experimental design, surveys, sampling, statistical analysis, and reporting. Cases are utilized in the development of methods and in specific areas of application.

Pre-requisite: MKTG-SHU 1 (Intro to Marketing).

This course satisfies Marketing elective.

MKTG-SHU 53
Pricing

Pre-requisite: None.

This course satisfies Marketing elective.

MKTG-SHU 57
Digital Marketing

Provides an introduction to fundamental concepts in digital marketing. Students will learn through business case studies reflecting recent frameworks in the field, and in-class exercises on metrics and methods for evaluating the success of digital marketing. Students will also explore the psychology of virality and social influence in digital contexts.

Pre-requisite: MKTG-SHU 1 (Intro to Marketing).

This course satisfies Marketing elective.

SOIM-SHU 6
Law, Business & Society

This course challenges undergraduate students to think deeply about legal systems and the continual evolution of business practice and business law. This process is multidimensional and involves social, political, ethical, and technological factors. In the course, students examine how key areas of business law influence the structure of societal and business relationships, while honing their analytical, communication, and writing skills.

While focusing on the American legal tradition, the course taught in Shanghai will involve select points of comparison with legal and business practice in China.

Stephen Harder is the managing partner of the China practice of the international law firm Clifford Chance. He is based in Shanghai where his practice focuses on cross border project transactions of Chinese institutions. When based previously in Europe and New York, he acted as counsel for the Russian and Polish privatization programs and the Polish sovereign debt restructuring. He has written on "China's Sovereign Wealth Fund: The Need for Caution" in the International Financial Law Review, and spoken recently at Harvard and Columbia on "China Ventures Forth - Advising China on Foreign Investments" and "China in the Balance: Needed Reforms, Vested Interests and the Choices Facing China's New Leaders". He has also written on "Political Finance in the Liberal Republic" in the Annals of the American Academy of Political and Social Sciences.

He received his undergraduate degree in Chinese Studies from Princeton and his MBA and JD degrees from Columbia.

*Open to all Seniors, Juniors, with preference to Stern program students. Interested sophomores need to request permission from the instructor.
Prerequisite: None.*

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.

Pre-requisites: None, but priority to business majors; not open to freshmen.

SOIM-SHU 165

Advanced Organizational Communication

Advanced Organizational Communication builds upon the oral and written communication skills developed in its prerequisite course, Organizational Communication & its Social Context. This advanced course provides opportunities for students to continue developing their communication skills in a variety of contexts while working and presenting to multiple audiences.

In this course, students will have the opportunity to persuade real life stakeholders to take action; such activities include making a stock pitch to a financial expert, speaking to a large audience of peers / professors at an NYU Stern Student-run Speaker Series, and developing a social impact plan for an actual corporate client. Presentations will vary in size and delivery method (virtual, in-person, board-room style, auditorium style, etc.). In some cases, you will work to adapt the same presentation into multiple formats.

Additionally, we will incorporate role-plays, impromptus, team communication (running meetings, supportive communication, consensus building), and group discussions throughout the course. Two writing assignments will reflect content from the oral presentations in typical business document format.

The course will be highly participative, real world, and interactive. The professor will do everything he can to engage real-life audience members and facilitate practical, experiential learning. Participation, taking risks, and working beyond one's comfort zone are essentials for success in this class.

Prerequisite: SOIM-SHU 65 (Organizational Communication & its Social Context) OR Instructor Permission (contact Professor Brian Hanssen at bhanssen@stern.nyu.edu).

SOIM-SHU 9006

Law, Business, & Society

This course challenges undergraduate students to think deeply about legal systems and the continual evolution of business practice and business law. This process is multidimensional and involves social, political, ethical, and technological factors. In the course, students examine how key areas of business law influence the structure of societal and business relationships, while honing their analytical, communication, and writing skills.

While focusing on the American legal tradition, the course taught in Shanghai Spring 2016 will involve select points of comparison with legal and business practice in China.

Stephen Harder is the managing partner of the China practice of the international law firm Clifford Chance. He is based in Shanghai where his practice focuses on cross border project transactions of Chinese institutions. When based previously in Europe and New York, he acted as counsel for the Russian and Polish privatization programs and the Polish sovereign debt restructuring. He has written on "China's Sovereign Wealth Fund: The Need for Caution" in the International Financial Law Review, and spoken recently at Harvard and Columbia on "China Ventures Forth - Advising China on Foreign Investments" and "China in the Balance: Needed Reforms, Vested Interests and the Choices Facing China's New Leaders". He has also written on "Political Finance in the Liberal Republic" in the Annals of the American Academy of Political and Social Sciences. He received his undergraduate degree in Chinese Studies from Princeton and his MBA and JD degrees from Columbia.

*Open to all Seniors, Juniors, with preference to Stern program students. Interested sophomores need to request permission from the instructor.
Prerequisite: None.*

Chemistry

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.

Prerequisite: None.

This course fulfills Chemistry, Biology, Neural Science, Physics Major: Foundations of Science I, and satisfies core curriculum ED.

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.

Prerequisites: CHEM-SHU 125 (Foundations of Chemistry I) AND MATH-SHU 121 (Calculus).

This course satisfies FoS and core curriculum ED.

CHEM-SHU 127

Foundations of Science: Chemistry Laboratory

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.

Prerequisite or corequisite: CHEM-SHU 126 (Foundations of Chemistry II).

This course satisfies FoS and core curriculum ED.

CHEM-SHU 225 (formerly 201)

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 course also incorporates an introduction to modern analytical methods that are the cornerstone of contemporary organic chemistry. 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. This course satisfies Chemistry Major: Required Courses.

Prerequisite: CHEM-SHU 126 (Foundations of Chemistry II). Corequisite: CHEM-SHU 225L (Organic Chemistry I Lab)

This course satisfies: Required Chemistry course, core curriculum ED.

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. This course expands the students' knowledge base and critical thinking skills and prepares them for further study, including the upper level courses, organic requirements for medical schools, and independent research.

Prerequisite: None. Corequisite: CHEM-SHU 225 (Organic Chemistry I).

This course satisfies Required Chemistry course.

CHEM-SHU 226 (formerly 250)

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 will learn common reaction mechanisms and how they apply to compounds and reactions not encountered by recognizing functional groups. This will allow student to be able to predict the major products of reactions involving organic compounds containing one or more one functional groups and to design simple organic syntheses. Finally, by the end of the course, student should be able to read and comprehend articles from the current literature.

Prerequisite: CHEM-SHU 225 (Organic Chemistry I). Corequisite: CHEM-SHU 226L (Organic Chemistry II Lab).

This course satisfies Required Chemistry course.

CHEM-SHU 226L

Organic Chemistry II Lab

This Organic Chemistry II Laboratory course is a continuation of Organic Chemistry I Lab. Students will gain further training in carrying out organic chemical reactions and product extraction, purification and analysis. Students who complete the course will be 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 will learn to characterize and elucidate molecular identity and structure using chemical, physical, and spectroscopic techniques including polarimetry, infrared (IR), and nuclear magnetic resonance (NMR) spectroscopy.

Prerequisite: None. Corequisite: CHEM-SHU 226 (Organic Chemistry II).

This course satisfies Required Chemistry course.

CHEM-SHU 652

Physical Chemistry: Thermodynamics and Kinetics

This course develops the connection between thermodynamic quantities (energy, enthalpy, entropy, free energy, etc) with molecular properties and reaction kinetics. Topics include properties of gases, classical thermodynamics, and kinetics.

Prerequisites: CHEM-SHU 126 (Foundations of Chemistry II), (PHYS-SHU 93 (Foundations of Physics II Honors) OR PHYS-SHU 12 (General Physics II)), AND MATH-SHU 121 (Calculus). Students are highly recommended to complete MATH-SHU 123 (Multivariable Calculus) in preparation for this course. MATH-SHU 265 (Linear Algebra and Differential Equations) may also be useful.

This course satisfies Chemistry Elective.

CHEM- SHU 752

Computational Chemistry

Computational Chemistry, the study of chemical systems with computer modelling and simulation, provides a sophisticated set of tools that every practicing chemist should know about. This course will introduce both the theoretical and practical aspects of modern computational chemistry, with an emphasis on quantum chemical methods. Lectures are combined with hands-on computational exercises using state-of-the-art high-performance-computing-based tools. Topics include Molecular Mechanics, Molecular Dynamics, Ab Initio Molecular Orbital Theories (Hartree-Fock and Density Functional Theory), Calculation of Molecular and Spectroscopic Properties, and Electronic Excitations. With these tools, students will engage in an independent research project of their design.

Prerequisites: (CHEM-SHU 651 (Physical Chemistry: Quantum Mechanics and Spectroscopy) OR PHYS-SHU 301 (Quantum Mechanics)), AND (CHEM-SHU 652 (Physical Chemistry: Thermodynamics and Kinetics) OR PHYS-SHU 302 (Statistical Mechanics and Thermodynamics)). Strongly recommended: MATH-SHU 123 Multivariable Calculus. Useful: MATH-SHU 265 (Linear Algebra and Differential Equations).

This course satisfies Chemistry Elective.

CHEM-SHU 882

Biochemistry II

Building on the lessons of Biochemistry I, Biochemistry II emphasizes analysis of basic metabolic pathways, including glycolysis, electron transport, and oxidative phosphorylation, as well as mechanisms of metabolic regulation and integration. This course can satisfy Chemistry Major: Chemistry Elective.

Prerequisite: CHEM 881 (Biochemistry I)

This course satisfies Chemistry Elective.

CHEM-SHU 997
Independent Study – Chemistry

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.

Prerequisite: Foundations of Science 1-3 (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. Must be approved by Area Leader and Academic Affairs. This course may satisfy Chemistry Elective (4 credits only).

Chinese Language

CHIN-SHU 101 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.

CHIN-SHU 101S Elementary Chinese I - FoS1

This course is a 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.

CHIN-SHU 101S2 Elementary Chinese I - FoS 2

This course is the second half of a 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 latter 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: Successful completion of first half.

CHIN-SHU 102 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-101 (Elementary Chinese I).

CHIN-SHU 102S 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-101 (Elementary Chinese I) or 101S2 (Elementary Chinese I - FoS 2).CHIN-SHU 102S2

CHIN-SHU 111 Elementary Chinese I for Advanced Beginners

This course is the first part of a one-year elementary-level Chinese course designed for students who can understand and speak conversational Chinese related to daily-life situations, but have not learned to read/write Chinese characters. 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: Based on Placement Test.

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 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-102 (Elementary Chinese II).

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-102 (Elementary Chinese II) or 102A (Elem. Chinese II - Accelerated);

Corequisite: CHIN-SHU 202A (Intermediate Chinese II - Accel).

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 (7) to continue being acquainted with aspects of Chinese culture and society related to the course materials.

Prerequisite: CHIN-201 (Intermediate Chinese I).

This course satisfies Language core curriculum.

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 (7) to continue being acquainted with aspects of Chinese culture and society related to the course materials.

Corequisite: CHIN-201A (Intermediate Chinese I - Accel).

This course satisfies Language core curriculum.

Intermediate Chinese I for Advanced Beginners

This course is designed for students who have at least one year of Chinese language learning at NYU and who, before registering for this course, already command above-elementary aural-oral proficiency in Mandarin Chinese. The objectives are: to be able to obtain information from extended written passages; to both express and expound on, in relative length, feelings and opinions on common social and cultural topics; to expand vocabulary and learn to decipher the meaning of compound words; to develop reading comprehension of extended expository and simple argumentative passages; to solve non-complex textual problems with the aid of dictionaries; 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; to continue to become acquainted with aspects of Chinese culture and society related to the course materials.

Prerequisite: CHIN-111 (Elem Chinese I for Adv Beg).

This course satisfies Language core curriculum.

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 learn to make context-based guess about the meaning of a new word and further enhance 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-202 (Intermediate Chinese II).

This course fulfills GCS Elective for Non-native Chinese Speaker, and satisfies language core.

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-301 (Advanced Chinese I).

This course fulfills GCS Elective for Non-native Chinese Speaker, and satisfies language core.

Classical Chinese I

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-302 (Advanced Chinese II).

Classical Chinese II

This course continues the work begun in Classical Chinese I with the goal that students be able to read with reasonable facility original texts, included unpunctuated ones, from a wide variety of genres, including historical literature, philosophical and political writings, written correspondence, poetry, essays and official documents.

Prerequisite: CHIN-401 (Classical Chinese I).

This course fulfills GCS Elective for Non-native Chinese Speaker, and satisfies language core.

CHIN-SHU 403**Readings in Chinese Culture I**

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: None.

This course fulfills GCS Elective for Non-native Chinese Speaker, and satisfies language core.

CHIN-SHU 404**Readings in Chinese Culture II**

Continuation of Chinese language at fourth-year level, with reading materials generally selected from contemporary sources.

Prerequisite: None.

This course fulfills GCS Elective for Non-native Chinese Speaker, and satisfies language core.

CHIN-SHU 411**Introduction to Business Chinese and Culture**

This course is designed for those who have studied Mandarin to the intermedia high or advanced level (or equivalent). The main goal of the course is to continuously enhance students' Chinese proficiency while, at the same time, preparing them for working more comfortably and confidently in a Chinese business environment. In recent years, along with the rapid growth of Chinese economy, issues on Chinese business and economy became a hot topic. Following this trend, the course is aimed to enhance students' Chinese skills in the business context and promote their understanding of the macro and micro business environment and culture in China. An approach placing more emphasis on case study is adopted along with task-based language teaching. The course will cover the first five chapters of the textbook which is developed surrounding five real-life business cases. These five companies are all multinational that have successfully operated in China by adapting their strategies to the special needs of the Chinese market. By reading, discussing, and performing communicative tasks related to those cases, students will learn how to use Chinese as a "carrier of culture", thus acquiring a better understanding of China in economic and, broadly defined, cultural terms. The case study will also inspire students to explore the Chinese consumers' interest and mentality, so that they will occupy a more qualified position to explore a successful road toward "doing business within China." In order to enhance students' understanding of the business cases, clips of the selected television interviews and talk shows will be used to accomplish the following four goals: First, the content of the textbook and the background information offered by the supplementary media materials complement each other. Second, key terms and expressions in the textbook will be repeated in the learning process to help students reinforce the knowledge. Third, in terms of cross-usage between colloquial and written language, students will have the opportunity to supplement their reading of written texts with the experience of watching television shows on the same or similar topics, which may help them understand the distinctions between the two language styles and accurately utilize both language registers to express their own ideas in different settings. Fourth, the authentic visual materials can help close the gap between pedagogy and the real world, most effectively enabling students to become familiar with all varieties of Chinese accents, - including those of Hong Kong, Taiwan and even foreigners speaking Chinese - thereby strengthening students' abilities of practical application in the real world. In order to expand and update students' knowledge on various business-related issues, in addition to the business case 2 analysis, supplementary listening, reading, writing exercises will also be provided in class. Highlights of these exercises are: Listening comprehension of business news reports on current issues; discussion of Chinese business laws, translation of business terms and documents, and commercial language and word processing. For students who are interested in pursuing career opportunities in Mainland China or Hong Kong, the course will teach the proper ways to compose a Chinese resume while, at the same time, introducing related job interview skills. By the end of the semester, students are expected to: (1) expand business vocabulary and strengthen the communication skills in real business settings; (2) enhance the cultural awareness about China and the Chinese business world; (3) improve listening comprehension of authentic Chinese media materials; (4) improve reading, writing and translation skills of business terminologies and documents; (5) be able to use Chinese language software for certain business purposes. Class will be conducted in Chinese.

Prerequisite: CHIN-SHU 302.

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.

Prerequisite: None.

This course fulfills GCS Elective for Non-native Chinese Speaker.

CHIN-SHU 416

Introduction to Contemporary China II

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 Chinese science and technology, Chinese beliefs and religions, Chinese marriage, environment protection, Chinese media to Chinese floating population.

Prerequisite: None.

This course fulfills GCS Elective for Non-native Chinese Speaker, and satisfies language core.

CHIN-SHU 429

Advanced High Business Chinese - Cases from Real World

The course is aimed to (1) enhance students' professional Chinese-English bilingual skills in the business context and (2) promote their understanding of the macro and micro business environment and culture in China and the larger world. Adopting a case-study oriented approach that emphasizes task-based language teaching, the course, by concentrating on five real-life cases from the business world, provides a bilingual introduction to such concepts and phenomenon as business globalization, international expansion and integration, mergers and acquisition, branding strategies, impact of "Made in China" on the Chinese global economy, antidumping, and government relations, etc. Along with the case study, some of the relevant Finance, Consulting, Marketing and Accounting knowledge will also be introduced bilingually. By the end of the semester, students are expected to be equipped with enhanced Chinese and English skills to function more comfortably and confidently in the transition toward pursuing a Business-Finance major as well as preparing for future internships or job interviews. This course will be mainly conducted in Chinese with a thorough introduction of Business and Finance terminologies and concepts in BOTH Chinese and English.

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 site

Students cannot take this class if they have already:

- Passed Elementary Chinese 1 or the equivalent or higher
- Are a native Chinese speaker

Prerequisite: None. (Open only to Study Away students)

Computer Systems Engineering

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.

This course satisfies: Core Curriculum: Programming and Computational Thinking; 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.

This course satisfies: Major: CS Required, Data Science Concentration in CS, CE Required.

CENG-SHU 213 Database Systems

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 101.

CENG-SHU 303 Parallel and Distributed Computing

This subject aims to help students to get the most out of parallel and distributed computer systems, i.e. to understand the interaction between hardware and software parts of the system, to understand the power and limitations of parallel and distributed systems and to understand the beneficial and challenging aspects of parallelism. Upon completion of this subject the student should be able to understand the fundamental aspects of parallel and distributed processing and the theoretical limitations of parallel computing such as intractability, become familiar with taxonomies of parallel systems and performance measures for parallel systems, and write efficient parallel application program.

Prerequisite: CENG-202.

This course satisfies: Major: CS Electives, CE Electives.CENG-SHU 304

CENG-SHU 304 Computer Security

This course covers cryptographic systems. Topics: Capability and access control mechanisms, authentication models, protection models. Database and operating system security issues, mobile code, security kernels. Malicious code, Trojan horses and computer viruses. Security policy formation and enforcement, legal aspects and ethical aspects.

Prerequisite: CSCI-SHU 215 and CENG-SHU 350.

This course satisfies: Major: CS Electives, CE Electives.

CENG-SHU 306
Intelligent Systems

This course gives an introduction to artificial intelligence. The students will learn about intelligent agents that can make near-optimal decisions in a timely manner with incomplete information and limited computational resources. The course will address search with single and multiple agents, Markov decision processes, reinforcement learning, and tracking. The course includes problem solving and search algorithms, reasoning and fuzzy and probabilistic methods, pattern recognition and neural networks, and genetic algorithms and a brief overview of natural language processing and computer vision. The course will provide an engineering context to the mind, psychology, and neuroscience.

Prerequisite: CENG-202.

CENG-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-202 or CENG-SHU 201.

This course satisfies: CE Required, EE Additional Electives.

CENG-SHU 351
Computer Networks

The course introduces the basic concepts of computer and communication networks, like flow control, congestion control, end-to-end reliability, routing, framing, error-recovery, multiple access and statistical multiplexing. In-depth presentation of the different networking layers, with emphasis on the Internet reference model. Protocols and architectures such as the TCP, IP, Ethernet, wireless networks etc. are described in order to illustrate important networking concepts. Introduction to quantitative analysis and modeling of networks. The labs cover basic concepts of computer networking and applications, and require students to use existing networking APIs to create and build computer network prototypes and real-life applications.

Prerequisite: CSCI-101.

This course satisfies: CE Electives.

CENG-SHU 400
Senior Capstone Design Project

Prerequisite: Senior Standing

Computer Science

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: None.

This course satisfies: Core Curriculum: Programming and Computational Thinking.

CSCI-SHU 101

Introduction to Computer 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. This course satisfies: Core Curriculum: Programming and Computational Thinking; NS Electives, CS Required, Data Science Required, CE Required, EE Required.

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: Intro to Computer Science or Instructor's consent.

Equivalency: This course counts for CSCI-UA 102 Data Structures (NY).

It satisfies: Core Curriculum: Programming and Computational Thinking; CS Required, Data Science Required, CE Required.

CSCI-SHU 215

Operating Systems

Operating systems offer an interface between user programs and the bare hardware of the computer on which they run. They allow resources (e.g., disks, networks, and processors) to be shared, and provide common services needed by many different programs (e.g. data exchanges, the ability to start or stop jobs, and access to external devices) while protecting individual programs from one another.

This course presents the fundamental principles of operating systems, and discusses the tradeoffs between performance and functionality induced by the design and implementation of an operating system. It covers the following core topics: process management (processes, threads, CPU scheduling, synchronization, and deadlock), memory management (segmentation, paging, swapping), and inter-process communications (including file I/O and network sockets).

Prerequisite: Data Structures; Computer Architecture or Computer Systems Organization.

This course satisfies: CS Required, Data Science Concentration in Computer Science, CE Required.

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: MATH-251& CSCI-210.

This course satisfies: NS Electives, CS Required, Data Science Concentration in Computer Science.

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: 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: CS Electives, Data Science Data Analysis Required.

CSCI-SHU 304
Network Security

This course covers reviews networking. Topics: Basic notations of confidentiality, integrity, availability; cryptographic systems, coding and decoding messages. Cryptographic protocols for privacy, integrity, key exchange and access control. TCP/IP security; Firewalls, IPSec; secure ecommerce. Intrusion detection, prevention, response. Advanced topics are included.

Prerequisite: CSCI-215.

This course satisfies: CS Electives, CE Electives.

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 of 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-11 or placement test.

This course satisfies: CS Electives, EE Additional Electives.

