

Course: Design Thinking**Term: Spring 2017****Meeting time/place: Wednesdays, 6:00-8:30pm, Room 900****Instructor: Eliot Gattegno (E-mail: eg132@nyu.edu; WeChat ID: [eliotgattegno](#))****Office hours: <https://calendly.com/eliotgattegno/office-hours> (Weds & Thurs, 4:00-5:40pm)****Course Description**

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 is in two parts.

The first part of this course is *Design Kit: The Course for Human-Centered Design*. This will equip you with the mindsets and methods of human-centered design so that you can be more intentional about facing and solving your current challenges; let you experiment with the power of human-centered design a.k.a “design thinking”; teach you to identify patterns and opportunities for concept development; inspire you to approach challenges differently and experience how human-centered design can add new perspectives to your own work tackling poverty-related challenges; give you hands-on experience speaking to, prototyping for, and testing solutions with the people you’re designing for.

The second part of this course is *Creative Confidence: Unleashing the Creative Potential Within Us All*. Too often, companies and individuals assume that creativity and innovation are the domain of the “creative types.” This part shows you that each and everyone of us is creative. We will identify the principles and strategies that will allow us to tap into our creative potential in our work lives, and in our personal lives, and allow us to innovate in terms of how we approach and solve problems. The ultimate goal is to help you be more productive and successful in your lives and in your careers.

Attendance, Class Participation & Contribution

Missing class will affect your grade and more importantly your own and your classmates’ experience in the class. If you do miss a class, it will be your responsibility to find out what materials were covered, what assignments were made, and what handouts you missed. If you miss more than one session without warning me 24 hours in advance, it will severely impact your class participation grade.

During part one of the course, each group should be prepared to give a brief summary of the readings, mindsets, and case study of the week. You should also be prepared to present the progress of the week, and any issues you may be experiencing with your challenge. During part two of the course, I will open every class by asking someone to summarize the chapter briefly. You should be able to briefly outline the core points and offer your analysis of the strengths and the weakness of the cases and stories provided. You should also familiarize yourself with the Creativity Challenge of the week. Each challenge can be found in the “Move” chapter of *Creative Confidence*. You should be prepared to complete the activity and also be prepared to teach the activity to other students who will pretend to have not yet read the material.

There will be several exclusive opportunities to attend entrepreneurial events in Shanghai to participants in this course. These events are done in partnership with Entrepreneurs Organization (EO) and other partners in Shanghai. Events will be announced in class, by e-mail, and on our WeChat group. Participation in these events is valuable, and sometimes admission to such an event is worth 10,000+RMB. If you sign-up, please make sure that you can participate, otherwise you are taking the opportunity away from another member of the NYU Shanghai community.

Finally, to encourage close analysis and class discussions, (except during sections of part one of this course) laptops, phones, recorders, and other electronic devices may not be used in class.

Requirements, Grading, & Due Dates

1. Active Class & Group Participation and Contribution (30%)

- a. Weekly Class Environment (20%). For each class, you are expected to prepare readings and case studies, listen closely to class discussion, and share your ideas. Please make an appointment using the Calendly link provided to discuss this portion of your grade at any time during the semester.
- b. Class Participation Leadership Opportunity (10%). You will take responsibility for “leading” the discussion for one class during the semester. This provides an opportunity for you to “stand out” and get specific feedback on participation during the semester. A sign-up sheet and further details will be distributed on the first day of class. It is highly recommended that you meet with me for 20 minutes in office hours at least the day before you do your leadership session. I will help you prepare and coach you for your session. After your leadership opportunity, please make a 20-minute appointment for office hours to get detailed feedback on your performance leading the class, and discuss other elements of your participation with you. Please make these appointments using the Calendly link provided at the top of the syllabus.
- c. 360° Group Evaluation (5%). Each group member will be evaluated by all group members (study group and final challenge) at the end of the semester. Substantial evidence that group work has been unevenly completed will count against your class participation grade. This evaluation is due March 29.