CSCI-SHU 310
UNIX System Programming

This course introduces the fundamentals of computer graphics with hands-on graphics programming experiences. Topics include graphics software and hardware, 2D line segment-scan conversion, 2D and 3D transformations, viewing, clipping, polygon-scan conversion, hidden surface removal, illumination and shading, compositing, texture mapping, ray tracing, radiosity and scientific visualization.

Prerequisites: CSCI-101, MATH-110 & MATH-230.

This course satisfies: CS Electives.

CSCI-SHU 323
Interactive Computer Graphics

This course introduces the fundamentals of computer graphics with hands-on graphics programming experiences. Topics include graphics software and hardware, 2D line segment-scan conversion, 2D and 3D transformations, viewing, clipping, polygon-scan conversion, hidden surface removal, illumination and shading, compositing, texture mapping, ray tracing, radiosity and scientific visualization.

Prerequisites: CSCI-101, MATH-110 & MATH-230.

This course satisfies: CS Electives.

CSCI-SHU 330
Computer Vision and Scene Analysis

An important goal of artificial intelligence is to equip computers with the capability to interpret visual inputs. Computer vision and scene analysis is an AI area that deals with constructing explicit, meaningful descriptions of physical objects from images. It includes many techniques from image processing, pattern recognition, geometric modeling and cognitive processing. This course introduces the many techniques and applications of computer vision and scene analysis.

Prerequisites: CSCI-101; MATH-121.

This course satisfies: CS Electives.

CSCI-SHU 331
Computer Architecture

(Cross-listed with CENG-SHU 202)

CSCI-SHU 340
Introduction to Databases

Modeling the information structure of an enterprise. Logical design and relational database implementation using a tool such as Visio. Relational algebra and SQL as implemented in representative systems, such as Microsoft Access and Oracle. Normalization and denormalization. Introduction to online analytical processing, physical design, query processing and optimization, recovery, and concurrency.

Prerequisite: CSCI-101.

This course satisfies: CS Electives, Data Science Data Management Required, CE Electives.

CSCI-SHU 358
Theory of Computation

Takes a mathematical approach to studying topics in computer science, such as regular languages and some of their representations (deterministic finite automata, nondeterministic finite automata, regular expressions) and proof of nonregularity. Context-free languages and pushdown automata; proofs that languages are not context-free. Elements of computability theory. Brief introduction to NP-completeness.

Prerequisite: CSCI-215 and 220.

This course satisfies: NS Electives, CS Electives.

CSCI-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.

Prerequisite: CSCI-101 OR CSCI-11 OR placement test; MATH-121 OR MATH-SHU 201 or placement test, ;prereq or co-req: MATH-150 or MATH-233 or BUSF-101.

This course satisfies: NS Electives, CS Electives, Data Science Data Analysis Required.

CSCI-SHU 370
Object-Oriented Programming

Object-oriented programming has emerged as a significant software development methodology. This course introduces the important concepts of object-oriented design and languages, including code reuse, data abstraction, inheritance, and dynamic overloading. Covers in depth those features of Java and C++ that support object-oriented programming and gives an overview of other object-oriented languages of interest. Significant programming assignments stressing object-oriented design.

Prerequisite: CSCI-210.

CSCI-SHU 372
Artificial Intelligence

Many cognitive tasks that people can do easily and almost unconsciously have proven extremely difficult to program on a computer. Artificial intelligence tackles the problem of developing computer systems that can carry out these tasks. Focus is on three central areas in AI: representation and reasoning, machine learning, and natural language processing.

Prerequisite: CSCI-215 and 220.

This course satisfies: NS Electives, CS Electives, Data Science Concentration in Artificial Intelligence.

CSCI-SHU 378
Introduction to Cryptography

Provides an introduction to the principles and practice of cryptography and its application to network security. Topics include symmetric-key encryption (block ciphers, modes of operations, AES), message authentication (pseudorandom functions, CBC-MAC), public-key encryption (RSA, ElGamal), digital signatures (RSA, Fiat-Shamir), authentication applications (identification, zero-knowledge), and others, time permitting.

Prerequisite: CSCI-220.

This course satisfies: CS Electives.

CSCI-SHU 402

Advanced Algorithms

This course covers techniques in advanced design and analysis of algorithms. Topics: Amortized analysis of algorithms. Advanced data structures, binomial heaps, Fibonacci heaps, data structures for disjoint sets, analysis of union by rank with path compression. Graph algorithms: elementary graph algorithms, maximum flow, matching algorithms. Randomized algorithms. Theory of NP completeness and approach to finding (approximate) solutions to NP complete problems. Selected additional topics that may vary.

Prerequisite: CSCI-220.

This course satisfies: NS Electives, CS Electives.

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: CSCI-215 and 220.

This course satisfies: CS Electives.

CSCI-SHU 420

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 presentation at a capstone project symposium.

This course satisfies: CS Required.

CSCI-SHU 997

Independent Study

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.

Prerequisite: Must be approved by Area Leader and Academic Affairs.

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 MATH-SHU 121 or MATH-SHU 201.

Equivalent to MATH-UA 120.

This course satisfies: Honors MATH Mathematics Electives, MATH Mathematics Electives, CS Required, Data Science Concentration in CS, CE Required.

Core Curriculum

CULTURAL FOUNDATIONS

CCCF-SHU 101W1

Perspectives on Humanities: Beyond Nature

The most recent developments in eco-criticism see a fatal flaw in our predominant conception of nature—as pure, beautiful, and grand—arguing that it alienates us from the very thing we wish to protect, and doing so, only ensures continued environmental degradation. The corrective is an expressly 21st century mode of ecological seeing and questioning that allows us to reconceive of ourselves and the world as beyond nature. But because the idea of nature remains so central to our understanding of ethics, law, human sexuality, psychology and personhood, and artistic representation, we must ask what implications the new ecology might have for our understanding of these features of culture. In this course we survey the positions of the new ecology, and then apply these methods of critique to examples of society, self, and art (throughout intellectual history up to the present). This application will both reveal how central nature is to our ideological understanding of culture and trouble our notion of what is natural.

Prerequisite: Sophomore Standing.

CCCF-SHU 101W3

Perspectives on Humanities: Tales of Gender and Power

This course will explore how human relationships are impacted by the expression, exercise and experience of power as it interacts with gender. We will start in the realm of the sacred by examining various cosmogonies' gender dynamics—the Sumerian, Greek, Chinese and Judeo-Christian. This will lead us to special consideration of the primary relational constellations among humans, i.e. families shaped by father-mother-son-daughter allegiances, and couples by lover-spouse intimacies. Gender figures prominently in the dynamics of these relationships, significantly impacting individuals, families, social groups and cultural traditions.

While our main objective is to gain a deeper understanding of the subtle yet complex plays of power involved in gender relations, our examination of texts will also bring us close to other fundamental human issues, such as: the quest for knowledge, the uncertainties of identity and self, the creative need for love and community, the compulsive fear of/attraction to death, and the longing for transformation and transcendence, amongst others.

The course will draw on a range of literary texts (epic, novel, film, drama, etc.), products of visual culture, and forms of the expressive/performance arts to explore how each articulates and resolves (or not) the complexities inherent in the above relationships. To gain perspective, we will apply a variety of critical lenses to our close readings of texts, including psychological and philosophical theorists such as Freud, Luce Irigaray, and Judith Butler. This course will extend writing skills and concepts learned in Writing as Inquiry, focusing on critical theory, research, and academic writing and expression in the humanities. The primary assignments will be analytical essays and a digital expressions project.

Prerequisite: Sophomore Standing.

CCCF-SHU 101W6

Perspectives on the Humanities: Embodied Language

This course examines alternative experiences with language that go beyond sound and image. What does language taste like? How does language feel on the skin? What kinds of magical powers can we imagine language to have? Our examination of these extraordinary experiences will enable us to consider how identity, community, and social expectations are shaped through performances of and engagements with language. We will develop a critical vocabulary to discuss the ways in which language intersects with gender, culture, religion, and other relations of power.

Course texts will include works of poetry, film, adult and young adult fiction, as well as critical essays. This course will extend writing skills and concepts learned in the Writing as Inquiry Workshop, focusing on critical theory research, and academic writing and expression in the humanities. The primary assignments will be comprised of analytical essays.

Prerequisite: Sophomore Standing.

CCCF-SHU 101W7

Perspectives on the Humanities: Language, Identity, and World Englishes

In this post-colonial, post-modern, globalized world, unitary views of the English language begin to break down. On closer examination, it is becoming apparent that through contact with other languages and cultures English has transformed into a variety of World Englishes (B. Kachru & Y. Kachru). This section of Perspectives on the Humanities focuses on issues of language and identity as they present themselves in a variety of Englishes. Language, Identity, and World Englishes begins by providing students with “linguistics for non-linguists” introduction to language and its various parts (i.e., morphology, phonology, syntax, semantics, and pragmatics) so that we can begin to explore the variety that exists in our linguistic worlds. Once this foundation is set, this course will begin to explore the state of English not as a unitary language owned by the so-called native speaker, but rather as a pluralistic entity that has adapted to the needs of speakers from a variety of linguistic and cultural contexts. Finally, this course will conclude by exploring the intersections of language and identity from a World Englishes perspective. This will be done by examining two works from the genre of contact literatures—one from the Chinese context and one from the Sri Lankan context—to investigate how different

varieties of World Englishes are deployed to construct new, hybrid identities.
Prerequisite: Sophomore Standing.

CCCF-SHU 101W8

Perspectives on the Humanities: Sino-Western Literary Exchanges

China has been a subject of fascination in the West for thousands of years, but especially since the sixteenth century when Western missionaries and travellers first saw the country for themselves. Something similar can be said of the West in China, especially around the turn of the twentieth century, when China found itself mired in a grave sociopolitical crisis after a series of failed confrontations with Western Europe (and Japan). This course will provide intriguing illustrations, in the realm of literature, of this complementary though not always equal fascination between China and the West. Specifically, we will explore notable cases of cultural construction and literary representation of the other, such as Voltaire's rewriting of *The Orphan of Zhao*, Ezra Pound's translations and poetic experiments as inspired by his peculiar understanding of the Chinese language, literature, history, and culture, accommodation and appropriation of Western literary themes and methods in earlytwentiethcentury China. Special emphasis will be placed on the transformation of exemplary texts when they are transplanted into a cultural milieu radically different from their culture of origin. Theoretically, the course will invite thinking not only about the benefits and problems of crosscultural literary exchange but also about questions, such as language, perception, national and cultural identity, that are of direct relevance to our experience at NYU Shanghai. Apart from covering the named subject, this course will also help extend the writing skills and concepts learned in your GPS Writing Workshop, focusing on critical theory, research, and academic writing and expression in the humanities. The primary assignments will be analytical essays and a digital expressions project.

Prerequisite: Sophomore Standing.

CCCF-SHU 101W10

Perspectives on the Humanities: Expatriate Immigrant, Refugee

Expatriate, immigrant, or refugee: how and by whom are such labels determined? As modern borders blur and concepts of "world citizenship" emerge, how do the circumstances of one's emigration continue to be the determining factor of one's social status and cultural cache upon arrival to a new country? In what ways does the adoption or imposition of such labels affect the personal, communal, and economic lives of the traveller? How do historical relationships between nations determine the way its citizens are viewed when travelling abroad? When and how does "travel" become "flight" or "exile"? How is criminality portrayed and punished according to emigrant status? How do communities of emigrants (expatriate communities, immigrant communities, and refugee communities) interact with each other in-flight, upon arrival, and once settled in their shared adopted homeland? Where do these communities intersect and diverge, and how are moments of intersection and divergence internally processed and externally performed?

In this course, students will explore the questions above through close engagement with a plethora of critical and creative texts. Students will interpret the representation of expatriates, immigrants, and refugees in literature, film, and mass media through a critical lens, drawing from post-colonialist thought, literary theory, and historical documentation. This course will extend writing skills and concepts learned in Writing as Inquiry, focusing on critical theory, research, academic writing and expression in the Humanities. The primary assignments will be analytical essays and a digital expressions project.

Prerequisite: Sophomore Standing.

CCCF-SHU 101W11

Perspectives on the Humanities: American Superheros

This course will organize student writing and research around the study of the American superhero genre in three media: comics, film, and television. Born in a low-prestige, disposable medium, superhero narratives now drive franchise production at some of the world's largest media conglomerates, which produce, distribute, and license content for audiences worldwide. The course aims to introduce students to three hermeneutic approaches. First, the formal study of texts: Scott McCloud's *Understanding Comics* offers a point of entry to the study of comics as a narrative art form (in highly accessible language), which we can then apply to Alan Moore and Dave Gibbons's *Watchmen*. Second, the historicist study of genre: students will learn about the industrial and political forces that converted the superhero from newsstand kid stuff to the subject of negotiation between Hollywood and Wall Street. Third, political economy of commercial media: we will look at how Hollywood exploits superheroes as intellectual property, and who benefits from that exploitation; we will also look at how studios have navigated the political demands of their largest new market: the People's Republic of China.

Students will read texts ranging from superhero comics to scholarly media criticism to American media trade press. Graff and Birkenstein's *They Say, I Say* will serve as the rhetoric textbook to complement Rules for Writers.

Students will write prompted response papers to engage with ideas from the texts. In one shorter essay (four to five pages) they will perform a formal analysis of part of *Watchmen*. In the latter half of the course, students will undertake a research project that comprises an annotated bibliography and a longer essay (six to eight pages).

Prerequisite: Sophomore Standing.

Perspectives on the Humanities: "Innocents Abroad"

In 1867, Ralph Waldo Emerson declared that "We go to Europe to be Americanized." Emerson was referring to the tendency for young wealthy Americans to study abroad in order to finish their education and become cultivated individuals who were prepared to contribute to American society. His observation, though, suggests that travel enables us to learn more about ourselves, particularly our national identity. In this Perspectives on Humanities course, we will explore how travel can serve as a lens for understanding national identity and how it works in the twenty-first century, particularly for young people. We will study both traditional travel narratives, where the protagonist strengthens her national identity through her travels, as well as more contemporary travel narratives that encourage young people to adopt a cosmopolitan perspective. The course will also focus on a range of national literatures, but will place a special emphasis on American and Chinese texts as a way of considering our own unique position in a Sino-American educational institution. Possible texts include Mark Twain's *The Innocents Abroad*, Bing Xin's *Letters from a Chinese Student at Wellesley*, Gene Luen Yang's *American Born Chinese*, and Yung Wing's *My Life in China and America*.

Prerequisite: Sophomore Standing.

Perspectives on the Humanities: Public Moralists

The label "public intellectual" has become an increasingly common way to describe thinkers and artists who engage in social criticism of any kind for a wider public audience. What this role entails, however, is often difficult to pin down. What function does the social critic really serve in challenging the societal status quo, or advocating for social reform, or goading the public to question deeply held beliefs? And how have art, literature, and philosophy worked to shape the critical rhetoric that animates their message? One way to approach these questions is by studying the rich and multifaceted tradition of social criticism in Western intellectual history. Critics have moralized publicly about a wide range of social ills, to be sure, but social criticism (as a genre of dissent) tends to share certain overarching themes. One prominent theme is an attempt to define – through the critique of political, religious, and institutional structures – what constitutes a virtuous life and makes life worth living. In many ways, critics past and present have spoken out against the failures of civilization in order to bring us closer to this fundamentally human question, one which people from all ages tend to share.

Prerequisite: Sophomore Standing.

Perspectives on the Humanities: Diasporas, Minorities, and Human Rights

Migration, whether in the form of voluntary transition or enforced movement, has come to define our contemporary world. This course will examine a series of phenomena we associate with migration, including diaspora, human rights, and culture clashes. This writing-intensive course will prepare students for understanding contemporary geopolitical landscapes shaped by migrants, minorities and refugees through an examination of cultural productions of migrants and minorities written in various genres. Close textual and visual readings will be accompanied by discussions of current debates on migration, integration, nationalism and multiculturalism as articulated in Europe, Asia and the Americas. Analytic insights will be derived from cultural studies, postcolonial studies, studies of migration, race, and gender, and critical ethnic studies. The course will examine case studies of exiled Jews in the diaspora (Hannah Arendt, Stefan Zweig), intellectuals and activists who have discussed race, displacement and civil rights movements (W. E. B. Du Bois, Jane Nardal, Angela Davis, Yuri Kochiyama), guestworker and migrant literature from Europe (Aras Oeren, Vladimir Kaminer), contemporary literature of displacement (Yiyun Lu), and cultural theorists (Arjun Appadurai, Homi Bhabha, Avtar Brah, Rey Chow, Robin D. Kelley).

Students will write two analytic essays, which will constitute 25% of the grade and complete a research project accompanied by a presentation (30%). The remaining portion of the grade will be allotted to forum discussions (10%) and class participation (10%).

Prerequisite: Sophomore Standing.

Perspectives on the Humanities: Journeys and Encounters

How do we know what we know about other cultures? Where do the images and ideas we have of people different from us come from? Prompted by such questions, this course looks at the difficulties in seeing and representing other cultures objectively, as well as at the origins and effects of stereotyping. We do this work by closely analyzing films, plays, prose and travelogues that share a narrative theme of journeying into foreign territories and depicting cultural encounters. Some of these encounters take place in colonial or diplomatic situations, for example in The Middle East in the film Lawrence of Arabia, in China in David Henry Hwang's play *M. Butterfly* and in Africa in Wole Soyinka's play *Death and the King's Horseman*. Informed by Edward Saïd's influential theory on orientalism, as well as by postcolonial, cultural and gender studies, we set out to consider how power imbalances and preconceived notions about others might influence such encounters. We'll develop a critical vocabulary and a set of analytical tools to examine and express ideas of cultural, ethnic and gender identity as represented in different genres. The primary assignments will be two analytical essays and a digital expressions project

on images of China and Shanghai, which gives students an opportunity to analyze the prevalent media images of their current hometown.
Prerequisite: Sophomore Standing.

CCCF-SHU 101W16

Perspectives on the Humanities: Brutes, Monsters, Ghosts, and Other Troubling Creatures

This course will focus on representations of otherness: how do animals, objects, monsters, ghosts, and other phantasmagoric, hybrid creatures reflect and subvert existing power structures? We will examine how these "troubling creatures" speak to societal anxieties about gender, sexuality, class, race, and culture. We will also explore how these creatures, by speaking unexpectedly and out-of-turn, challenge power hierarchies. Course materials include fiction, comic books, film, and theoretical texts and will introduce students to literary analysis, film studies, gender studies, and philosophical debates about the division between the human and the nonhuman.

Prerequisite: Sophomore Standing.

CCCF-SHU 101W17

Perspectives on the Humanities: Go West!

Name the country: armies, exiles, settlers and traders leave behind a crowded eastern seaboard and set forth into a vast western highlands peopled by starkly different cultures, building a nation and spinning its legends under an endless sky. Like NYU Shanghai itself, this familiar story is one shared—at least in its grandest outlines—by both the United States and China. Both nations' centuries-long projects of western expansion have given rise to literature, poetry, film and even computer games that have helped to define each nation's hopes, fears and dreams. While the U.S. tales of cowboys and Indians became famous around the globe, China's lesser-known stories of conquest and nation-building are no less crucial to its national identity. In this course we will explore where these stories overlap, where they diverge, and where they point us in a post-frontier world.

Prerequisite: Sophomore Standing.

CCCF-SHU 101W18

Perspectives on the Humanities: Mutant Futures

In 2016, a group of scientists formally asserted that the planet Earth recently entered a new geological epoch: the Anthropocene. Though broad scientific consensus on the matter has yet to be reached, the very concept of the Anthropocene -- the idea that we humans have fundamentally altered our planet at such a deep level that it registers in the permanent geological record -- has not only caught on with scientists, but also philosophers, artists, writers and filmmakers concerned about the future of life on Earth. Have we truly exited the Holocene epoch, which began as the last Ice Age ended, back when our Great Ape homo sapiens ancestors were developing the earliest Stone Age foundations of what we now think of as human civilization? What might a planet permanently altered by human activity, pollution, and technology mean for the present and near future, not to mention for generations to come? Might we be facing changes of potentially catastrophic proportions, and if so, how might we adapt? And what of the diverse life-forms with which we share the planet?

In this class, we'll consider the scientific case for the Anthropocene, especially as it relates to climate change, before turning to explore works of literature, art and film that grapple with the implications of human-caused planetary change and challenge us to rethink some of our most basic assumptions about the relationships between humans, non-human nature, and the planetary systems that sustain life as we know it.

Prerequisite: Sophomore Standing.

CCCF-SHU 101W19

Perspectives on the Humanities: The Truth is out There?

Perspectives on the Humanities: How do we re-present history? How do we narrate the past? In this Perspectives on the Humanities course, we consider how various actors—in particular, historians, journalists, artists, memoirists, documentarians, and filmmakers—create texts which contribute to public discourse about our past histories, our present societies, and our shared future. We will examine the ways these visual and written texts shape the contours of our collective memories (refracted through national and cultural lenses), giving voice to the underrepresented, establishing (or challenging) authoritative narratives of the past, recasting history to serve the agendas of the present and, at times, eclipsing other possible truths with their evocative power. The goal of our inquiry is not to separate "true" histories from "false" ones or to separate fact from myth. But we will be cautious about these texts' potential power, undertaking a comparative analysis of how they are constructed and how they work--and work on us. We will continue to build upon the skills of writing and inquiry introduced in GPS Writing Workshop; this course will emphasize close reading of visual and narrative texts; the analysis of these documents through a theoretical lens; and developing an inquiry through research. We will take as our case studies several examples of traumatic moments in world history (both recent and not-so-recent); the texts which re-present these events may include painful content. Possible selections include Iris Chang's The Rape of Nanking; Tim O'Brien's The Things They Carried; Ai Weiwei's So Sorry; Spike Lee's When the Levees Broke; Leni Riefenstahl's Triumph of the Will; Quentin Tarantino's Inglourious Basterds.

Prerequisite: Sophomore Standing.

CCCF-SHU 128

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.

This course satisfies: Core Curriculum:CA. Major:Humanities 13-14: History Course:Asia Pacific World course; Humanities 14-15/15-16: Survey Course; Global China Studies: Global China Studies Elective.

Prerequisite: None.

CCSC-SHU 100
Math for Found of Science

This course is designed for students who would like to develop a better grounding of the specific mathematical methods used in the basic natural science courses, mainly in physics and chemistry. It is intended for students who would like to strengthen their mathematical skills so that they can better focus on the principles of the basic sciences. The course will review, as well as teach, how the concepts of algebra, trigonometry, vectors, calculus, differential equations, statistics as they are used in the sciences using specific examples from physics, chemistry, and applications in studies of classical mechanics, quantum mechanics, thermodynamics, electrostatics, theory of atoms and molecules, etc. The pre-requisites are basic high school mathematics.

Prerequisite: None.

CCSC-SHU 130

Introduction to Computer Programming with Mathematica

Mathematica is a powerful tool for technical computing. It provides a robust computing environment that is used in biology, chemistry, economics, engineering, finance, mathematics, physics, the arts, and a wide range of other fields. It is designed for symbolic as well as numerical calculations, and for visualization of technical information. Mathematica can change forever both what we teach and learn in the classroom, and how we teach and learn it. To provide students with the very best education possible, we need to bring it into our classrooms. The goal of this course is to empower students in the sciences, engineering, economics, finance, and even in the arts and humanities, to use symbolic and numeric computation, and thereby give them a tool (and a leg up) that they can use throughout their whole professional carrier. The course will include the following topics: A brief introduction to computer science and numerical methods, Mathematica as a sophisticated symbolic and numeric calculator, Wolfram Alpha - a computational database, programming in Mathematica and the concepts behind the language. Procedural programming, functional programming and rule based programming, parallel computing using multiple cores, dynamic interfaces (animation), precision and accuracy, working with units, vectors, matrices, calculus, differential equations, difference (recurrence) equations, optimization methods, image and video processing, audio processing, finance and economics applications, and software development. Students will complete a project that they will choose from within their own areas of interest.

Textbooks:

John W. Gray, Mastering Mathematica: Programming Methods and Applications, (Academic Press, 1997).

Paul R. Wellin, Programming with Mathematica, An Introduction, (Cambridge U. Press, 2013).

Handout notes.

Prerequisite: None.

This course satisfies: Core Curriculum: 2 cred of 4 needed for PCT

CCSC-SHU 155

Biology and Biotechnology

The course presents the essential elements of biology and biotechnology in order to enable non-scientists to have a basic understanding and an ability to read non-technical material. The techniques of genetic engineering and antibody production and the use of stem cells for medical pursuits will be covered in a manner amenable to all educated persons. Included in the biology part are both evolution and simple genetics with examples mostly from humans. Topics such as cancer and the ebola virus are currently of great interest. Students with a wide range of backgrounds should benefit.

Prerequisite: None.

Core Curriculum

SOCIAL FOUNDATIONS

CCSF-SHU 101L Global Perspectives on Society

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; offered Fall term Freshman year.

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.

Prerequisite: None.

This course satisfies: Major: GCS Elective; Core Curriculmn: SSPC.

CCSF-SHU 124 Growing Shanghai, Shrinking Detroit

Less than a century ago, the Paris-of-the-East Shanghai and the Paris-of-the-West Detroit belonged to the most modern, booming metropolises in the world, until both cities declined. Today, the global city of Shanghai has revived its old glory days, while Detroit officially filed for bankruptcy in July this year. In this course, we take Shanghai and Detroit as case studies to examine the challenges and consequences of our fast-urbanizing world. We will explore the historical and economic factors influencing the transformation of these cities, as well as look at how its citizens are experiencing these sweeping changes.

Prerequisite: None.

This course satisfies: Major: GCS Elective; HUMN: Topics; 13-14 Global Thematic Hist; Core Curriculmn: SSPC.

Core Curriculum SCIENCE, TECHNOLOGY AND SOCIETY

CCST-SHU 132

Topics: Creativity Considered

The goal of this course is to help all of us develop a deeper understanding of the concept of creativity and, in doing so, to develop some useful guides to creative activity.

Premises: We hear every day about the importance of creativity --- its importance for personal development, for a healthy cultural environment, for all kinds of organizations, whether in the business world or elsewhere, and even for entire societies. But can creativity be usefully studied, or is it something best left to life, luck, or other factors that may determine one's abilities and opportunities in this area? "Creativity is magic. Don't examine it too closely," according to the playwright Edward Albee. "Creativity is a habit, and the best creativity is the result of good work habits," according to the choreographer Twyla Tharp. The main premise of this course is that, while not taking away from the magical aspect of creativity, we can benefit from examining creativity in some detail. Moreover, we hope that, in doing so, we can uncover some habits which will enhance our own creative efforts.

Another premise of the course is that there is merit in studying creativity across very different domains --- the sciences, the humanities, the arts, business, politics, and more. Implicit in this premise is the assumption that while creativity is manifested in many different ways, there are some underlying common characteristics of the activity. In the course, we will range across many domains of human creative activity, as we search for common features. Indeed, we believe that studying examples of creativity from widely different places is helpful, as an exercise in its own right, in improving our creative sensibilities in our own individual areas of interest.

Approach: There will be two principal components to the course. One component will be the development of a map of creativity. Under our map-making activities, we will explore propositions and hypotheses that have been articulated concerning creativity --- from different regions of the world (spanning the continents) and from different periods in time. We will also study examples of creative endeavors --- again from different regions of the world, and also from different areas of human enterprise (math & science, technology, arts & culture, social & political theory, social & political practice).

The second component will be the development of a mindset towards creativity. We are all exposed to many strong narratives about creativity --- narratives that emphasize the pursuit of the extraordinary, the power of novelty, the brilliance of the individual, the importance of self-confidence, and more. While not diminishing the importance of these narratives, we will develop some alternative narratives that point to finding creativity in the ordinary, in combining what already exists, in engaging in collective activity, even in acknowledging a degree of personal insecurity. In the course, we will put these complementary narratives together to arrive at an original mindset concerning creativity.

Is there, in the end, a clear method to creativity? We will resist attempting a definite answer --- positive or negative --- to this question in the course. But we do believe that, taken together, the map and mindset we will develop can help all of us arrive at something of a personal method for unlocking our creative energies.

Prerequisite: None.

This course satisfies: Core Curriculmn: STS.

CCST-SHU 141

Innovation in/of Daily Spaces

How does a physical world – its objects, spaces, textures, infrastructures – circumscribe one's life – his mental growth, working paces, leisure time, practical decisions? This course is designed for college students who are interested in learning about innovative designs through thinking, tooling, presenting and experimenting -- in the context of "daily space."

Students: No design background needed for this course. Please note that the course does NOT aim at exclusive design topics or technical training purposes. It is a comprehensive study that mixes in-class lectures with hands-on workshops, and enhances frontier research with low-tech (for example, ordinary objects) and intuitional experiences. Fresh comers will get a hands-on and fun introduction to the design world. Already design-minded students will benefit from its innovative and comprehensive approach.

Course Design: Each student will be asked to propose an innovative project in the very beginning of the class. Students will accomplish site-specific assignments on a weekly basis, working towards the "ending products" that realize the full potential of innovative ideas by finding appropriate physical embodiments and in-context presentation of them. Students will have chances to communicate and negotiate their proposals directly with their would-be "clients," i.e. prospective buyers of the projects/products, and test the advantages and limits of their "ending products" in a mocked environment.

The class exercises are primarily project-based while required readings and topical discussions take place every week. Final projects will be judged by the absolute "quality" of your "ending products" as well as the consistency and integrity of your design thinking. When available, there will be class visitors serving the roles of guest critics and helping to evaluate class performance.

Prerequisite: None.

This course satisfies: Core Curriculmn: STS. CCSF-SHU 123

Core curriculum

Writing as Inquiry

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. In WI, we will spend additional time focusing on areas of rhetoric, grammar, and style that are relevant to second language writers.

Prerequisite: None. Required for Spring term Freshmen.

WRIT-SHU 102 Writing as Inquiry: WII

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.

Prerequisite: None. Required for Spring term Freshmen.

Creative Writing

CRWR-SHU 159

Intro to Creative Writing

This course will introduce students to the craft of writing fiction and poetry. You will learn to express your inner creativity on the page, draw characters, structure plots, entice your reader into a setting, and explore new modes of language and lyrical imagery. This course is encouraged for any student with ambitions toward becoming A Writer (!), or who is curious about how far they can stretch their creativity and their command of the English language. In this course, students will read classic and contemporary literary examples, conduct in-class workshops, and write and revise several short stories and poems.

This course fulfills the Introduction to Creative Writing requirement for Creative Writing minors or a Humanities Survey requirement.

Equivalency: This course counts for CRWRI-UA 815 Creative Writing: Introduction to Fiction and Poetry

Prerequisite: None.

CRWR-SHU 200

Creative Writing: Write, Trans

In this two-credit creative writing workshop, students will not only write their own short works -- poems, flash fiction, quick one-acts, prose poems, parables and allegories, and other forms of "microliterature" -- but they will also collaborate across languages to translate their work and that of others from English and into Chinese and vice-versa (other languages may come into play: creative work in any student's native or preferred language is admissible). The creative work of writing and translating will be accompanied by short readings in translation theory, by exploring cutting-edge trends in innovative writing both in China and elsewhere, and by reading exemplary works in translation (often side-by-side comparative translations). We will complete the semester's work by curating, designing and producing a bilingual English-Chinese volume of collected work produced by workshop participants. This last phase may involve both print and digital production, depending on how students in collaboration with guest lecturers and the course instructor decide to curate and present the best of the semester's creative writing and translation work.

创作、翻译及出版

本创意写作课两学分。学生不仅会自创简短致——诗、微小说、速写剧、散文诗、寓言故事和其他“微文体”——还会协同进行中英文（也可能包括其他语言）创作的翻译互换。伴随写作和翻译，我们还会介绍简短的翻译理论，探察中外创意写作的前沿趋势，并阅读模范的翻译作品。学期末，我们会将课程参与者的作品收纳、设计、制作成册，中英双语对照（当然也可能包括学生的其他母语或偏好使用的其他语言）。学期的最后阶段可能会用到印刷和数码制作。这要看学生在与主讲和客座教授的合作中如何决定策划并展示一学期来最佳的创意和翻译作品。

This course satisfies: Major: 2 credits of the Creative Writing Minor elective.

Prerequisite: None.

CRWR-SHU 219

Intermediate Fiction Workshop

This workshop course focuses on the art and craft of storytelling. What is a story? What makes it work? What makes it live? What makes it art? In this class we will hone in on the stories we most want to tell, develop the skills to tell them well, and learn to recognize great writing when we see it. Basic fictional tools such as point of view and story structure will be covered—tools that will help us understand why we call writing a creative discipline. Students should come prepared both to share their own writing efforts and to offer thoughtful critiques.

Prerequisite: WRIT-SHU 159 (Intro to Creative Writing)-- exceptions by permission of the instructor.

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.

Prerequisite: WRIT-SHU 159 (Intro to Creative Writing)-- exceptions by permission of the instructor.

Karl Ove Knausgaard's *My Struggle*, Book 1 famously devotes over eighty pages following the author's teenage self hunting down a high school New Year's Eve party in 1980s suburban Norway. The acclaimed bestseller (followed by five more volumes!) rides a recent wave of so-called 'autofiction,' in which novelists lift hyperreal stories directly from their own quotidian lives, hunting for truth among memories once thought too ordinary even for memoir. In this intermediate workshop class, we will use Knausgaard's long lame night of the soul as an entry point into autobiographical writing in the Selfie Age. Through reading, discussions, and extensive in-class workshops, students will experiment with both the weird freedom of autofiction (there's no way Knausgaard remembers 1984 that clearly) and the inspired fidelity of creative nonfiction (tell all the truth, as the poet said, but tell it slant.) With contemporary guides from both sides of the aisle, including Ta-Nehisi Coates, Jenny Offill, Leslie Jamison and others, students will practice writing the self as a character, framing a narrative in scenes, and digging for those tricky moments of revelation that raise our private scribbles to the gift of art. By semester's end students will produce one lengthy polished piece in each genre--two beautiful, stapled packets of proof that good writing, even about yourself, make us all less alone.

The course fulfills an intermediate workshop requirement for the Creative Writing Minor or a Humanities Focus requirement and is open to juniors, seniors, and those who have already completed Introduction to Creative Writing (OR instructor permission only).

ECON-SHU 1 Principles of 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.

This course satisfies the following: Prerequisite: Economics; Social Science Foundational course.

ECON-SHU 2 Principles of Microeconomics

Focuses on individual economic decision-makers—households, business firms, and government agencies—and how they are linked together. The emphasis is on decision making by households and firms and how these decisions shape our economic life. Explores the different environments in which businesses sell their products, hire workers, and raise funds to expand their operations; the economic effects of trade between nations; and the effects of various government policies, such as minimum-wage legislation, rent controls, antitrust laws, and more.

Prerequisite: MATH-SHU 121 (Calculus) or 201 (Honors Calculus).

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 (which 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.

Prerequisite: MATH-SHU 121 (Calculus) or 201 (Honors Calculus).

This course satisfies major pre-req for Economics and Business. It is a foundation course for Social Science major.

ECON-SHU 4 Microeconomics for the Social Sciences

Focuses on individual economic decision-makers—households, business firms, and government agencies—and how they are linked together. The emphasis is on decision making by households and firms and how these decisions shape our economic life. Explores the different environments in which businesses sell their products, hire workers, and raise funds to expand their operations; the economic effects of trade between nations; and the effects of various government policies, such as minimum-wage legislation, rent controls, antitrust laws, and more.

Prerequisite: None.

This course does NOT satisfy requirements for Business or Economics Majors; it DOES count for the Social Science Foundation course and is open to all students.

ECON-SHU 5 Math for Economists 1: Optimization

Elements of calculus and linear algebra are important to the study of economics. This class is designed to provide the appropriate tools to complement study of intermediate and advanced economic theory. Examples and motivation are drawn from important topics in economics. Topics covered include derivatives of functions of one and several variables; interpretations of the derivatives; convexity; constrained and unconstrained optimization; series, including geometric and Taylor series; matrix algebra; and (possibly) eigenvalues.

Prerequisite: None.

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.

Prerequisite: ECON-SHU 3 (Microeconomics).

This course fulfills Required Economics course

ECON-SHU 200**Topics: Economics of Gender**

This course satisfies Econ Elective.

ECON-SHU 201**Advanced Math for Economics**

This course explores applications of calculus to basic differential equations and functions of several variables, which arise in virtually all fields of applied mathematics including Economics. Topics addressed include first and second- order differential equations, surface and line integrals, divergence, gradient, curl, and the theorems of Gauss, Green, and Stokes.

Prerequisite: Placement via NYU SHU mathematics placement exam or grade of C or better in MATH-SHU 121(Calculus) or 201(Honors Calculus).

This course satisfies the following: Data Science Math Required. Economics Advanced Economics. Social Science Methods.

ECON-SHU 202**Intermediate Macroeconomics**

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.

Prerequisite: ECON-1(Principles of Macroeconomics) or 251(Economics of Global Business).

This course satisfies the following: Economics core course. Social Science focus. Data Science concentration in Economics.

ECON-SHU 203**History of Economic Thought**

Begins with a short introduction to mercantilism, then moves to the classical school, examining the contributions of its main figures (Smith, Malthus, Ricardo, Mill, and others). Ends with Marx's reaction to classical doctrines and the Marginalist Revolution of the late 19th century, which set the foundation of modern neoclassical economics. Conceptually, covers a variety of topics but focuses on two main entities: first, the normative aspects of the debate on the factors determining the value of commodities and the related issue of the principles that ought to govern the allocation of wealth; and second, various theories of economic growth and historical change, including predictions made on the future of capitalism.

Prerequisite: ECON-SHU 150.

This course satisfies: Major: Social Science Focus.

ECON-SHU 215**Economic History**

This course introduces students to a broad set of important economic history topics. The period covers the Middle Ages to the 20th century, and the geographic coverage is globally wide. More focus is given to Britain and Northwestern Europe because that is where economic growth first occurred, but US, Asia, Latin America, and Africa are also included. The course is designed so that students with a particular interest in one topic area can focus their attention in that area, while still being exposed to a broader set of research. It is designed to This course has several objectives: the first is to give students essential background in the historical context for modern economic development through time.

Secondly, it shows how theoretical approaches and quantitative tools can be applied to historical evidence. The third objective is to introduce students to research and paper writing in economic history and other applied fields of economics.

Prerequisite: ECON-1(Principles of Macroeconomics) or 251(Economics of Global Business);

Corequisite: ECON-1(Principles of Macroeconomics) or 251(Economics of Global Business).

This course satisfies Economics 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. The course assumes no prior knowledge of economics or math.

Prerequisite: MATH-SHU 121 (Calculus) or 201 (Honors Calculus).

This course satisfies the following: Economics Elective; Social Science Methods course; Math/Honors Math elective.

Advanced Economic Theory

Designed to introduce students to some of the main model-building techniques that have been developed by microeconomists. Intended for advanced undergraduates who have taken the necessary preparatory courses in economics and mathematics. Any of the following three basic topics may be covered. The first topic is the static theory of consumer behavior both in a certain world and in an uncertain world, including game theory. The second topic is the theory of general equilibrium. The third topic is the theory of dynamic optimization. In addition to the coverage of the economics, the advanced mathematical techniques that are needed to understand the material are reviewed.

Prerequisites: ECON-SHU 10 (Intermediate Micro) AND ECON-SHU 5 (Math for Econ 1) OR MATH-SHU 123 (Multivariate Calculus).

This course satisfies Advanced Economics course.

History of Modern Economic Growth: Exploring China From a Comparative Perspective.

The course introduces the history of modern economic growth, with a special focus on China. It will be organized around two main themes: the Industrial Revolution and the Great Divergence. To understand why some nations became developed but the others failed, this course tries to analysis the important evidences and theories about how institution, geography, technology and culture shape the long-term economic development. The class will first focus on how did modern economic growth take place and spread worldwide; and then we move to apply these frameworks to China and explore the historical trajectory of the rise of China.

Prerequisite: None.

This course fulfills Economics Elective, and satisfies SSPC core curriculum.

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 (Microeconomics).

This course satisfies the following: Business and Finance core, Business and marketing core, Social Science Foundational course.

International Trade

This course will cover the basics of international trade theory and policy. It will introduce students to the main theoretical concepts in international trade, ranging from the Ricardian comparative advantage theory to the new trade theory under imperfect competition. Using the tools of microeconomic analysis, this course will explore the patterns of trade among countries, policies that impede or promote free trade as well as their welfare and distributional implications.

Prerequisite: ECON-SHU 3 (Microeconomics).

This course satisfies Economics Elective.

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.

Prerequisite: Statistics (MATH 233 (Theory of Probability) OR MATH 150 (Probability and Statistics) OR BUSF 101 (Statistics for Business & Econ)).

This course satisfies the following: Economics core course. Social Science methods. Data Science Data analysis.

Industrial Organization

How firms behave in imperfectly-competitive markets. Uses game theory to understand strategic decisions. Topics include price discrimination; peak load pricing; productivity; Bertrand, Cournot, and Hotelling oligopoly models; entry; mergers and merger regulation; monopoly regulation; patents; auctions; and two-sided platforms. Moves from theoretical and mathematical models to real-world data and problem sets.

*Prerequisite: ECON-10 (Intermediate Microeconomics).
This course satisfies Economics Elective.*

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: ECON-SHU 301 (Econometrics) AND ECON-SHU 1 (Prin of Macroecon) AND ECON-SHU 2 (Prin of Microecon) or ECON-SHU 150 (Microecon).

This course satisfies the following: Economics Elective. Social Science Focus.

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: ECON-SHU 10 (Intermediate Microeconomics).

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-10 (Intermediate Microeconomics).

This course satisfies Economics Elective.

Electrical and Systems Engineering

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-121 (Calculus) or MATH- 201 (Honors Calculus).

EENG-SHU 301 Advanced Circuits

The course concentrates on differential and multistage amplifier, current mirrors, current sources, active loads; frequency response of MOSFET, JFET and BJT amplifiers; Bode plots; feedback amplifiers, gain-bandwidth rule and feedback effect on frequency response; Class A, B and AB output stages; op-amp analog integrated circuits; piecewise-linear transient response; determination of state of transistors; wave-shaping circuits; MOS and bipolar digital design; noise margin, fan-out, propagation delay; CMOS, TTL, ECL; and an alternate week laboratory. The course studies design and analysis of analog integrated circuits, frequency response of amplifiers, feedback amplifiers, TTL and CMOS digital integrated circuits.

Prerequisite: EENG-251.

This course satisfies: EE Additional Electives.

EENG-SHU 304 Electromagnetic Fields and Waves

Electromagnetic wave propagation in free space and in dielectrics, starting from a consideration of distributed inductance and capacitance on transmission lines. Electromagnetic plane waves are explored as a special case. The reflection and transmission of pulsed sources at discontinuities are discussed, while impedance transformation and matching are presented for harmonic time dependence. Snell's law and the reflection and transmission coefficients at dielectric interfaces are derived for obliquely propagation plane waves. Guiding of waves by dielectrics and by metal waveguides is demonstrated. Alternate-week laboratory. Objectives: Establish foundations of electromagnetic wave theory applicable to antennas, transmissions lines and materials; increase appreciation for properties of materials through physical experiments.

Prerequisite: CCSC-110 or BIOL-21.

This course satisfies: EE Required.

EENG-SHU 306 Instrumentation, Sensors and Actuators

The course focuses on electrical circuits and components, passive and active filtering for signal conditioning, dynamic measurement system response characteristics, analog signal processing, digital representation, data acquisition, sensors, actuators and actuator characteristics. Studies of measurement systems via computer simulation also are discussed. The laboratory experiments draw upon examples from all disciplines of engineering such as data acquisition, operational amplifiers, temperature measurement, and motion and force measurements.

Prerequisite: EENG-251.

This course satisfies: EE Additional Electives.

EENG-SHU 322 Electronics

This course focuses on circuit models and amplifier frequency response, op-amps, difference amplifier, voltage-to-current converter, slew rate, full-power bandwidth, common-mode rejection, frequency response of closed-loop amplifier, gain-bandwidth product rule, diodes, limiters, clamps and semiconductor physics. Other topics include Bipolar Junction Transistors; small-signal models, cut-off, saturation and active regions; common emitter, common base and emitter-follower amplifier configurations; Field-Effect Transistors (MOSFET and JFET); biasing; small-signal models; common-source and common gate amplifiers; and integrated circuit MOS amplifiers. The alternate-week laboratory experiments on OP-AMP applications, BJT biasing, large signal operation and FET characteristics. The course studies design and analysis of operational amplifiers; small-signal bipolar junction transistor and field-effect transistor amplifiers; diode circuits; differential pair amplifiers and semiconductor device-physics fundamentals.

Prerequisite: EENG-251.

This course satisfies: CE Required, EE Required.

EENG-SHU 351 Analog and Digital Communication Theory

The course introduces the principles of the various analog communication fundamentals. Amplitude modulation and demodulation, angle modulation and demodulation. Noise performance of various receivers and information theory with source coding theorem are also dealt. The labs emphasize experiential learning of basic analog and digital communication theory concepts and applications, including experiments demonstrating analog and digital modulation techniques.

Prerequisite: EENG-SHU 303(2054).

**EENG-SHU 352
Control Systems**

The course introduces the principles of dynamic system modeling, analysis, and feedback control design with extensive, hands-on computer simulation. Modeling and analysis of dynamic systems. Description of interconnected systems via transfer functions and block/signal-flow diagrams. System response characterization as transient and steady-state responses and error considerations. Stability of dynamical systems: Routh-Hurwitz criterion and Nyquist criterion. Graphical methods for dynamical system analysis and design: root locus and Bode plot. Computer-aided feedback control design for mechanical, aerospace, robotic, thermo-fluid, and vibratory systems.

Prerequisite: MATH-124.

This course satisfies: NS Electives, EE Electives.

**EENG-SHU 354
Electrical Energy and Power Systems**

Introduction to electric-energy sources, energy-storage devices, energy economics, environmental issues and electrical hazards. Principles of electric power systems transmission and distribution. Basic electromechanical conversion systems pulse and distribution transformers, induction rotating machines. Principles of electric energy conversion, static power supplies, static controllers and electric-power quality. Fundamentals of power management heat-sinks and cooling systems. Experiments with basic electrical machines.

Prerequisite: EENG-304.

This course satisfies: EE Electives.

**EENG-SHU 355
Digital Signal Processing**

The course introduces the principle concepts of discrete-time signals and systems, frequency analysis, sampling of continuous time signals, the z-transform, implementation of discrete time systems, the discrete Fourier transform, fast Fourier transform algorithms, filter design techniques. The labs cover experiential learning of digital signal processing concepts, and require students to use knowledge to create and build prototypes that demonstrate their understanding of the material covered in the lecture.

Prerequisite: EENG-303(2054).

This course satisfies: EE Additional Electives.

**EENG-SHU 356
Communication Systems**

The course introduces the principles of the various analog communication fundamentals. Amplitude modulation and demodulation, angle modulation and demodulation. Noise performance of various receivers and information theory with source coding theorem are also dealt. The labs emphasize experiential learning of basic analog and digital communication theory concepts and applications, including experiments demonstrating analog and digital modulation techniques.

Prerequisite: EENG-303(2054).

This course satisfies: EE Additional Electives.

**EENG-SHU 375
Robotic Systems**

This course presents an overview of Robotics covering a selection of topics including Controls, Localization, Motion Planning, Sensing, Kinematics, and Human-Robot Interaction. Practical lab and simulation exercises complement the lectures. The students will further specialize and consolidate their knowledge through semester-long hands-on projects that involve the design, implementation, and testing of robotic systems and applications.

Prerequisite: EENG-352.

This course satisfies: NS Electives, EE Electives.

**EENG-SHU 400
Senior Capstone Design Project**

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.

Prerequisite: Senior Standing.

EENG-SHU 2054 (formerly 303)

Signals and Systems

This course centers on linear system theory for analog and digital systems; linearity, causality and time invariance; impulse response, convolution and stability; the Laplace, z- transforms and applications to Linear Time Invariant (LTI) systems; frequency response, analog and digital filter design. Topics also include Fourier Series, Fourier Transforms and the sampling theorem. Weekly computer-laboratory projects use analysis- and design-computer packages. The course establishes foundations of linear systems theory needed in future courses; use of math packages to solve problems and simulate systems; and analog and digital filter design.

Prerequisite: MATH-124.

This course satisfies: NS Electives, EE Electives.

EENG-SHU 3193 (formerly 353)

Very Large Scale Integrated (VLSI) Circuit Design

The course offers an overview of integrated circuit-design process: planning, design, fabrication and testing; device physics: PN junction, MOSFET and Spice models; inverter static and dynamic behavior and power dissipation; interconnects: cross talk, variation and transistor sizing; logic gates and combinational logic networks; sequential machines and sequential system design; subsystem design: adders, multipliers, static memory (SRAM), dynamic memory (DRAM). Topics include floor planning, clock distribution, power distribution and signal integrity; Input/Output buffers, packaging and testing; IC design methodology and CAD tools; implementations: full custom, application-specific integrated circuit (ASIC), field programmable gate arrays (FPGA). The course provides foundations of VLSI design and custom VLSI design methodology and state-of-the-art CAD tools.

Prerequisite: EENG-322.

This course satisfies: CE Electives, EE Electives.

English

ENGL-SHU 100A **English for Academic Pursuits: The Narratives of Science**

The freshman English for Academic Purposes (EAP) 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. While the primary emphasis is on speaking and listening, you will also practice reading and writing. You will engage with content individually and in groups, complete a variety of communicative tasks, reflective writing assignments and an experiential learning project outside the walls of the university. The courses are designed to help you acquire skills that can be also be transferred to your future professional and personal lives, and to help you cultivate an interest in issues that cross disciplines, an important part of a well-rounded, liberal arts education. Specifically, this course will explore the history of scientific rhetoric by investigating two co-dependent narrative arcs in the "story" of science: the way scientists write/talk/think in scientific discourse, and the way we write/talk/think about science and scientists. For centuries, science bore little resemblance to the empirical discipline that we recognize today, yet, while modern science has claimed the language and tools of objectivity, it is wrong to believe that it is free of argument, controversy, and bias. We will consider how science emerged from philosophy, advanced, and adjusted its methodology through the ages. We will debate the relationship of science to art, religion, literature, media, law, and other disciplines, explore shared and distinct academic language, and practice various genres of writing and speaking and communicating that are used by scientists working in distinct fields.

Prerequisite: None.

ENGL-SHU 100C **English for Academic Pursuits: Cities & Urban Conscious**

The freshman English for Academic Purposes (EAP) 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. While the primary emphasis is on speaking and listening, you will also practice reading and writing. You will engage with content individually and in groups, complete a variety of communicative tasks, reflective writing assignments and an experiential learning project outside the walls of the university. The courses are designed to help you acquire skills that can be also be transferred to your future professional and personal lives, and to help you cultivate an interest in issues that cross disciplines, an important part of a well-rounded, liberal arts education. The course relies on the mutually enriching interaction between knowing, understanding, thinking and feeling to achieve as comprehensive a sense of urban reality as possible. The emphasis is on sensibility and communicating sensibility, encouraging the much-neglected 'unquantifiables' as a legitimate area of enquiry, as capable of contributing to research as any other. The course draws on and replicates the lived urban experience in the student's learning, straddling the Humanities, Social Science and STEM.

Prerequisite: None.

ENGL-SHU 100E **English for Academic Pursuits: Consumerism, Alienation and Happiness**

The freshman English for Academic Purposes (EAP) 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. While the primary emphasis is on speaking and listening, you will also practice reading and writing. You will engage with content individually and in groups, complete a variety of communicative tasks, reflective writing assignments and an experiential learning project outside the walls of the university. The courses are designed to help you acquire skills that can be also be transferred to your future professional and personal lives, and to help you cultivate an interest in issues that cross disciplines, an important part of a well-rounded, liberal arts education. Specifically, this course will explore what some regard as an unprecedented, global crisis humanity now faces, a crisis connected with the influence of consumerism and materialism on modern culture and society. We will further examine what it may mean to live a meaningful life at this time in history, and what some keys to creating a more sustainable and happy future might be.

Prerequisite: None.

ENGL-SHU 100F **English for Academic Pursuits: Business in the 21st Century**

The freshman English for Academic Purposes (EAP) 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. While the primary emphasis is on speaking and listening, you will also practice reading and writing. You will engage with content individually and in groups, complete a variety of communicative tasks, reflective writing assignments and an experiential learning project outside the walls of the university. The courses are designed to help you acquire skills that can be also be transferred to your future professional and personal lives, and to help you cultivate an interest in issues that cross disciplines, an important part of a well-rounded, liberal arts education. Specifically, this course will investigate the role of business organizations in what some call the "post-modern period," or the 21st century. As technology develops and both social and environmental needs evolve, what role does business play in society? What role should it play? What are current business trends in the west? In China? What are current narratives (cultural, historical, personal) about business and how do such narratives shape

business practices themselves? In this course, there will be an emphasis on both creative and critical thinking as we ask questions, analyze problems and come up with our own solutions.
Prerequisite: None.

ENGL-SHU 100G

English for Academic Pursuits: Negotiating Self and Other

The freshman English for Academic Purposes (EAP) 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. While the primary emphasis is on speaking and listening, you will also practice reading and writing. You will engage with content individually and in groups, complete a variety of communicative tasks, reflective writing assignments and an experimental learning project outside the walls of the university. The courses are designed to help you acquire skills that can be also be transferred to your future professional and personal lives. The thematic, content-based EAP seminar, also aims to help you cultivate an interest in issues that cross disciplines, an important part of a well-rounded, liberal arts education. The "self" is a natural place to begin. The problem is that this is all-too-often simply taken for granted. What are selves? Are we what we say we are? But what about the way we appear to others? An important constraint on what we may become is our membership in various communities. Students will be presented with a variety of texts (written and visual, including video, audio clips, and print advertising) in order to assist them in forming their opinions about the process of negotiation between self and other in society. Moreover, the concept of 'negotiation' itself will be highlighted and explored in this context. Some of the subthemes that will be discussed will be self-concept and identity construction, culture and sub-culture, treatment of minority groups, gender identity, and material and consumer identities.

Prerequisite: None.

ENGL-SHU 100L

English for Academic Pursuits: It's in the News

This 101-level English for Academic Purposes (EAP) course is designed to help you continue to develop the high-level language, communication, and critical thinking skills you need to be successful in an English-speaking university. At the 101 level students are encouraged to gain mastery over facilitation of group discussions as well as the other academic communicative skills introduced at the 100-level. It is hoped that these skills can also be transferred to future professional and personal lives. As in the 100-level course, the thematic, content-based EAP seminar, aims to help you cultivate an interest in issues that cross disciplines, an important part of a well-rounded, liberal arts education. In this course, you will achieve this through your developing a critical stance towards the global news media, and through your developing a creative approach to academically commenting on the news. A critical and creative response to the media, as with all liberal arts sensibilities, cannot be developed solely through lectures or learning simple factual knowledge. In fact, one of the first things you will learn on this course is that there is much more to learning than just knowledge. The format of the course draws directly on material from live news media, together with a small number of academic studies. In other words, you will learn on this course at the same time as you explore the media. While, like any other, this course is concerned with knowledge, skill and understanding, its clear focus and emphasis are on becoming a competent and confident judge of world affairs. You will learn to see current events with new eyes, hear it with new ears and respond to it with a new heart.

Prerequisite: None.

ENGL-SHU 100M

English for Academic Pursuits: Global Citizenship

This 101-level English for Academic Purposes (EAP) course is designed to help you continue to develop the high-level language, communication, and critical thinking skills you need to be successful in an English-speaking university. At the 101 level students are encouraged to gain mastery over facilitation of group discussions as well as the other academic communicative skills introduced at the 100-level. It is hoped that these skills can also be transferred to future professional and personal lives. As in the 100-level course, the thematic, content-based EAP seminar, aims to help you cultivate an interest in issues that cross disciplines, an important part of a well-rounded, liberal arts education. Specifically, this course will explore the concept of global citizenship, what may be some distinguishing features of this period of human history, and what some implications may be for individuals wishing to be responsible global citizens at this time. To take on this vast topic within the limits of a one-semester course, we will briefly touch on such global issues as poverty & socio-economic development, environment crisis, human rights & social inequalities, and the persistence of violent conflicts. We will examine the systemic interconnections and causes of these challenges and consider what kinds of actions conscientious global citizens can take, individually and in groups organized at the grass roots, to address these problems and promote positive social change in an increasingly globalized and interconnected world.

Prerequisite: None.

This 101-level English for Academic Purposes (EAP) course is designed to help you continue to develop the high-level language, communication, and critical thinking skills you need to be successful in an English-speaking university. At the 101 level students are encouraged to gain mastery over facilitation of group discussions as well as the other academic communicative skills introduced at the 100-level. It is hoped that these skills can also be transferred to future professional and personal lives. As in the 100-level course, the thematic, content-based EAP seminar, aims to help you cultivate an interest in issues that cross disciplines, an important part of a well-rounded, liberal arts education. What is the nature of "home"? Is it a place, a community or a state of mind? This course will explore the concept of "leaving home" from a psychological, historical, economic, cultural and literary perspective. Why do people leave home and what is it that they seek when they do? When do people leave home by choice and not by choice? How does the concept of "home" change from culture to culture and over historical time? How do new "homes" shape the people who have sought them and vice versa? Related issues of family and immigration/migration will also be explored, from all of the perspectives described above. Also, we will look into the experience of the "other." When is "otherness" an uncomfortable consequence of leaving home and when is it deliberately sought? We will also explore homelessness and its ramifications, as well as, if time permits, private efforts towards space travel -is "home" our planet, and what does it mean when we want to leave?

Prerequisite: None.

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.

Prerequisite: None.

This course satisfies the following: GSC Elective, SSPC core curriculum.

CCSF-SHU 124

Growing Shanghai, Shrinking Detroit

Less than a century ago, the Paris-of-the-East Shanghai and the Paris-of-the-West Detroit belonged to the most modern, booming metropolises in the world, until both cities declined. Today, the global city of Shanghai has revived its old glory days, while Detroit officially filed for bankruptcy in July this year. In this course, we take Shanghai and Detroit as case studies to examine the challenges and consequences of our fast-urbanizing world. We will explore the historical and economic factors influencing the transformation of these cities, as well as look at how its citizens are experiencing these sweeping changes.

Prerequisite: None.

This course satisfies the following: GCS Elective; HUMN: Topics; 13-14 Global Thematic Hist; SSPC core curriculum.

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. (This may be used as a survey course in the Humanities.)

This course satisfies the following: Core Curriculum: SSPC; Major: GCS required, HUMN Survey; SSPC core curriculum.

GCHN-SHU 164

The Stuff of Legends: The Many Meanings of the Early Silk Road(s)

Much has been said and written about 'The Silk Road' since Ferdinand Freiherr von Richthofen coined the term in 1877. Fostered by spectacular finds made by so-called 'explorers' such as Sir Aurel Stein, Paul Pelliot, Sven Hedin and others it quickly became the subject of countless museum exhibitions and legends. In times when almost any location – virtual or real – is but one mouse click away, the catchphrase 'Silk Road' has not lost any of its original appeal. Quite the contrary, the term is almost ubiquitous in all kinds of media. Yet, it is never quite clear what exactly the Silk Road concept really 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 documentations 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.

Prerequisite: None. (This may be used as a topic course in the Humanities.)

This course satisfies the following: GCS Chinese Geographies; HUMN: Survey; SSPC core.

GCHN-SHU 200

Topics in Global China Studies: Global Chinese Food

Chinese food is widely available around the globe. It can be found everywhere from Tromsø, Norway, located north of the Arctic Circle, to the remote, tropical islands like Mauritius. How did Chinese food become so widespread?

This course introduces students to the history of Chinese food around the world. We will learn how the globalization of Chinese food is deeply connected to Chinese migration patterns, expansion of Western influence in Asia, and race relations in places of Chinese settlement. The

course begins in the 18th century with Chinese merchants trading in exotic foods in Southeast Asia. The bulk of the course, however, focuses on the 19th and 20th century, and specifically on major events in modern world history that affected the availability and demand for Chinese food. The course topics are organized chronically, and each week focuses on key historical developments in the consumption of Chinese food. From the 18th century to today, Chinese food transformed from a cuisine exclusively for the Chinese immigrants to one enjoyed by people around the world. It is a history of private home consumption to international, mass consumption.

Prerequisite: None.

This course satisfies a Chines Arts Core Requirment, and a Global China Studies Major Elective.

GCHN-SHU 224

Chinese Maritime History

Investigates China's long tradition of shipbuilding and navigational practice in terms of internal riverine communication, coastal defense, and ocean voyages; its early naval dominance; the famous Ming treasure fleets that sailed as far the Persian Gulf and the east coast of Africa; Qing shipyards; and recent developments.

Prerequisite: None. (This may be used as a topic course in the Humanities.)

This course satisfies the following: Major - HUM - Topic course; GCS-Elective course; SSPC core.

GCHN-SHU 230

Culture and Media in Urban China

In this course we look at contemporary urban Chinese life from an interdisciplinary perspective, with readings in history, anthropology, sociology, cultural and literary studies. Readings provide a background for students' hands-on research, including ethnographic fieldwork, discourse analysis, and the study of contemporary formations of culture and media, including journalism, online communities, television, fashion, popular culture, and avant-garde art and music. Students develop a comprehensive familiarity with contemporary China studies and develop facility in major research methods in the humanities and social sciences. Students complete group research projects which include ethnographic, archival, statistical, and textual research.

Prerequisite: None.

GCHN-SHU 231

Social and Cultural Debates in 20th Century China

"Our present trouble lies in our clinging to old institutions without knowing how to change," Kang Youwei wrote in a letter to the Emperor in 1898. Kang's concern would dominate intellectual debates over the twentieth century. In this course we will explore social and cultural debates in 20th-century China, focusing on topics such as Confucianism, social reform, nationalism, women empowerment, and art and literature. The questions that will guide this course include: Why did scholars like Kang Youwei and Liang Qiyao advocate reform and constitutional monarchy, while others, like Sun Yat-sen and Qiu Jin, called for revolution and the overthrow of the empire? What led to the Chinese Civil War between the Nationalists and the Communists? What was the May Fourth Movement about? Who are Mr. Science and Mr. Democracy? What did Hu Shi and Chen Duxiu mean when they declared classical language 'dead'? What are Lu Xun's Diary of a Madman and Ding Ling's Miss Sophia's Diary really about? What did Mao Zedong mean when he claimed at the Yan'an Forum, in 1942: "There is in fact no such thing as art for art's sake [...] literature and art are the cogs and wheels in the whole revolutionary machine"? What is meant by the Cultural Fever of 1980s China? What made the 'hooligan' (流氓) author Wang Shuo a national bestseller in the 1980s? What were the main points of debate between the New Left and the neo-Liberals in the 1990s?

Prerequisite: None.

GCHN-SHU 240

Modern Chinese Governance

Introduces how the Chinese political system has been operating in the reform era. The course examines the inter-relationship between the process of economic reform that began in 1978 and the nature of governance, examining both national-level trends, as well as development in the localities. A portion of the course will specifically evaluate the role of Shanghai in the Chinese administrative hierarchy.

Prerequisite: None.

GCHN-SHU 241

Chinese Revolutions

Revolutions both successful and unsuccessful in China; foreign influences and their significance in this context. Ideology, participation, leadership, strategies and tactics adopted by such diverse groups as the White Lotus, Taiping, and Boxers; the 1911 nationalist and 1949 communist revolutions, and their legacies.

Prerequisite: None.

Mao and the Chinese Revolution

This course introduces the historical relationship established in the twentieth century between Mao Zedong, his philosophy of history and revolution, and the Chinese Revolution in global context. The course provides a thematic lens through which to view one aspect of modern Chinese and global history. The working premise is that the revolution made Mao as much as Mao made the revolution. We will investigate Mao's thought and theories, as well as his revolutionary practice, not as biographical artifacts but as products of and contributors to the revolutionary situation in China and the world in the twentieth century. We end with Mao's afterlives.

Prerequisite: None.

Chinese Environmental Studies

As the 21st century began, pundits debated whether, like the 20th, it would also be "America's century," whether China's remarkable economic rise would make it "China's century," or, perhaps, one seeing the development of "Chimerica." At the same time, it was also said that environmental limits to development will be the primary shaper of countries and their fortunes—with China (and India), with huge population and rapid development, and the U.S., with high per capita consumption, as keys to the future of the planet. This course will study China's environmental challenges and governance in the context of America's own environmental challenges and governance system, and in the context of the challenges to the two countries as the primary sources of the world's greenhouse gas emissions. We will consider how developments may shape business, government, and culture, and the ways in which China and America may learn from one another.

Prerequisite: None.

Modern Chinese Economy

Examines the major economic transitions (and failures to transform) in China since the establishment of the People's Republic, and spends considerable time on the current transition from a centrally planned economy to a state-dominated market economy, considering possible future trajectories.

Prerequisite: None.

Modern Chinese 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-language 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 emigration and their settler-colonial history, the post-1949 political split, and global decolonization movements, among others. We ask: how do writers represent China on the world stage? Where in their works can we discern stylistic and cultural hybridization? How do they variously cement or deconstruct the conventional East-West divide? What alternative literary geographies and worldviews do they offer? We begin with the satirical modernists of Republican-era China. Next, we turn to Hong Kong and Taiwan for identity debates, colonial legacies, nativism, and postmodern cultures. In light of the global migration history, we also study narratives from Chinese-speaking America, Malaysia, and Singapore to analyze how writers creatively deconstruct the notion of Chineseness. Finally, we discuss the changing terms of exclusion and inclusion of ethnic minorities in present-day Han-Chinese societies, to further expose the internal fractures within the global Sinophone cultures.

Prerequisite: None. (This may be used as a topic course or literary interpretation in the Humanities.)

This course satisfies the following: GCS Elective, HUMN Topic; CA core curriculum.

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. (This may be used as a topic course in the Humanities.)
This course satisfies the following: GCS Elective, HUMN Topic; CA core curriculum.*

GCHN-SHU 270

Researching Chinese Politics and Society

Examines how various methodologies in the social sciences are used for research about social and political trends in contemporary China. Themes includes understanding the production of information by the Chinese statistical system, understanding how to use this data effectively, the use of mapping / GIS techniques, survey-research and survey experiments, internet research and web-crawling innovations, as well as the analysis of Chinese textual data. Students will actively make use of these approaches for their assignment.

Prerequisite: None, but it is desirable to have taken either a math, a statistics or a programming course.

This course satisfies the following: GCS Elective; SSPC core.

MCC-SHU 9451

Global Media Seminar: China

This course looks at the transformation of China's media landscape since the 1990s through market reforms and new technology. Topics include the rise of 'commercial' newspapers, magazines and TV stations; animation and new media; the role of advertising, and tensions between political control and demands for greater freedom of expression on the Internet and social media. Students follow latest developments in the Chinese media; field trips and talks by media professionals provide historical, regulatory and social context.

This course satisfies the following: GCS Elective; SSPC core.

HIST-SHU 110

U.S. History Since 1865

Course examines developments in U.S. society within a global historical context. Topics: urbanization; industrialization; immigration; American reform movements (populism, progressivism, the New Deal, and the War on Poverty); and foreign policy. Beginning with the post-Civil War expansion of the U.S. into the American West, the course traces U.S expansion and increasing global influence through the Spanish-American War, World Wars I and II, Cold War, Gulf Wars, and the War on Terror. Emphasizes broad themes and main changes in U.S. culture, politics, and society.

Prerequisite: None.

This course satisfies Humanities Major.

HIST-SHU 126

World History: Part I

This course examines the emergence of world societies and the interactions between them from prehistoric times to about 1450CE. A comprehensive study of specific periods and regions will be followed by an in-depth analysis of primary sources and cross-regional contacts.

Prerequisite: None.

HIST-SHU 153

History of Modern China Since 1840

This course covers the history of China focusing on the past two centuries and especially the 20th century, when China underwent several major revolutions. We will follow chronologically the development of China starting with the foundation and consolidation of its last major dynasty, the Qing in 1644, moving through the collapse of the dynastic system and the rise of the first Republic of China in 1912, continuing through the Nationalist Revolution of 1927, and ending with discussions of the formation and development of the People's Republic of China since 1949. Large themes that run through the course include the impact of Western colonialism on China, the role of internal rebellions and wars in giving rise to new political and social formations, the impact of Japanese aggression on China's state and society, the Nationalist and Communist Revolutions, and the endurance of the centralized Chinese state. Two excursions to historic sites in Shanghai will reinforce students' knowledge and understanding of the subject matter while also highlighting the important role of Shanghai in modern Chinese history.

Prerequisites: None.

This course satisfies the following: Core Curriculum: SSPC; Major: GCS Electives, HUMN Survey.

HIST-SHU 208

War and Peace: Europe Since 1900

This course will provide a broad introduction to the political, social and cultural history of Europe since 1900. The location of the most violent conflict in human history during the first half of the twentieth century, Europe's postwar development 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. Taking the continent's delicate union as its central concern, the seminar will familiarize students with key themes, methods and problems in Modern European History. Structured chronologically, individual sessions will examine European modernity and fin-de-siècle culture; empires and colonialism; the causes, experiences and effects of the First and Second World Wars; the Holocaust; Europe's role in the Global Cold War; the crisis-ridden 1970s; and the crucial question of whether a distinctive European identity has developed over time.

Prerequisite: None.

HIST-SHU 209

Witches, Magic and the Witch Hunts in the Atlantic World, 1400-1700

The study of "witchcraft" and the witchhunts 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.

HIST-SHU 210

History of Death, Dying, and Grief: The Impact of Modern War

This class will examine the changing nature of death, dying and grief since the late 19th century by focusing on modern wars as instruments of change. As both the number of mortalities and the manner of death changed, so too did private and public ways of dealing with death. Societies around the world modified their understandings of death and created new ways of dealing with the dead, in body and in spirit, as wars became deadlier and dying assumed an increasingly unfamiliar shape. Some of the questions we will consider in this class include:

- how is death represented in social memory during and after war?
- the changing ways of dying – what is a “good” death and what is a “bad” death on the battlefield and at home?
- how has the act of killing changed and how does it influence our understanding of death?
- how mourning practices change, both in the private and public sphere, as a consequence of war
- how do national commemorative practices interact with our private understandings of death and dying?
- in what kinds of spaces do the living and the dead interact?
- what elements of modern war foster these changes? Do all wars shape death and dying in the same way? What common features exist and what elements are culturally specific?

Prerequisite: None.

This course satisfies Humanities Topic 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 societal self-images. This course charts the rise and fall of the Age of Space 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, as well as providing an introduction to the historical origins of techno-nationalism, from the Cold War to today’s Space Race in Asia.

Prerequisite: None.

This course satisfies Humanities Topic Course.

HIST-SHU 226

5000 Years of Chinese History: Fact or Fiction?

Nowadays, the notion that China looks back on 5,000 years of history seems to be common knowledge. At first one might wonder: what is so special about that? There have been many advanced civilizations in ancient antiquity: Egypt, Babylonia, Greece, the Roman and Aztec empires are but a few examples that immediately spring to mind. On closer inspection, though, it is quite obvious that all of these civilizations have one thing in common: they no longer exist! China and Chinese culture, on the other hand, is still alive and kicking. It is the only civilization on the planet that claims to have developed for five millennia without interruption. But, is this really true? And, more importantly, where exactly does such an assertion come from? These are but two questions this course is going to address. Some readers might dismiss them as quixotic musings of an early China specialist. They would be utterly wrong, however, to assume that these issues have no relevance for modern-day China. Precisely because Chinese culture survived for such a long time many contemporary habits are firmly rooted in ancient traditions, whether we are aware of it or not.

Since most of us are largely ignorant of the actual repercussions of China’s enduring history, this course ultimately aims at disclosing them. This means that we are going to analyze historiographical records and compare them with archeological evidence. In order to get a sense how history was perceived at various historical stages, we are also going to spend some time with commentators of early Chinese texts. Finally, we will, of course, try to figure out how the practice of historiography and archeology influences the China we all live in – for the moment at least – today.

Prerequisite: None.

This course satisfies the following: GCS Elective; HUMN: Topics; 13-14 Global Thematic Hist; SSPC core.

HIST-SHU 231

WWII

The success of movies like Inglourious Basterds, The King’s Speech, and Pearl Harbor or television shows like Band of Brothers and Nazi Hunters has demonstrated that fascination with the era of the Second World War does not stop with scholars. The origins, nature, and effects of this conflict have continued to capture the imagination of the general public and historians. Both the barbarity and the heroism of this ‘total war’ have retained a central place in our historical consciousness, though in vastly different ways.

This course will examine the Second World War from a multi-faceted perspective. We will look at the social, cultural, military, and political contexts of the war from many national perspectives. An overarching goal of this course is to allow you to engage with some of the important historiographical debates that have emerged in past fifty years. Moreover, we will examine how these debates and the controversies that have ensued have shaped the way individuals and nations represent their wartime experiences.

Prerequisite: None.

This course satisfies Humanities 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.
Prerequisite: None.

HIST-SHU 250

China at the Center? An Exploration of Chinese Foreign Relations

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 'other'?) through the 19th century CE, that is to say the period when the Qing dynasty (1644-1911) was forced to interact with 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.

Prerequisite: None.

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.

Prerequisite: None.

This course satisfies the following: GCS Elective; HUMN: Topics; 13-14 Global Thematic Hist; STS core curriculum.

HIST-SHU 303

Histories and Politics of Noise

In this seminar, students will consider the idea that "noise" has a history, and that its history dates long before the industrial revolution's ratcheting up of noise levels due to heavy machinery and the reproduction and amplification of sound through electronic technologies. 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? This course explores noise's relationship to history and politics. By spending the semester reading, talking, and writing about noise, we will seek to comprehend it rather than contain it.

Prerequisite: None.

This course satisfies the following: HUMN: Crit Concepts; 13-14:other history

HIST-SHU 312

China Encounters the World

This is a lecture course on China's encounters with the world in the late 19th and 20th centuries. The course analyzes the age-old Chinese "Central Kingdom" self-image and how the image was overturned during modern times in face of Western and Japanese

challenges; it explores the Chinese “victim mentality” and its impact on China’s modern international experience; it examines China’s foreign policy issues in the context of its political, economic, social and cultural developments in broader terms; it also pays special attention to the role of “human agencies” in the shaping of historical processes.

Prerequisite: Nonethe

HIST-SHU 313

China Goes Global: How China and the World Changed Each Other

The course, combining question-oriented lectures, seminar-style discussions, and interactive reading, examines China’s “prolonged rise” by putting it into the larger context of its 20th-century “going global” experience characterized by crises, wars, revolutions and, finally, unprecedented reforms. The course will highlight the tortuous trajectory of the most important bilateral relations of our age—Chinese-American relations—and how and why it has been profoundly related to China’s going global experience. It will also explore what driving forces and dynamics has generated China’s rise, why it has to be looked upon as a complicated and prolonged process, and what opportunities and challenges it has presented to both China and the 21st-century world, and how they might be dealt with.

Prerequisite: None

HIST-SHU 325

The New Cold War History

This is a reading and research seminar with an emphasis on the “new “Cold War history—a scholarly phenomenon emerging in the 1990s, along with the end of the global Cold War and the new opportunities to conduct multiarchival and multi-source research for scholars of international history. Students in this class will be exposed to various new interpretations, new methods of research, and new ways of thinking associated with the new Cold War history studies. Readings in this class will be focused on the scholarship that has appeared since the early and mid-1990s. Students are required to write several books reviews and a comprehensive review essay, as well as to present and critique the comprehensive review essay in class. The ultimate purpose of the course is to help students take the Cold War as a useful reference to pursue a better understanding of the challenges facing the human race in the 21st century.

Prerequisite: None

HIST-SHU 329

Futures of the Twentieth Century

The present is only one possible outcome of the many ways in which it has been imagined in the past. While historians usually do not aim to predict the future, they have become increasingly interested in how societies and cultures projected their development in the past. While such scenarios are often fascinating in themselves, they are of particular historical interest as gauges and indicators of how societies understood themselves and evaluated their then present conditions. Largely chronologically organized, this course explores the future’s multifaceted history in twentieth-century Europe and the United States, from the emergence of ‘scientifiction’ in the 1920s to the ‘end of utopia’ during the crisis-ridden 1970s. Particular attention will be paid to ‘enhancements’ of the human body, futuristic technologies (flying cars, time machines, computers) and human habitats (the classless city of tomorrow, underwater settlements, space colonies).

Prerequisite: None.

HIST-SHU 341

European Religion from the Reformation to the Enlightenment

European Christendom exploded in the sixteenth century, creating a fragmented and fractious religious landscape that still marks Europe (and Christianity worldwide) to this day. In this undergraduate lecture course, students will examine the significant changes European Christendom experienced between the Protestant and Catholic Reformation through the Enlightenment, and will explore the impact of new religious dogmas, beliefs, practices, and institutions upon the broader order of European politics, society, and culture. The readings, which consist of both primary and secondary sources, will demonstrate that the religious changes in this period shaped not only the thinking of theologians and clergymen, but also affected the everyday lives of people throughout Europe. Furthermore, the course will examine how various denominations of European Christianity participated in Europe’s commercial, colonial, and imperial projects in the Americas, Africa, and Asia. Students will thus also consider the interactions, both within and beyond Europe, between European Christianity and other world religions.

Prerequisite: None.

HIST-SHU 351

From Human Sacrifices to Illicit Sex at a Funeral: A History of Violence and Crime in Ancient China

“The queen is suffering from a severe toothache; would sacrificing one hundred humans make it go away?”

This is but one among many references to human sacrifices in Shang period oracle bone inscriptions (13th century BCE) that were found at the Anyang site in Henan province. That these

were not empty rhetorical phrases is illustrated by hundreds of headless skeletons that came to light at the site. Yet, such seemingly senseless acts of violence were just the tip of the proverbial iceberg. Murder, theft, sexual misconduct were very much part of everyday life in early China. More importantly, though, crime and violence was by no means restricted to social outcasts but permeated all of Chinese society. Chinese emperors certainly were no less prone to atrocious behavior than petty criminals.

Thus, in this class we are going to analyze various kinds of crime and violence in order to answer two main (and many other) questions:

- a) Why exactly were humans (and the early Chinese in particular) violent?
- b) How exactly did violent behavior affect early Chinese society as a whole?

Prerequisite: None.

HIST-SHU 379

The Social Life of Things: Functions of Material Culture in Ancient Chinese Society and Beyond

When we look at inanimate things, we might ask ourselves: What do objects do? Sure, a watch tells us the time and a car takes us from point A to B. But is that really all they accomplish? Don't people also buy fancy things (and especially brand names) to make an impression on peers and passers-by? The hype surrounding the release of a new iPhone shows that we are well beyond the point that phones are just phones. For all their technical intricacies, high-end smartphones are just as much about "showing off" as anything else.

But why the need to "show off" in the first place? And more interestingly, is this a recent phenomenon or did people in ancient societies resort to similar strategies? If so, how exactly did they go about it? These are the three major questions this course is going to address. In order to answer them, we are going to explore several theories related to material culture studies, how societies are structured, and how objects functioned in early Chinese society.

Prerequisite: None.

HUMN-SHU 225

Topics in Asia-Pacific History

This course uses the geographic framework of the "Pacific Rim" to understand the historic connections between Asia and North America during the long 20th century. Traditionally, Asian history and U.S./ North American history have been treated as distinct areas of studies. While there is good reason for distinguishing these fields from one another, there are equally good reasons for looking at the intersection of them. Most importantly, history does not unfold within neat geographic boundaries. People, commerce, ideas, culture have all crisscrossed these geographic borders. To fully understand transnational history, then, we historians must also be willing to abandon tradition.

This course examines the emerging historiography on the linkages between Asia and North America. We will pay particular attention to the movement of labor and capital, and to a lesser extent the exchange of ideas and culture. This emphasis on labor and capital reflects my own bias as a historian, and I welcome debate on how we think about the historical forces creating transpacific connections. The secondary themes are changes in identity and citizenship, reconfiguration of family, and the rise of transnational social networks, which are the result of labor and capital circulations.

Prerequisite: None

HUMN-SHU 229

Masters of Asian Cinema

This course introduces students to the basic concepts and methods in film studies by focusing on a select number of eminent auteurs in Asian cinemas. Our objectives are many: first, we situate within their particular socio-historical contexts the masterworks by master-directors like Akira Kurosawa, Yasujiro Ozu, Zhang Yimou, John Woo, Wong Kar-wai, Hou Hsiao-Hsien, Sanjay Leela Bhansali, Mani Ratnam, and Deepa Mehta. In doing so, we learn the divergent developments between and within Japanese, Chinese, and South Asian film industries. We then analyze how these directors make various stylistic choices to address issues of kinship, nation, gender, historical memory, modernity, and globalization. Against the background of 20th century cross-cultural encounters, we also study the contributions of these auteurs to world cinemas and the cross-fertilization in style between these film masters.

Prerequisite: None.

HUMN-SHU 230

Topics in the Humanities: European Modernities and the Global Avant-Garde

Literature turns words into images, and images into words. Where do the sensory boundaries between literary and artistic media lie? We will read key texts on visual thinking and aesthetic experience across national traditions, from Greek philosophy to Chinese art, African modernism to American postmodernism. Combining close readings of novels, poetry, photography, and cinema with museum and exhibition visits, students consider the relationship between image and text, author and reader, perception and memory. Authors read include Sei Shonagon, Walter Benjamin, Virginia Woolf, Susan Sontag, Antoni Tàpies, Gao Xingjian, Teju Cole and others.

Prerequisite: None.

Topics in the Humanities: Aesthetics and Literature

Was there a global movement in the twentieth century we can call 'modernist'? While modernism has often been considered a primarily European phenomenon with global repercussions, this course seeks to explore various roots, cross-fertilizations, and constellations of 'modernisms' in their Latin American, Asian, and African aesthetic and cultural manifestations. The course introduces a transnational range of artistic, literary, architectural, scientific and cultural movements of the early twentieth century, reading works alongside theories of modernity and the avant-garde. Topics include the role of consciousness, perception and sensation; the experience of the modern city; representations of time and temporality; and stances on the artist as a political force in society. Authors read include Yeats, Achebe, Tagore, Proust, Woolf, Joyce, Borges, Tagore, Lu Xun, Kawabata, and others.

Prerequisite: None.

This course satisfies HUMN Topics.

Topics in the Humanities: European Modernities and the Global Avant-Garde

This course provides an overview of Asian American history and its relevance for contemporary issues. This course covers the Asian immigration in the 19th century, the rise of anti-Asian movements, the experiences of Asian Americans during WWII, the emergence of the Asian American movement in the 1960s, and post-1965 Asian immigration. Examines the role these experiences played in the formation of Asian American ethnic identity. This subject asks students to consider key issues such as racial stereotyping, media racism, affirmative action, the glass (or "bamboo") ceiling, the model minority stereotype, and anti-Asian harassment or violence.

Prerequisite: None.

This course satisfies HUMN Topics.

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.

Semiotics of Performance

This course explores the relationship between performance in media, film, theater, and art with modes of action in everyday life. How are genres of media distinguished from and modeled on everyday expressive practice? For instance, how do performance genres make use of voice, register, staging, imagery, and props that draw on or replicate social worlds outside the performance context? How are participation roles defined, distinguishing audiences from performers? How do performances come to be regarded as texts, and how do texts organize performances? Readings will draw on classic and contemporary work in semiotics, performance theory, and linguistic anthropology, analyzing media and art forms from around the world. Students will engage with the theoretical concepts and analytical models encountered in class by applying them to media forms, performances, or artworks of their own choosing.

Prerequisite: None.

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.

This course satisfies the following: GCS Elective; HUMN: Topics; 13-14 Global Thematic Hist; SSPC or CA core curriculum.

HUMN-SHU 269

Empires in World History

Throughout history, few people lived for very long in a polity that consisted entirely or even mainly of people with whom they shared a language and culture. Any examination of the variety of human cultures must take account of the political structures within which people tried to make their way, sometimes seeking higher degrees of autonomy, sometimes accommodating to rulers' authority, sometimes trying to extend their own power over others. Empires-polities which maintained and enhanced social and cultural distinction even as they incorporated different people-have been one of the most common and durable forms of political association. This course will focus on the comparative study of empires from ancient Rome and China to the present, and upon the variety of ways in which empires have inspired and constrained their subjects' ideas of rights, belonging, and power. The study of empire expands our ideas of citizenship and challenges the notion that the nation-state is natural and necessary. Students in this course will explore historians' approaches to studying empires. We will investigate how empires were held together-and where they were weak- from perspectives that focus on political, cultural, and economic connections over long distances and long time periods. Readings will include historical scholarship on the Roman, Chinese, Mongol, Ottoman, Habsburg, Russian, French, British, German, and American empires, as well as primary sources produced by people living in these and other imperial polities.

Prerequisite: None.

This course satisfies: Major: HUMN Topic.

HUMN-SHU 401

Humanities Capstone Seminar (4 credits)

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.

Open only to Humanities majors in the senior year.

Prerequisite: Senior Standing.

HUMN-SHU 402

Humanities Capstone Seminar (2 credits)

Students complete 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: HUMN-SHU 410 (Humanities Capstone Honors Seminar).

HUMN-SHU 410

Humanities Capstone Honors Seminar (2 credits)

This seminar introduces major honors candidates to research methods in the Humanities as preparation for the Honors Independent Study in the spring semester of the senior year. By the end of the course, students will have produced a well-formulated research question, methodological design, and bibliography, and will have identified a faculty supervisor for the spring semester independent study. Open only to seniors who have been admitted to honors candidacy in the Humanities.

Prerequisite: Senior Standing.

This course satisfies Humanities Honors Capstone.

HUMN-SHU 411

Humanities Honors Independent Study (4 credits)

Candidates for major honors conduct independent research under the supervision of a faculty member in the Humanities. Open only to seniors who have been admitted to honors candidacy in Humanities.

Prerequisite: HUMN-SHU 410 (Humanities Capstone Honors Seminar).

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.

Prerequisite: Must be approved by Area Leader and Academic Affairs.

LIT-SHU 225
Global Shakespeare

The substantive goal of Global Shakespeare will be to assess the influence—by way of translation, performance and criticism as an index to more general forms of cultural adaptation and appropriation—of “Shakespeare” as a global phenomenon. The scare quotes are meant to designate the Bard and his works, in the first instance as the product of the English Renaissance, but beyond that as a fund of “cultural capital” with its own global investment that continues to pay dividends after four centuries. More than any other “western” literary figure, Shakespeare has served as the metric by which subsequent ages have calibrated their own relationship to the dominant (artistic and national) culture he has come to represent. Thus we have the Shakespeare translation by Schlegel and Tieck, a classic of German romanticism; the Japanese Shakespeare of Kurosawa’s *Throne of Blood* (the film that repositions Macbeth somewhere between feudal- and post-Hiroshima Japan, with stylistic elements drawn from Noh drama); the post-colonial *Une Tempete* of the contemporary Afro-Caribbean writer Aimé Césaire; and a hip-hop Romeo and Juliet directed by Tian Qinxin. This last raises one question we will want to address, insofar the director claims that even though everything else has changed, not least the language, the spirit of Shakespeare has been preserved. What is this “spirit” that seems both to guarantee that whatever changes are wrought, some essential core remains that allows the director to claim that it’s still Shakespeare? This disembodied spirit- “Shakespeare” seem capable of moving effortlessly through time and space, coming to rest in ever-new habitations but always under the same name.

One way to think about the director’s claim is to ask what the word (translated as “spirit”) actually means to her in Chinese. This question focuses in turn on the pedagogical goal of the course. In addition to tackling the plays on the syllabus in English, the students will be asked to read the plays, alongside the English text, in whatever other language they possess—“Shakespeare” speaks Chinese, obviously, but also French, Spanish, Dutch, and even Hindi and Hungarian, among the many languages into which the plays have been translated. This side-by-side reading should go a long way toward alleviating the anxiety that ESL readers bring to Shakespeare, while at the same time offering a valuable tool for analysis at the micro-level. What are the nuances of “to be or not to be” when it becomes “Sein oder Nichtsein” (the verbs transformed into nouns)? Attention to small details may well lead to a wider perception of cultural difference. Students might be asked, as their research project, to investigate the significance of “Shakespeare” in their own country (on the model, but hardly to extent, of Alexander Huang’s Chinese Shgakespeares).

Foregrounding and at the same time alleviating the problem of language is one way of making for a more user-friendly Shakespeare. Another is to include international productions of the plays on film. A good resource for this is to be found at <HTTP://GLOBALSHAKESPEARES/MIT.EDU>. Furthermore, in order to allow for a careful reading of the plays, the list will be limited (as I see it now) to: Romeo and Juliet, Macbeth, Hamlet, Lear, and The Tempest.

Prerequisite: None.

LIT-SHU 245
Literature and Science in the Renaissance

The course—which might otherwise be called science and the imagination, or the imagination of science—has a center and a periphery. At its core, the “scientific revolution,” extends roughly from the 1540’s (the decade of Copernicus’s *De revolutionibus orbium coelestium*) to the 1680’s (the decade of Newton’s *Principia*). This is the narrative that describes the movement of what Donne calls, with much trepidation, the “new philosophy, the shift from the Ptolemaic view of a geocentric world to our modern understanding of the solar system. A central document in that history and on our list is Galileo’s *Starry Messenger* of 1610. But the same period also witnesses advances in mathematics (including the invention of perspective), physiology and anatomy (including the influential work of Vesalius), urban planning (the rationalized “ideal city”) and much more—all underpinned by a neo-skeptical turn in philosophy revealing deeper shifts in the concept of knowledge and of the empirical methods by which it is to be produced. Thus the works in the history of science by Kuhn, Shapin, and Popkin.

Taking in this broader view, we will be interested in Bacon’s *The New Atlantis*, which we will read both as a document in the history of the scientific method and, like the *Utopia* of Thomas More (which Bacon has at hand as he writes), and as a new kind of utopian fiction—“science fiction”—that we will follow into the works of Neville, Godwin, Wilkins, Cavendish, and Shakespeare. We will read Machiavelli’s *The Prince* as an inaugural document in what has come to be called political science, and a document entailing a revisionary account of history, fortune, and human agency. We will begin and end with Donne, including along with his “Songs and Sonnets” a careful reading of the “First Anniversary,” an “Anatomy of the World” which expands its meditation on the death of its nominal subject (the deceased 14-year-old daughter of a would-be patron) to consider the death of the world order as it was known, and the advent of a new world with “all coherence gone.”

Referencing the following books:

Thomas More, *Utopia* (Norton Critical ed., edited R.M Adams)
Niccolò Machiavelli, *The Prince* (Norton Critical ed., edited R.M. Adams)
Three Early Modern Utopias: Thomas More: *Utopia* / Francis Bacon: *New Atlantis* / Henry Neville: *The Isle of Pines* (Oxford World’s Classics, ed. Susan Bruce)
Francis Godwin, *The Man in the Moone* (Broadview, ed. Poole)

Shakespeare The Tempest (Norton Critical ed.)
Paper Bodies: A Margaret Cavendish Reader (Broadview, ed. Bowerbank and Mendelson)
Thomas S.Kuhn, The Copernican Revolution (Harvard)
Steven Shapin, The Scientific Revolution (Chicago)
Richard Popkin, The History of Skepticism: From Erasmus to Spinoza (California)
John Donne, Complete English Poems (Penguin, ed. Smith)
Galileo, Dialogue Concerning the two Chief World Systems (Modern Library paperback)
John Wilkins, Discovery of a World in the Moon

Prerequisite: None.

This course satisfies: Core Curriculum: STS; Major: HUMN Topic.

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.

This course satisfies HUMN Topics.

PHIL-SHU 70 (formerly HUMN-SHU 204)

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.

This course satisfies the following: Core: Alg Thinking; HUMN Survey.

PHIL-SHU 76

Epistemology

Considers questions such as the following: Can I have knowledge of anything outside my own mind—for example, physical objects or other minds? Or is the skeptic's attack on my commonplace claims to know unanswerable? What is knowledge, and how does it differ from belief?

Prerequisite: None.

This course satisfies HUMN Topics.

PHIL-SHU 80

Philosophy of Mind

Examination of the relationship between the mind and the brain, of the nature of the mental, and of personal identity. Can consciousness be reconciled with a scientific view of the world?

Prerequisite: None.

This course satisfies HUMN Topics.

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.

Prerequisite: None.

This course satisfies: Core Curriculum: STS; Major: HUMN Critical Concept Core 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.

Philosophy of Technology

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.

Ghosts, Gods, Buddhas

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

Prerequisite: None

This course satisfies the following: GCS Elective; HUMN Topics; SSPC core.

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: None.

This course satisfies the following: GCS: Dig China Stud; HUMN: Digital App; CA core.

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: variables, conditionals, iteration, functions, arrays and objects, will be explored using the Processing programming language. Processing has a simplified syntax and 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 not simply use that which has been provided to them. 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. Required Course.

Prerequisite: None.

This course satisfies the following: IMA: Required Course; PC/AT core.

INTM-SHU 120 Communications Lab

In this foundation course, designed to provide students with a framework to effectively communicate through digital means, students will explore the possibilities of digital media by successively producing projects that make use of digital images, audio, video, and the Web. Students learn in a laboratory context of hands-on experimentation, and principles of interpersonal communications, 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, and the basics of fundamental web languages HTML, CSS and JavaScript will be studied, to establish a diverse digital toolkit. Both traditional and experimental outputs, including online and interactive media platforms, will be explored. Weekly assignments, group and independent projects, as well as project reports will be assigned in each of the core areas of study.. Required Course.

Prerequisite: None.

This course satisfies the following: IMA: Required course; PC/AT core.

INTM-SHU 165 Talking Fabrics

This course will explore the history of textiles and how to communicate through the medium of fabric using new technologies. We communicate using fabric every day. The clothes we wear, which bags we carry our belongings in, and the economic and social price we pay for textiles speak volumes about our identities. The art of fabric-making entered human culture so early that we often use it for important metaphors. Our history is woven together by the tales we spin from our common threads. This course will cover basic textile crafts such as sewing, embroidery and patterning along with techniques on how to integrate textiles with electronic circuitry. New methods of fabric-making such as 3D Printing textiles and laser cutting fabrics will also be covered.

Prerequisite: None.

This course satisfies IMA Arts & Entertainment and Skill Development

INTM-SHU 209 This is the Remix

Now, more than ever, technology allows us to reshape existing content in order to create new messages and expressions. What does it mean to utilize "found media" in order to create new work -- and how can we use the process to comment on the status quo of our current cultural and social landscapes? This class explores remix, recontextualization, and reappropriation as artistic tools. We will examine current and past usage of the remix, from its well-known place in popular music to broader forms like YouTube mashups, cut-ups and text generators, Internet memes, culture jamming, and parody. Students will have the opportunity to experiment with both traditional and programmatic methods of remix, such as audio and video editing, by exploring Web APIs (YouTube, SoundCloud, and Echo Nest), and through the application of generative coding techniques. The class will also cover common legal issues surrounding remix culture, such as fair use, debate over current copyright laws, and the Creative Commons community and licensing system. All of these ideas will be further investigated through weekly reading assignments, class discussion and presentations, and the development of original remix projects utilizing the themes and techniques discussed in class.

Category: New Media & Entertainment

Prerequisite: INTM-SHU 120 (Communications Lab).

Animation: Traditional Techniques & Contemporary Practices**Prerequisite or Corequisite:** Communications Lab OR Interaction Lab

Contemporary animation is no longer constrained to the single flat screen; it can now be seen on surfaces of any shape and size. This course takes students from traditional animation techniques to contemporary outputs. In the first part of the course students will focus on traditional animation, from script to storyboard through stop-motion and character based animation. The course then examines outputs afforded by new technologies, such as interactivity, multiple screens, projection mapping, and virtual reality (VR). Drawing skills are not necessary for this course, however students will keep a personal sketchbook.

*Category: New Media & Entertainment**Prerequisite: None.***Unmanned Aerial Storytelling**

It used to be difficult to put eyes in the sky. But things are changing rapidly. From balloons, to DIY drones, pro quadcopters, and high resolution imagery from satellites orbiting Earth – we will explore how the fields of storytelling, journalism, and conservation are being transformed from above. These technologies are more accessible than you may think. In this class, students will investigate the regulations, technologies, and practice of drones for storytelling. Students will gain a conceptual understanding of this space through programming toy drones, and by designing and participating in a drone storytelling feature. Students will also learn how aerial imagery can be used in innovative and interactive forms of media.

*Category: New Media & Entertainment**Prerequisite: None.**This course satisfies IMA Major New Media and Entertainment Courses.***User Experience Design**

User Experience Design (UXD) is a design process focused on producing interactive products and systems that provide a high level of satisfaction to users through concern for human factors such as ergonomics, accessibility, and usability. User experiences unfold over time, and can be crafted to an extent, however a user's will and other unpredictable circumstances together shape the final outcome. Students in this class will critique existing projects, products, and services, and learn to create more successful user experiences based on real-world development processes, in addition to the application of industry standard techniques and tools. Students will create design concepts and mockups, develop user personas, wireframes, user experience sketches and flows, and ultimately video prototypes. While UXD principles are most often used to create commercial products such as hardware devices and software applications, the concepts and skills prove equally useful in the development of participatory art and performance projects.

*Category: Art & Design**Prerequisite: None.**This course satisfies IMA Major Art and Design Course Elective.***Creating Immersive Worlds**

This introductory course will focus on building virtual worlds and understanding what makes them compelling experiences for others. Throughout the course, students will become familiar with critical concepts such as play testing and object-oriented programming in addition to developing proficiency in software tools such as Unity (3D game engine), Blender (3D modelling), Adobe Photoshop (texturing) and GitHub (source code control). Students will work in collaborative teams to create interactive virtual worlds.

*Category: New Media & Entertainment**Prerequisite: None.**This satisfies IMA Major New Media and Entertainment Courses.***Introduction to Robotics**

Since the beginning of civilization, humans have fantasized about intelligent machines sensing and acting autonomously. In this course students 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, in addition to designing and building 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 team work, the objective of this course is to share in the excitement of robotics by enabling students to make their own creations.

*Category: Experimental Interfaces & Physical Computing**Prerequisite OR Corequisite: Interaction Lab**This course satisfies IMA Major Experimental & Physical Computing Courses.*

Media and Participation

Making words and images public used to be difficult, complex, and expensive. Now it's not. That change, simple but fundamental, is transforming the media landscape. A publisher used to be required if you wanted to put material out into the public sphere; now anyone with a keyboard or a camera can circulate their material globally. New, cheap forms of communication have opened the floodgates to a massive increase in the number and variety of participants creating and circulating media. This change, enormous and permanent, is driving several effects in the media landscape today. This course covers the transition from a world populated by professional media makers and a silent public to one where anyone who has a phone or a computer can be both producer and consumer. This change, brought about by the technological and economic characteristics of digital data and networks, is upending old industries -- newspapers, music publishing, moviemaking -- faster than new systems can be put in place. The result is chaos and experimentation as new ways of participating in the previously sparse media landscape are appearing everywhere. This course will provide a brief history and economics of the previous media landscape, the design of digital networks that upend those historical systems, and new modes of participation for sharing words, images, audio and video. We will look at the dynamics of both English-language services, such as Twitter, Facebook and Instagram, and, in translation, Chinese-language services such as Sina Weibo, Weixin and QQ. The class will consist of class discussion around readings and lectures, in-class presentations and analysis of new uses of media that you observe (or participate in) outside class. There will be two written analyses of the media landscape, one at mid-term and one final paper.

Category: Seminar

Prerequisite: None.

Topics in Computation & Data: Nature of Code

Can we capture the unpredictable evolutionary and emergent properties of nature in software? Can understanding the mathematical principles behind our physical world help us to create digital worlds? This class focuses on the programming strategies and techniques behind computer simulations of natural systems. We explore topics ranging from basic mathematics and physics concepts to more advanced simulations of complex systems. Subjects covered include physics simulation, trigonometry, fractals, cellular automata, self-organization, and genetic algorithms. Examples are demonstrated in native JavaScript using p5.js. Much of the class time will be dedicated to in-class exercises and self-study as the course is available online through a video series and textbook.

Category: Computation & Data

Prerequisite: INTM-SHU 101 (Interaction Lab) or INTM-SHU 120 (Communications Lab).

This course satisfies IMA Major Computation and Data Courses.

Topics in Computation & Data: Generative Language

This class examines the use of text as source material for generative art. The semester will begin with cutting up and remixing text utilizing basic find, replace, and randomization, and will then move on to topics such as regular expressions, Markov generators, Internet bots, natural language processing, and sentiment analysis. We will also look at using and analyzing data from popular social media APIs, as well as scraping and cleaning raw HTML, in order to generate new content. Students will create 3 text-based projects over the course of the semester, in addition to smaller weekly homework assignments, reading, and class discussion. The course will be taught in the Python programming language.

Category: Computation & Data

Prerequisite: Communications Lab or Interaction Lab

Topics in Computation & Data: The Code of Music

Can we capture the unpredictable evolutionary and emergent properties of nature in software? Can understanding the mathematical principles behind our physical world help us to create digital worlds? This class focuses on the programming strategies and techniques behind computer simulations of natural systems. We explore topics ranging from basic mathematics and physics concepts to more advanced simulations of complex systems. Subjects covered include physics simulation, trigonometry, fractals, cellular automata, self-organization, and genetic algorithms. Examples are demonstrated in native JavaScript using p5.js. Much of the class time will be dedicated to in-class exercises and self-study as the course is available online through a video series and textbook.

Category: Computation & Data

Prerequisite: INTM-SHU 101 (Interaction Lab) or INTM-SHU 120 (Communications Lab).

This course satisfies IMA Major Computation and Data Courses.

Developing Web

The Web now permeates most aspects of modern existence, and as a result, web development

has become an indispensable skill complementary to many diverse disciplines. Students in this course will gain fluency in essential web languages and development approaches through a series of exercises aimed at touching on many important aspects of today's multi-faceted World Wide Web – by building responsive websites, thrilling video games, and dynamic single-page web applications that use microcontrollers and sensors as a source for data. Design principles will be explored through corresponding HTML and CSS structures, and will be based on a consideration for typography, images, audio and video. Dynamic data and interaction will be investigated through client-side scripting techniques utilizing JavaScript, including the popular jQuery and jQuery Mobile frameworks. Server-side scripting techniques will be introduced using the PHP based Slim, a framework grounded in the principles of REST (Representational State Transfer). Data storage and retrieval will be made possible through the application of the HTML5 Local Storage specification as well as MySQL databases. And the use of universal data exchange formats, JSON and XML, will be part of an ongoing experimentation with third party APIs (Application Programming Interfaces) such as Firebase, Google Maps, Twitter, Xively and YouTube.

Prerequisites: None.

Category: Computation & Data

INTM-SHU 235

Topics in Art & Design: Digital Fabrication (2 credits)

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.

Prerequisite: None.

This course satisfies: Major: IMA Art & Design Electives.

INTM-SHU 236

Topics in Art & Design 4pt Interactive Installation (4 credits)

Interactive installations leverage the viewer to create an experience that is more than just the sum of its components. What technologies, techniques, and fabrication skills can we leverage to achieve the "wow" factor and create enthusiasm and engagement? We will examine what sustained creative practice we can achieve by building compelling artistic content in a physical space. This class will utilize architecture and space planning, electronics, mechanical construction, cutting edge technologies and design ideals to create prototype artistic installations. Short term assignments will culminate in a largescale final project.

Prerequisite: Interaction Lab.

This course satisfies: Major: IMA Art & Design Electives.

INTM-SHU 245

Topics in Experimental Interfaces & Physical Computing: Animatronics

Course Description: Assistive technology is a term that includes a wide variety of technologies for people with disabilities. This two-point survey course is designed to provide students with an overview of the field of assistive technology. Field trips, readings, and guest speakers will provide students with an understanding of current research and development as well as processes used in determining appropriate technologies. Weekly assignments and a final research project.

Category: Physical Computing & Experimental Interfaces

Prerequisite OR Corequisite: INTM-SHU 101 (Interaction Lab).

This course satisfies IMA Major Experimental & Physical Computing Courses.

INTM-SHU 245

Topics in Experimental Interfaces & Physical Computing: Musical Expression (NIME)

This course will focus on designing, creating and performing with musical instruments that utilize recent discoveries in interactive media in order to explore the limits of human expression. Over the semester, students are asked to research examples of contemporary work by creators of musical interfaces and discuss a wide range of issues facing technology in the performing arts. Readings and case studies will provide background for class discussions on the theory and practice of designing gestural controllers for musical performance. Students will invent and prototype a complete system encompassing musical control, mapping input to sound, and the creation of sound itself. Interaction Lab is a prerequisite, but prior performing experience is not required. The performance discipline, being an inherently collaborative arena, places heavy emphasis on teamwork. An open mind to work with other artists, technologists and creative leaders is a must. The class will culminate in a performance where students will play their instruments live.

Category: Experimental Interfaces & Physical Computing

Prerequisite: INTM-SHU 101 (Interaction Lab).

INTM-SHU 245

Topics in Experimental Interfaces & Physical Computing: Intro to Assistive Technology

Assistive technology is a term that includes a wide variety of technologies for people with disabilities. This two-point survey course is designed to provide students with an overview of the field of assistive technology. Field trips, readings, and guest speakers will provide students with an understanding of current research and development as well as processes used in determining appropriate technologies. Weekly assignments and a final research project.

Prerequisite: INTM-SHU 101 (Interaction Lab).

This course satisfies 2 credits of the Experimental Interfaces and Physical Computing Courses category for the IMA major.

INTM-SHU 246

Topics in Experimental Interfaces & Physical Computing - Kinetic Interfaces

Students in this course will use computer vision and motion tracking tools and techniques to create kinetic interfaces that exploit the body's capacity for movement to control software and hardware systems. The applicability of kinetic interfaces to practical as well as creative applications will be investigated as students are challenged to design their own solutions. Webcams, the Leap Motion Controller and the Microsoft Kinect will all be considered as input devices. Students will be introduced to the topics of pixel manipulation, as well as face, hand, blob and skeletal tracking. And Projection mapping, a technique that turns surfaces within an environment into dynamic display surfaces, will be explored as an output method.

Category: Experimental Interfaces & Physical Computing

Prerequisite: INTM-SHU 101 (Interaction Lab).

INTM-SHU 246A

Topics in Experimental Interfaces & Physical Computing: Network Everything

This course explores the possibilities and challenges of designing physical devices that can communicate with each other over network interfaces. Through weekly readings, class discussions, and a series of projects, students will make physical objects that talk to each other over distance. Various protocols such as Bluetooth, Zigbee, WiFi, and GSM/GPRS are used in the context of creating novel "smart" devices.

Category: Experimental Interfaces & Physical Computing

Prerequisite: Interaction Lab (INTM-SHU 101).

This course satisfies: IMA Experimental Interfaces & Physical Computing; 13-14: Skill Development.

INTM-SHU 249

Street Life & Food in the 21st Century

This course uses the theory and practice of 'deep mapping' in order to investigate Shanghai's shifting street food landscape and transforming culinary neighborhoods.

Street food, street markets, street culture and street life are an integral part of the liveliness and livability of the 21st century city. This course examines this topic by focusing on the following questions: What room is there for itinerant vendors and informal markets in Shanghai's vision of the future metropolis? How is Shanghai working to both integrate and exclude its migrant population? How can we best understand and analyze the processes of urban gentrification? What is the relationship between Shanghai's street food and a global 'foodie' culture? How do Shanghai's small restaurants and mobile carts contribute to the city's attempts to provide safe, affordable and nutritious food for its ever-growing population?

Category: Seminar

Prerequisite: None.

INTM-SHU 251H

Making Maker Education

Sharing and learning new skills, knowledge or practices are a critical part of the growing Maker movement. Makers engage in teaching and learning activities through workshops, mentoring and by collaborating with peers. This course explores how teaching/learning in the Maker context can be more fun, more effective and create richer learning experiences.

Students will be free to explore making as a learning activity that uses high-tech (programming, arduinos, sensors etc), low-tech (basic electronics, power tools etc) or no-tech (hand tools, cardboard etc) approaches. A portion of the course will be devoted to integrating the arts (music, drama, visual arts) into learning activities that revolve around technology and science. The primary focus of this course will be on practice. Students will create and run learning activities for their target audience, consistently improving the modules based on reflection. Students will also be expected to observe learning activities designed by their peers and provide feedback.

Category: Seminar

Prerequisite: None.

This course satisfies IMA Seminars.

The Minimum Viable Product

Increasing possibilities brought about by emerging forms of technology and decreasing costs of connecting people to things have not only enabled innovative human-centered design, but also opened the door to new business models and products. Experimentation and calculated risk taking are keys to successfully harnessing the possibilities of today's most cutting-edge technologies and innovative methods to first build, understand and then redefine how humans and products interact.

In this 7 week course, student 'co-founders' will conceive of and produce a new media, physical or technology product designed to delight their customers while also allowing them to accelerate and validate a business model. Students will 'get out of the classroom' and put these products into potential customers' hands. The course will touch upon topics such as how to design a minimum viable product, design a business model, talk and work with customers, and develop a product community.

Category: Business of Interactive Media Course

Prerequisite: None.

This course satisfies IMA Major Business and Emerging Media Courses.

Topics in the Business of Emerging Media: Shenzhen Style

This course will examine opportunities and challenges facing firms as they sell to China's rapidly growing consumer class. Students will learn in the classroom via mini-reviews of business fundamentals and lessons on product topics. Out of the classroom, students will learn by 'fishing where the fish are,' and will undertake fieldwork in Shanghai at electronics markets, malls, and other retail outlets. Students will conduct interviews during their fieldwork in order to determine user needs and desires in the area of consumer electronics and, from this information, they will specify the requirements for a new electronics product. The course will culminate in a two-day trip to Shenzhen where students will take a crash course in lean manufacturing and will work with real product designers and factories to build their new product.

Category: Seminar

Prerequisite: None.

This course satisfies IMA Major Business and Emerging Media Courses.

Generating and Expressing Data

Human beings are producing, consuming and sharing data at any given moment. However, what kinds of data are meaningful to us? How do we capture and collect that data? What are the best ways to present it? What stories do we want to tell with data? This course will explore these questions and more. Students will learn basic techniques for data collection and filtering. Student projects can be digital, physical, visual, musical, or (with approval) take any form imagined.

Category: Computation & Data

Prerequisite: None. Corequisite: Interaction Lab

Topics in New Media & Entertainment: Video Games

This course satisfies following: IMA: new media & entertainment.

This course is reserved for IMA majors and it will be open to everyone beginning on April 18.

This course focuses on video game design and development using Blender, a multi-purpose 3D computer graphics tool, and Unity, a popular 3D game engine. Students will learn the basics of 3D modeling, animation, shaders and materials, as well as the asset pipeline for Blender in the first 7 weeks. Students will apply these skills to create a 3D animation project for the midterm. The second half of the class focuses on scripting and game development using Unity. Students will produce an interactive 3D game for their final projects. Class time will be split between discussions of video games and related media (including game history, mainstream and indie games, art games, and other interactive projects), presentation and critique of student work, as well as demonstrations of Blender and Unity.

Prerequisite: None.

This course satisfies IMA Major New Media and Entertainment Courses.

Topics in New Media & Entertainment: Locative Media

With the rise of mobile computing platforms such as smart phones and tablets, location has suddenly become a key element in the production and consumption of media. In this online course, designed for NYU Shanghai Interactive Media Arts majors studying abroad, students will be encouraged to simultaneously explore their unique study away site, as well as to consume, research, critique, and create location-based media for mobile devices. Students will be introduced to GPS (Global Positioning System) technologies through activities such as geocaching and GPS drawing. We will next investigate geocoding, geotagging, and geofencing through the application of JavaScript mapping platforms CartoDB and Google Maps. Students will then explore an emerging technology known as Bluetooth Beacons, which can be used to create custom positioning systems and to facilitate location awareness in mobile devices.

Students will be asked to then produce, as a final project, a game that engages participants in a location or locations, as well as in locative media, which can take the form of photos, audio, video, and / or animation.

Note: This is an online course featuring both synchronous and asynchronous learning opportunities. Registration is limited to IMA Majors studying at NYU's global sites other than New York or Abu Dhabi. Those planning to enroll should contact Professor Matthew Belanger <mb1065@nyu.edu> for permission to enroll.

Note that the course time is based on China Time, so you need to adjust for the location's time zone where you are studying.

Prerequisite: None.

This course satisfies IMA Major New Media and Entertainment Courses.

INTM-SHU 280

Topics in New Media & Entertainment: Digital Sculpting for Facial Animation

The course aims to explore computer art creation through sculpture-based facial animation. Anatomy of the face and traditional clay sculpting will get introduced at the beginning. Then you will learn from the scratch of the digital modeling by using your face as the subject. Your low-poly face model will get further enhanced by digital sculpting. The final project will be a conceptual piece utilizing your digital face as the medium.

Category: New Media & Entertainment

Prerequisite: Communications Lab.

INTM-SHU 280A

Topics in New Media & Entertainment: Augmented Reality Storytelling

Prerequisite: None.

This course satisfies IMA Major New Media and Entertainment Courses.

INTM-SHU 280A

Topics in New Media & Entertainment: Interactive Storytelling

This course satisfies IMA Major New Media and Entertainment Courses

INTM-SHU 280B

Topics in New Media & Entertainment: Exploring & Creating Sonic Environments

Course Description: Through increased awareness and by tapping into their imagination, students in this class will be asked to create hybrid works of art and media. Students will be exposed to deep listening techniques to increase mindfulness; Expanded Cinema, an influential book by Gene Youngblood that helped to establish video as a medium for art; dance and movement research; as well as various emergent media so that they develop a truly interdisciplinary approach to their creative practice.

Prerequisite: INTM-SHU 120 (Communications Lab).

This course satisfies IMA Major New Media and Entertainment Courses.

INTM-SHU 280B

Topics in New Media & Entertainment: Intermedia

Through increased awareness and by tapping into their imagination, students in this class will be asked to create hybrid works of art and media. Students will be exposed to deep listening techniques to increase mindfulness; Expanded Cinema, an influential book by Gene Youngblood that helped to establish video as a medium for art; dance and movement research; as well as various emergent media so that they develop a truly interdisciplinary approach to their creative practice.

Category: New Media & Entertainment

Prereq: Communications Lab

INTM-SHU 280B

Topics in New Media & Entertainment: Interactive Documentary

This course will explore the creative potential of making nonfiction stories for digital platforms. Students will be introduced to a range of methodologies and tools for making interactive, participatory and immersive narratives including 360 video and VR platforms. Class time will be divided into screenings of documentary work, discussions on nonfiction storytelling and related media (including photography, video games, animation, comics, podcasts, soundwalks), and production time. There will be field trips, guest lecturers and student presentations. Students will be introduced to traditional and experimental documentary forms and will learn film/video/audio production methods from research to production to post-production. It is highly recommended that students come with a specific project or subject matter in mind. There will be two shorter assignments and one final project.

Category: New Media & Entertainment

Prerequisite: Communications Lab

Topics in New Media & Entertainment: Staging Fright

Haunted houses. Scary movies. Ghost stories. What is fear and why do we sometimes seek to induce it? This course will cover the challenges and possibilities of creating and incorporating interactive media in live and unpredictable environments in order to incite the fear response. Students will explore fear as an emotional reaction and also as a method for expressing certain ideas. Technologies, new and old, that attempt to measure the physiological processes behind being afraid will be explored and discussed. Students will be expected to analyze movies, games and other media in the horror and thriller genres so that they can better paint a picture of how fear works. Creating programming interfaces and physical computing props will be the primary vehicles for the class.

Category: New Media & Entertainment

Prerequisite: Interaction Lab

Fairy Tales for the 21st Century

Fairy tales, myths, and stories of magic have always served as a way for both children and adults to make sense of the unpredictabilities of the world around them. How do these stories serve us today? How do new technologies allow us to reinterpret them so that they have new meaning for our times? Through readings, weekly exercises, and a final project, students in this course will explore the historic role and structure of fairy tales as well as the potential contemporary frameworks that allow us to entertain the impossible. Students will work with stories of their choosing however we will examine their implementation through traditional material and book art techniques, as well as projection mapping, 3D and VR (using Unreal Engine.)

Prerequisite: INTM-SHU 120 (Communications Lab).

This course satisfies IMA Major New Media and Entertainment Courses.

Seminar Topics Science Fiction Cinema

This course is based on an analysis of Science Fiction films (and related readings). Each term the course will explore a particular theme (e.g. time & technology; memory & identity etc.). In Fall 2016 we will focus on the emergence of technological intelligence and the possibility of machinic consciousness.

Prerequisite: None.

This course satisfies: Major: IMA Seminars.

Seminar Topics: Political Uses of Social Media

Social media tools, such as Twitter, Weibo, Facebook, or YouTube, offer users two new capabilities. First, they let amateurs publish material without professional intermediaries. Second, they provide tools for those users to coordinate their actions, online and off. This increase in both freedom of speech and of assembly affects several areas of contemporary life; one of the most important is the public sphere, that part of society in which political issues are argued over.

For most of its existence, the public has been represented in the public sphere only by proxy, with the conversation managed by professional media outlets who decided which information and opinions should be distributed. Direct participation by citizens creates a staggering expansion in the volume and range of opinions being expressed, and dramatic improvement in the former audience's ability to engage in collective and often insurgent action.

In this course, we will discuss how groups typically excluded from the political process use social media to pursue their goals. We will pay particular attention to the use of social media to affect interactions between citizens and governments, discussing interventions or events like the Green Uprising in Iran, the Arab Spring, and various versions of the Occupy movement. We will discuss both the novel political capabilities offered by social media -- rapid coordination among dispersed groups -- and their common weaknesses -- difficulty in providing sustained political action over long periods.

Category: Seminar

Prerequisite: None. IMA: Seminar; and STS Core Req; This course satisfies STS Core Req.

Seminar Topics: Speculative Fictions

This course satisfies IMA Seminar and Creative Writing Minor. It is cross-listed with CRWR-SHU 200A. Half of the spaces are reserved for IMA majors until November 21.

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).

Prerequisite: None.

INTM-SHU 400
Capstone Studio - IMA

The IMA Capstone Studio course asks students to develop three components: 1) an interactive project and documentation, 2) a research paper, and 3) a personal portfolio.

If you are a senior expecting to graduate with an IMA major, please contact either Matt Belanger (mbl1065@nyu.edu) or Marianne Petit (marianne.petit@nyu.edu) for permission to enroll.

Prerequisite: None.

This course satisfies: IMA Senior Thesis.

INTM-SHU 997
Independent Study

Students majoring in IMA 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 have a study proposal that is approved by an IMA professor. Students are expected to spend about ten to twelve hours a week on their project for 4 credits.

Prerequisite: Must be approved by Area Leader and Academic Affairs.

Mathematics

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 and matrix operations are also covered.

Prerequisite: Placement via NYU SH Mathematics Placement Examination.

This course satisfies Math core curriculum.

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, proof, 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.

This course satisfies Math core curriculum.

MATH-SHU 121 **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: Placement via NYU SH Mathematics Placement Examination or a grade of C or better in MATH-SHU 009 (Precalculus).

This course satisfies: Required Math course; Math core curriculum.

MATH-SHU 123 **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 of C or better in MATH-SHU 121 (Calculus).

Equivalent to MATH-UA 123, MATH-AD 112.

This course satisfies: Required Math course; Math core curriculum.

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: Grade of C or better in Math-SHU 121 (Calculus) or 201 (Honors Calculus).

Equivalency: This course counts for MATH-UA 140.

This course satisfies: Required Math course; Math core curriculum.

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 systems of linear equations, matrices, LU decomposition, determinants, vector spaces, linear independence, basis and dimension, subspaces and quotient spaces, linear transformations, eigenvalues and eigenvectors, Jordan canonical forms, inner products, orthogonality, quadratic forms, extrema of functions, and symmetric and positive matrices.

Prerequisite: Placement on NYU SH mathematics placement exam.

Co- or pre-requisite: MATH-SHU 201 (Honors Calculus).

This course satisfies: cconstrained Math Elective/ Required Honors Math course; Math core curriculum.

MATH-SHU 142**Honors Linear Algebra II**

This course is a continuation of Honors Linear Algebra I. Topics covered include eigenspaces, multiplicities of eigenvalues, diagonalization, the Schur decomposition theorem, inner product spaces, the Gram-Schmidt process, orthogonality, adjoint maps, spectral theory, self-adjoint, normal, and unitary maps, bilinear forms, the Cholesky theorem, singular value decomposition, pseudoinverses, least-squares solutions via normal equations, ideals of polynomials, reducibility of maps, nilpotence, the Jordan decomposition theorem, minimal polynomials, the Penrose-Frobenius theorem, and stochastic matrices. Examples covered from applications include data compression, optimization, QR factorization of least squares approximation, solutions of simultaneously coupled polynomial equations, determination of the critical temperature of a superconductor, and image compression via singular value decomposition.

Prerequisite: Grade of C or better in MATH-SHU 141 (Honors Linear Algebra I).

Equivalent to MATH-UA 142.

This course satisfies: constrained Math Elective/ Required Honors 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 enter 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 of C or better in MATH-SHU 121 (Calculus) OR 201 (Honors Calculus) and MATH-SHU 140 (Linear Algebra).

This course satisfies: Honors Math Electives, Math Electives; Math core curriculum.

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: Grade A or A- in math-shu 121 (calculus) OR Placement via NYU SH Mathematics Placement Examination.

This course satisfies Honors Math Requirement; Math core curriculum.

MATH-SHU 233**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 approximation, random variables, probability distributions, generating functions, and Markov chains and their applications.

Prerequisite: Grade of C or better in MATH-SHU 328 (Honors Analysis I) and MATH-SHU 140 (linear algebra).

Equivalency: This course counts for MATH-UA 233.

This course satisfies: constrained Math Electives/ Required Honors Math course; Math core curriculum.

MATH-SHU 234**Mathematical Statistics**

This course is an introduction to the mathematical foundations and techniques of modern statistical analysis for the interpretation of data in the quantitative sciences. Topics covered include the mathematical theory of sampling, normal populations and distributions, Chi-squared, t, and F distributions, hypothesis testing, sequential analysis, correlation, regression, analysis of variance, and applications to the sciences.

Prerequisite: Grade of C or better in MATH-140 (linear algebra), MATH-123 (multivariable calculus) and MATH-235 (probability & statistics).

This course satisfies Honor Math Elective and Math Elective.

MATH-SHU 235
Probability and Statistics

This course comprises a combination of the theory of probability and the mathematical foundations 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: Grade of C or better in MATH-SHU 121 (Calculus) and 140 linear algebra. Not open to students who have taken MATH- 233 (Theory of Probability) and/or MATH-UA 234 (Mathematical Statistics)

Equivalency: This course counts for MATH-UA 235.
This course satisfies Required Math course.

MATH-SHU 241
Number Theory

This course builds on the ideas of abstract algebra, but also employs analytic techniques. Topics include valuations, Dedekind domains, Minkowski's theorem, ramification, the Riemann-Roch theorem and Riemann-Hurwitz formula, connections to Riemann surfaces and algebraic curves, reciprocity, zeta functions, and the prime number theorem.

Prerequisite: Grade of C or better in MATH-SHU 349 (Abstract Algebra I).

MATH-SHU 250
Mathematics of Finance

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: MATH-SHU 123 (Multivariable Calculus) AND 233 Theory of Probability (or 235 Probability and Statistics).

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 of C or better in MATH-SHU 123 (Multivariable Calculus) and MATH-SHU 140 (Linear Algebra), or MATH-SHU 141 (Honors Linear Algebra I) and MATH-SHU 329 (Honors Analysis II).

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 of first-order differential equations (linear and non-linear), stability, higher order differential equations, Series Solutions of second order linear differential equations, Laplace transform and numerical methods, nonlinear systems.

Prerequisite: Grade of C or better in MATH-SHU 121 (Calculus) and 140 (Linear Algebra) or MATH-SHU 141 (Honors Linear Algebra I) and 201 (Honors Calculus).

Equivalency: This course counts for MATH-UA 362.

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 of C or better in MATH-SHU 262 (Ordinary Differential Equations) or 362 (Honors Ordinary Differential Equations).

Equivalency: This course counts for MATH-UA 263.

MATH-SHU 265
Linear Algebra and Differential Equation

This course satisfies Data Science Required, Math Required, EE Required, CHEM Additional Required, PHYS Additional 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 continuous, and applications to fluid flow.

Prerequisites: Grade of C or better in MATH-SHU 123 (Multivariable Calculus) and MATH-SHU 140 (Linear Algebra), or MATH-SHU 141 (Honors Linear Algebra I) and MATH-SHU 329 (Honors Analysis II).

Equivalency: This course counts for MATH-UA 282.

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 of C or better in MATH-SHU 201 (Honors Calculus).

Equivalency: This course counts for MATH-UA 328.

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-140 (linear algebra).

Equivalency: This course counts for MATH-UA 329.

This course satisfies: Honors MATH Required, MATH Constrained Math Electives

MATH-SHU 339**Real Variables**

This course is a continuation of the analysis sequence with a focus on measure and function spaces. Topics covered include Lebesgue measure and integration, abstract measure spaces, Lebesgue differentiation, the Radon-Nikodym theorem, Fubini's theorem, Lp and Hilbert spaces, the Riesz representation theorem, and Fourier series.

Prerequisite: MATH-SHU 328 (Honors Analysis I) or 329 (Honors Analysis II). (This is a high level course in analysis which requires a very good background in proving theorems. Students who did not have a high grade in Honors Analysis I or Honors Analysis II are strongly encouraged to consult the course instructor to see whether they have enough background.)

This course satisfies: Honor Math Electives; Math Electives.

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: MATH-140 (Linear Algebra) AND MATH-SHU 233 (Honors Theory of Probability)

This course satisfies: Honor Math Electives; Math Electives.

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 characterisation by the Wronskian), Series Solutions of second order linear differential equations (ordinary points, proof of Fuchs Theorem, regular singular points and indicial equation), Laplace transform and numerical methods, nonlinear systems, boundary value problems.

Prerequisite: Grade of C or better in MATH-SHU 121 (Calculus) and 140 (Linear Algebra) or MATH-SHU 141 (Honors Linear Algebra I) and 201 (Honors Calculus).

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 of C or better in MATH-SHU 329 (Honors Analysis II).

MATH-SHU 997

Independent Study: 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: Must be approved by Area Leader and Academic Affairs.

Neural Science

NEUR-SHU 100

Math Tools for Behavioral 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 and/or Foundations of Biology II (or permission by the instructor)

NEUR-SHU 160

Introduction to Brain and Behavior

The relationship of the brain to behavior, beginning with the basic elements that make up the nervous system and how electrical and chemical signals in the brain work to effect behavior. Using this foundation, we examine how the brain learns and how it creates new behaviors, together with the brain mechanisms that are involved in sensory experience, movement, hunger and thirst, sexual behaviors, the experience of emotions, perception and cognition, memory and the brain's plasticity. Other key topics include whether certain behavioral disorders like schizophrenia and bipolar disorder can be accounted for by changes in the function of the brain, and how drugs can alter behavior and brain function.

Prerequisite: None.

NEUR-SHU 200

Topics: Neurobiology of Hearing

The general aim of the course is to provide an overview on neuronal processing in the central auditory system. The course will take a functional approach by studying what is known about how the auditory system accomplishes the two major jobs that it has to do when it hears a sound: identify what that sound is and where it comes from. Like other sensory systems there is good evidence that these jobs are done by parallel pathways using specialized circuitry. So for example, the largest synapse in our brain is located in the pathway that localizes sound. It seems likely that this highly unusual synapse has evolved from the particular demands of localization, which requires temporal precision on the order of tens of microseconds. The course will consist of a combination of lectures and discussion of primary literature, which will be a rather personal account. Most weeks there will be two papers to read with an average of 15-20 pages. Students will be assigned to present papers each week. There will also be a term paper on a topic in the course that is due at the end of the semester. The final grade will be determined by the oral presentations of papers (30%) and the term paper (70%) The course fills a need to cover a sensory system that is not presently taught at NYU.

Prerequisite: NEUR-SHU 201 (Intro to Neural Science).

NEUR-SHU 201

Introduction to Neural Science

Introductory lecture course covering the fundamental principles of neuroscience. Topics include principles of brain organization, structure and ultrastructure, 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 the cerebral cortex, and modeling of neural systems.

Prerequisite: CCSC-110 (Foundations of Science 4 Biology) & Corequisite: BIOL-SHU 22 (Foundations of Biology II)

This course satisfies: Required NS Course; STS core.

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: CCSC-114 (Foundations of Science 6 Physics) & NEUR-251 (Behavioral & Integrative Neuro).

This course satisfies: Required NS Course; STS core.

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.

Prerequisites: NEUR-SHU 201 (Introduction to Neural Science) or PSYC-SHU 101 (Introduction to Psychology). The prerequisite can be waived based on the student's background. Contact the course instructor directly for this request.
This course satisfies: Required NS Course.

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-201 (Introduction to Neural Science).
This course satisfies: Required NS Course.

NEUR-SHU 261

Special Topics: 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.
This course satisfies NS Elective.

NEUR-SHU 301

Honors Seminar

Provides supervised research activities in laboratories connected with the Center for Neural Science. Undergraduates are matched with a graduate student or faculty member working in an area of interest to the student. Students gain experience in many aspects of research and attend regular meetings to discuss recent advances in neuroscience and research-related issues.

Prerequisite: None.

NEUR-SHU 302

Modeling and Simulations in Neuroscience

This course introduces students in neuroscience, and mathematics to the use of mathematical methods in modeling and computer simulation to investigate phenomena in neuroscience. The course material to be covered is models of electrophysiology of neurons and synapses, neural networks and examples, synaptic plasticity for memory and learning together with computer simulations. Mathematical tools in linear algebra and differential equations, and programming in Matlab is introduced as needed within the course.

Prerequisites: MATH-SHU 121 (Calculus), CCSC-SHU 100 (Mathematics for the Sciences) or MATH-SHU 160 (Network and Dynamics), or permission by the instructor. Familiarity with linear algebra, ordinary differential equation, and programming are recommended but not required.
This course satisfies: NS Elective; STS core.

NEUR-SHU 310

Special Topics in Neuroscience: Perception and Motor Control

The course will present and discuss a selection of notable experimental papers in the area of human visual perception and motor control. These papers sample a spectrum of topics, methods and levels of analysis. In each case, we will discuss the roots and rationale of the work, the results, the extent to which these results withstood the test of time, and the long-term impact on the field of perception and action. Additional papers or reviews reflecting subsequent developments in the field will also be discussed in each case.

NEUR-SHU 997

Independent Study - Neural Science

Pre-requisite: NEUR-SHU 251 (BINS); Must be approved by Area Leader and Academic Affairs.
This course aims at engaging students in research. 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. 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.

Physics

PHYS-SHU 11 General Physics I

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.

Prerequisite: None.

PHYS-SHU 12 General Physics II

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: None.

PHYS-SHU 71 Foundations of Science: Physics Laboratory

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: None.

PHYS-SHU 91 Foundations of Physics I Honors

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: None.

PHYS-SHU 93 Foundations of Physics II Honors

Continuation of Foundation of Physics I. 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: PHYS-SHU 91 (Foundation of Physics I Honors), Freshman Math (including linear algebra, vectors, linear vector spaces and matrices, functions of several variables, partial derivatives, multiple integrals)

PHYS-SHU 94 Physics II Laboratory

This laboratory course is to accompany Physics II lecture PHYS-SHU 93. Experiments in electricity and magnetism, and optics are chosen to illustrate the experimental foundations of physics presented in the lecture courses. The laboratory will also emphasize scientific writing.

Prerequisite: PHYS-SHU 71 (Foundation of Physics I Laboratory)

This course satisfies PHYS Required Course.

PHYS-SHU 95 Foundations of Physics III Honors

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.

Textbook:

Young and Freedman, Sears and Zemansky's University Physics with Modern Physics, 14th Edition.

Additional (optional) reading:

R. P. Feynman, R. B. Leighton, & M. Sands, The Feynman Lectures on Physics.

Howard Georgi, The Physics of Waves

David Morin, (untitled) Waves, <http://www.people.fas.harvard.edu/~djmorin/book.html>

Prerequisite: None.

PHYS-SHU 96

Foundations of Physics IV Honors

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.

Textbook:

Young and Freedman, Sears and Zemansky's University Physics with Modern Physics, 14th Edition.

Prerequisite: None.

This course satisfies PHYS Required Course.

PHYS-SHU 106

Mathematical Physics

Mathematical preparation for the junior and senior courses in physics. Vector analysis, Fourier series and integrals, ordinary differential equations, matrices, partial differential equations, and boundary-value problems.

Prerequisite: None.

This course satisfies PHYS Required Course.

PHYS-SHU 200

Topics in Physics: Optical Imaging - Applications in Biology and Engineering

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.

Prerequisite: MATH-SHU 121 (Calculus).

PHYS-SHU 201

Topics: Introduction to Quantum Theory

PHYS-SHU 301

Quantum Mechanics

Designed to provide a rigorous mathematical introduction to quantum mechanics, this course covers the Schrödinger and Heisenberg description of quantum systems, application to basic atomic structure and simple boundary condition problems, quantum statistics, and perturbation theory.

Prerequisite: None.

This course satisfies PHYS Required Course.

PHYS-SHU 302

Statistical Mechanics and Thermodynamics

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: PHYS-250 (Mechanics).

PHYS-SHU 303

Advanced Physics Laboratory

"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: CCSR-114 (Foundations of Science 6 Physics).
This course satisfies: Major: PHYS Additional Required.

PHYS-SHU 315
Nuclear and Particle Physics

The phenomenology and experimental foundations of nuclear and particle physics are explored in this course, with emphasis on the fundamental forces underlying particle interactions.
Prerequisite: PHYS-250 (Mechanics).
This course satisfies PHYS Elective.

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.

PHYS-SHU 999
Undergraduate Research Thesis

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.)

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.

This course satisfies: Social Science Foundation; ED core.

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 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 (Introduction to Psychology).

This course satisfies Social Science Focus.

PSYC-SHU 329**Parenting and Culture**

Examination of parenting views and practice across socio-cultural groups, discussion of similarities and differences in parenting around the globe, how parenting changes over the life course of the child, and how parenting shapes children's development.

Prerequisite: PSYC-SHU 101 (Introduction to Psychology).

This course satisfies: Social Science Focus; STS core.

PSYC-SHU 349**Cultures of Psychology**

The purpose of this course is to critically examine the ways that culture--with 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 explore the multifaceted nature of their own cultural background and apply it to the establishment of their worldviews. Critical examination of the process of psychological research and scholarship is emphasized.

Prerequisite: PSYC-SHU 101 (Introduction to Psychology).

SOCS-SHU 100**Public Speaking in a Leadership Context**

The purpose of this course is to provide a competitively chosen group of students a unique opportunity to practice and improve their public speaking and public presentation skills within a leadership development context. All students will take the class together and enrollment is capped at 24 students. Students will submit applications to the class during the spring/early summer of 2017, stating the reasons for their interest, and receive word of their selection by the NYUSH administration by early summer. Students will be instructed on various public speaking tips and will be given assignments outside of class and various exercises in class to learn what goes into an effective speech or presentation and how to enhance their public speaking skills. They will read, listen to, and analyze some of the world's greatest speeches; take part in both individual and team-based public speaking exercises; and receive detailed feedback from the instructor and classmates on content, style, organization, and delivery. The aims are that by the conclusion of the class, students will be familiar with numerous different types of speeches and presentations, will understand how leaders can use their public speaking skills to good effect, will have learned both how to employ positive speech techniques and to minimize negative speech habits, and will have more confidence in their own public speaking ability.

The course will be offered for 2 credit hours. Attendance is mandatory, as no part can be repeated or replicated.

Prerequisite: None.

SOCS-SHU 135**Environment and Society**

Topics examined include environmental history and concepts of nature and the environment; the rise of environmentalism; environmental skepticism; anthropogenic global change; population and consumption, ecological footprint analysis, and other environmental indicators; environmental justice; public goods and collective action problems; regulatory regimes; environmental politics; environmental values; environmental movements, protest, and

disobedience; and the future of environmentalism.

Prerequisite: None.

This course satisfies Social Science Foundation; STS core.

SOCS-SHU 150

Introduction to Comparative Politics

How did the modern nation-state emerge? How can we explain variation in levels of development, democracy, internal conflict, and political systems across countries? This course provides an introduction to the field of comparative politics with a focus on core concepts, theoretical approaches, methods, and historical cases. We examine how people create institutions and governance structures, the role of national identities in state-building, and contemporary issues such as increases in intra-state violence, models of economic development, the spread of democracy, and domestic inequalities. Students gain the skills to collect and assess country-level data and explore contemporary global challenges and the ways in which international institutions, countries, and individuals address these challenges.

Prerequisite: None.

This course satisfies Social Science Foundation.

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 international politics? This course provides an introduction to thinking analytically and systematically about outcomes in the international system. We explore theories of international relations including realism, liberalism, and constructivism along with critical Marxist and feminist/gender perspectives, and examine contemporary global issues including terrorism, democratization, the environment, and debates on the US's decline and China's rise. Students gain the ability to analyze seminal articles and appreciate a range of methodological approaches to the study of international politics.

Prerequisite: None.

This course satisfies Social Science Foundation.

SOCS-SHU 210

Statistics for the Behavioral and Social 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

This course satisfies Social Science Method.

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 aspects of these regime types in their imagined and existing forms to develop a taxonomy with which to classify and evaluate contemporary economic regimes. Course case studies include the U.S., Sweden, and China, and students complete a case study of another economic regime as a final project.

Prerequisite: CCSF-SHU 101L (Global Perspectives on Society), or instructor's permission.

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.

Prerequisite: SOCS-SHU 150 (Introduction to Comparative Politics) or SOCS-SHU 160 (Introduction to International Politics).

This course satisfies Social Science Focus.

SOCS-SHU 234
Image as Evidence

Images surround us; we think through images, they shape our words and our worlds. Images entertain us, define us, haunt us. For all these reasons, images present a persistent problem for the social sciences--namely how to tame the force of images to provide evidence about the various worlds in which we as humans live, and in doing so, to push our methods and analyses beyond solely discursive modes of working and thinking. Through key readings and films, Image as Evidence explores the ways social scientists and others have wrestled with the image as a form of evidence in order to make otherwise hidden and invisible phenomena visible, to grasp nature, the senses, cognition, human suffering, and the movement of time. The course explores how images can be manipulated, meanings twisted, and truth (despite much aversion to the word) unmade. The effort of scholars to constantly renew their relationships to images challenges us to "look" differently, and in looking, helps us to consider our ethical and critical relation to the world.

Prerequisite: None.

SOCS-SHU 241
Cultures of Business and Work

Anthropologists often study the unfamiliar cultural practices of marginalized people in faraway corners of the world. But what happens if we turn an analytical eye to powerful corporations, small businesses, and the workaday world of middle-income people as well? In this course we examine cultures of business – the norms, values, and unwritten rules of workplaces. We explore why factory floors in China are laid out how they are, why Japanese businessmen have to sing karaoke after work to get promoted, and why Silicon Valley success stories follow familiar narratives. In order to understand these diverse business settings, we examine major analytical approaches to business and work that focus on political economy, race, ethnicity, and gender. Throughout the class, we discuss what "corporate culture" and "office culture" mean, and consider the implications of this for anthropology's longstanding investigation into "culture" more broadly. Through seminar discussions, current event presentations, and a final case study paper, students develop their own analytical perspectives on business and work.

Prerequisite: None.

This course satisfies Social Science Focus.

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 248
Fraud

Scientific misconduct is valuable because it tells us something about the norms and values of scientific inquiry over time. When scientists make things up or act badly, it says as much about our collective expectations of and sensibilities about scientific practice as it does the personal shortcomings of a small set of actors. The course allows students to examine instances of fabrication, falsification, and plagiarism through a diverse set of case studies. The aim is to unravel the motivations and impacts of fraud, to better appreciate methodological and evidentiary practices even or especially when they go awry, and to consider how wrongdoing shapes perceptions of science in popular culture. The course uses a broad approach to the social study of science to interrogate primary and secondary sources in each case of scientific misconduct.

Prerequisite: None.

This course satisfies: Social Science Method; STS core.

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: None.

This course satisfies: Social Science Core; GCS Elective; SSPC core.

The U.S. Constitution: Is It Relevant to China?

This course covers some basic political concepts and legal doctrines lying at the foundation of the United States' Constitution, with the goal of assessing whether and to what extent these concepts and doctrines are relevant to China. The basic American concepts include the ideas of popular sovereignty and inalienable individual rights (in particular, freedom of speech), federalism, and separation of powers. The basic doctrines include judicial review to enforce the Constitution against "political" actors; Executive powers to act in the absence of, and interpret, legislation; Limits on the legislature's power to enforce legislation; and the duty of subnational officials to extend the equal protection of the laws to all citizens, regardless of race or geographic origin. In addition to examining these ideas using American sources, we will also apply them to present-day controversies in China, examining whether these American ideas might improve governance by Chinese officials or inform the interpretation of the Chinese Constitution. Students will be divided into two teams, one team supporting and the other team opposing the use in Chinese law and politics of some version of an American constitutional concept or doctrine. The teams will hold oral arguments, and each team member will submit four briefs of roughly 1,250 words each, attacking or defending four American positions arguing their team's positions on topics ranging from the powers of the Supreme People's Court to engage in judicial review to the powers of the Chinese executive to detain citizens without judicial process. Underlying both the discussion of American law and its application to Chinese controversies is a broader question: How is it possible for any law -- mere words on a piece of paper -- practically to control the actions of very powerful political actors like members of Congress, state legislatures, governors, Presidents, and judges?

Prerequisite: None.

This course satisfies: Social Science Focus; Humanities Topics; SSPC core.

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 (Introduction to International Politics) is recommended, but not required.*

This course satisfies SSPC core.

Pestilence: Critical Perspectives in Global Health

The course introduces students to problems of epidemic disease and disorder worldwide, and considers various efforts to define and address these problems. The course is designed to offer students a robust survey of literature (both classic and contemporary) concerned with threats to human health--and in doing so, engages an array of social science research perspectives and practices. The course considers the actors, institutions, and forms of knowledge at work in addressing epidemic disease and making "global health" today. By exploring the cultural, environmental, social, political, and epidemiological factors that shape patterns of disease and disorder across and between societies, the course allows students to analyze the systems and values that reinforce specific paradigms of global health policy and science, historically as well as in our present moment.

Prerequisite: None.

This course satisfies: Social Science Focus; STS core.

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. *Prerequisite: None.*

Global Environmental Politics

This course examines the ethics, law, politics, and policy of global environmental issues. It provides a broad overview of the key concepts, debates, actors, and issues in global environmental politics. The course reviews the development of global environmental regimes in areas ranging from climate change to waste management. It equips students with conceptual depth and empirical breadth to critically examine the state of the global environment. *Prerequisites: SOCS-SHU 135 (Environment and Society) is recommended, but not required.*

**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 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 150 (Introduction to Comparative Politics) or SOCS-SHU 160 (Introduction to International Politics).

**SOCS-SHU 340
Comparative Constitutions**

How have the peoples of Germany, Iran and South Africa constituted their governments? What were the historical, political, and social constitutional moments (of revolution and war) that gave birth in these countries to written constitutions? We examine key provisions of these constitutions to understand what values they claim to impose on future generations. We ask why present generations should be constrained by the constitutional choices of a prior society. We look at constitutional practice, especially as it relates to: social-economic rights to education, housing or income; political association and speech; minority groups; the rights of women; and super-dominant political or religious or ethnic parties. Throughout, we ask how an "ideal constitutional citizen" of each country could decide whether an act of state power or a claim of right by a citizen is consistent with constitutional justice. We examine key constitutional language and important court decisions, particularly about human rights. And we look beyond the law--especially to film, but also to journalism and scholarly writing on politics and history--to seek the constitutional spirit of each country.

Prerequisite: SOCS-SHU 160 (Introduction to International Politics) or SOCS-SHU 150 (Introduction to Comparative Politics) or SOCS-SHU 272 (US Constitution--Is It Relevant to China?)

**SOCS-SHU 400
Topics in Social Policy: Poverty**

This seminar examines the causes and consequences of poverty and rising inequality around the globe. Students will study the ways in which poverty and inequality are shaped by multifaceted contexts; understand the theories underlying strategies and programs which address key poverty and inequality issues faced by many developed, developing and least developed countries; and learn about different countries' experiences addressing their own poverty and inequality issues. We consider philosophies of global justice and the ethics of global citizenship, and students are expected to critically reflect upon their own engagements with poverty relief activities and aspirations for social changes. Students should be prepared to tackle advanced social science readings, analysis, and writing. Open to seniors, and to other students with instructor's permission.

Prerequisite: None.

**SOCS-SHU 401
Social Science Capstone Seminar (2 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. Open only to Social Science majors in the senior year.

Prerequisite: None.

**SOCS-SHU 410
Social Science Capstone Honors Seminar (2 credits)**

This seminar introduces major honors candidates to research methods in the Social Sciences as preparation for the Honors Independent Study in the spring semester of the senior year. By the end of the course, students will have produced a well-formulated research question, methodological design, and bibliography, and will have identified a faculty supervisor for the spring semester independent study.

Open only to seniors who have been admitted to honors candidacy in Social Science. Offered online in the Fall.

**SOCS-SHU 411
Social Science Honors Independent Study (4 credits)**

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).

SOCS-SHU 997

Independent Study

1 to 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.

Prerequisite: Must be approved by Area Leader and Academic Affairs.

Self-Designed Honors

SDHM-SHU 410

Self-Designed Honors Major Capstone Seminar (2 credits)

This seminar introduces self-designed honors majors to research methods in preparation for the Capstone Honors Independent Study in the spring semester of the senior year. By the end of the course, students will have produced a well-formulated research question, methodological design, and bibliography.

Open only to seniors who have been approved as self-designed honors majors. Offered online in fall 2016.

SDHM-SHU 411

Self-Designed Honors Major Independent Study (4 credits)

Students approved for the self-designed honors major conduct independent research under the supervision of their faculty mentors. Open only to seniors who have been approved as self-designed honors majors.

Prerequisite: SDHM-SHU 410, Self-Designed Capstone Honors Seminar. Offered in Spring 2017.

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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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Academic Calendar

ORIENTATION

Aug. 25	Fri	Freshman Move In Day
Aug. 26	Sat	First Day of Freshman Orientation and Convocation
Aug. 31	Thu	Returning/Study Away Move In Day
Sept. 1	Fri	First Day of Study Away Orientation

FALL SEMESTER

Sept. 4	Mon	Fall Semester Classes Begin
		First Day of Fall 1st 7-week Classes
Sept. 8	Fri	Add/Drop Course Deadline for 1st 7-week Classes
Sept. 15	Fri	Add/Drop Course Deadline for Fall full-term Classes
Sept. 29	Fri	Course Withdrawal Deadline for 1st 7-week Classes
Mon, Oct. 2 - Fri, Oct. 6		National Day Holiday (includes Mid-Autumn Fall Festival)
Oct. 27	Fri	Last Day of 1st 7-week Classes
Oct. 30	Mon	First Day of 2nd 7-week Classes
Nov. 3	Fri	Midterm Grades Deadline (Fall full-term Courses)
Nov. 3	Fri	Add/Drop Course Deadline for 2nd 7-week Classes
Nov. 10	Fri	Course Withdrawal Deadline for Fall full-term Classes
		Grading Option (P/F) Deadline
Nov. 13 - 17		Registration for Spring Semester 2018 Begins (tentative)
Nov. 19	Sun	Legislative Day: Classes meet on a Thursday schedule
Thu, Nov. 23 - Fri, Nov. 24		Thanksgiving Holiday
Nov. 24	Fri	Course Withdrawal Deadline - 2nd 7-week Classes
Nov. 26	Sun	Legislative Day: Classes meet on a Friday schedule
Dec. 15	Fri	Last Day of Fall Semester Classes/Last Day of 2nd 7-week Classes
Dec. 16	Wed	Reading Day
Mon, Dec. 18 - Fri, Dec. 22		Final Exams

Final Grades Deadline Grades are due 72 hours after the scheduled final exam date.

WINTER BREAK

Mon, Dec. 25 - Sun, Jan. 21	No classes
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OPTIONAL JANUARY TERM

Jan. 3	Wed	January Term Classes Begin
Jan. 6	Sat	Class Day (instead of Jan. 2)
Jan. 19	Fri	Last Day of January Term Classes

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SPRING SEMESTER

Jan. 18	Thu	Study Away Students Move In Day
Jan. 19	Fri	First Day of Study Away Student Orientation
Jan. 22	Mon	Spring Semester Classes Begin
		First Day of Fall 1st 7-week Classes
Jan. 26	Fri	Add/Drop Course Deadline for 1st 7-week Classes
Feb. 2	Fri	Add/Drop Course Deadline for Spring full-term Classes
Thu, Feb. 15 - Wed, Feb. 21		Spring Festival Holiday
Feb. 16	Fri	Course Withdrawal Deadline for 1st 7-week Classes
Mar. 16	Fri	Last Day of 1st 7-week Classes
Mar. 19	Mon	2nd 7-week Classes Begin
Mar. 23	Fri	Add/Drop Course Deadline for 2nd 7-week Classes
MAR. 30	Fri	Midterm Grades Deadline
		Course Withdrawal Deadline for Spring full term Classes
		Grading Option (P/F) Deadline
Wed, Apr. 4 - Fri, Apr. 6		Spring Recess (includes Qingming Holiday)
Apr. 20	Fri	Course Withdrawal Deadline for 2nd 7-week Classes
Apr. 23 - 27		Registration for Fall Semester 2018 Begins (Tentative)
Mon, Apr. 30 - Tue, May 1		China Labor Day Holiday
May 11	Fri	Last Day of Spring Semester Classes
		Last Day of 2nd 7-week Classes
May 12	Sat	Reading Day
Mon, May 14 - Fri, May 18		Final Exams
May 22	Tue	Commencement

OPTIONAL SUMMER SEMESTER

Final Grades Deadline		Grades are due 72 hours after the scheduled final exam date.
SUMMER SESSION I		
May 22	Tue	Summer Session I Classes Begin
May 26	Sat	Legislative Day: Classes meet on a Monday schedule
May 28	Mon	Add/Drop Course Deadline for Summer Session I Classes
Jun. 8	Fri	Course Withdrawal Deadline - Summer Session I
Jun. 18	Mon	Dragon Boat Festival
Jun. 23	Sat	Legislative Day: Classes meet on a Monday schedule
Jun. 29	Fri	Last Day of Summer Session I Classes
SUMMER SESSION II		
Jul. 2	Mon	Summer Session II Classes Begin
Jul. 6	Fri	Add/Drop Course Deadline for Summer Session II Classes
Jul. 20	Fri	Course Withdrawal Deadline for Summer Session II Classes
Aug. 10	Fri	Last Day of Summer Session II Classes