2. Team Challenge (25%)

The team challenge, in-class presentation on March 29, is an opportunity for you to apply the course objectives. Each team has to submit one slide describing what you have done, and have three minutes to present your project to the class. You must abide by all laws, rules and regulations of NYU Shanghai and the P.R.C. for the duration of this challenge (and this course). You will be graded on (a) how well you met your users needs, (b) the positive impact of the project, (c) how well you identified opportunities, (d) how well you challenged assumptions, (e) how well you leveraged your limited resources and (f) general level of creativity.

3. Group Case Study (25%)

In addition to your 3-minute one slide presentation, your group will also write a case study, due March 29, to outline from start to finish the process of you went through. This case should clearly articulate the key grading criteria of (a) how well you met your users needs, (b) the positive impact of the project, (c) how well you identified opportunities, (d) how well you challenged assumptions, (e) how well you leveraged your limited resources and (f) general level of creativity. For an excellent reference, please visit <https://www.ideo.com/blog/redesigning-the-bagel> and other case studies found at: <https://www.ideo.com/work>.

4. Reflection Journal (20%)

For the second part of the course you will keep a journal of your work and progress. While daily entries are best, the minimum is one entry per week. These journals will be graded on the quality of your entries (content, idea development, organization, mechanics, etc.) as well as on your overall growth. Note: I HIGHLY recommend that you use Grammarly.com to edit your entries prior to submission. Please submit all entries via e-mail by 5:40pm on May, 17th in one PDF document. For more information on how to keep a journal, please reference this article: <http://www.wikihow.com/Keep-a-Journal>. To learn about some benefits of keeping a journal and how to start one, please reference this article: <http://liferhacker.com/why-you-should-keep-a-journal-and-how-to-start-yours-1547057185>.

PART ONE: February 8th – March 29th

SCHEDULE

February 8 – An Introduction to Human-Centered Design

February 15 & 22 – Inspiration Phase

March 1 – Ideation Phase: Synthesis

March 8 & 15 – Ideation Phase: Prototyping

March 22 & 29 – Implementation Phase

March 29 – In-class Presentations (Case Study and 360° Group Evaluations Due)

PART ONE SUMMARY

Design Kit: The Course for Human-Centered Design is a seven-week curriculum that will introduce you to the concepts of human-centered design and how this approach can be used to create innovative, effective, and sustainable solutions for social change. This course has been created to reach those who are brand new to human-centered design, so no prior experience required (though we of course welcome experienced students to continue honing your human-centered design skills!)

OUR LEARNING PARTNERS

Acumen is excited to partner with IDEO.org in offering this course. IDEO.org is out to design an end to poverty by bringing creativity, empathy, and innovation to the social sector. Their goal is to improve the lives of people in poor and vulnerable communities through design and we're doing it in three ways: through the products, services, and experiences that we design; through the problem solvers we fuel; and by inspiring the social sector to adopt human-centered design.

WHAT YOU'LL LEARN

This course will:

- Equip you with the mindsets and methods of human-centered design so that you can be more intentional about facing and solving your current challenges
- Let you experiment with the power of human-centered design
- Teach you to identify patterns and opportunities for concept development
- Inspire you to approach challenges differently and experience how human-centered design can add new perspectives to your own work tackling poverty-related challenges
- Give you hands-on experience speaking to, prototyping for, and testing solutions with the people you're designing for

HOW PART ONE WORKS

You will work through the course with a group of 4-5 people we will refer to as your "design team". You will learn the human-centered design process by applying it to one of three pre-crafted real world design challenges (provided in the course). You will also have a choice to craft your own challenge. Each week you will explore the main human-centered design concepts through readings, case studies, and short videos. Then you'll also meet in-class with your design team to get your hands dirty practicing the relevant human-centered design methods. Throughout the course you'll have the opportunity to interact and gain inspiration from design teams around the world taking the course with you and ask questions of experienced human-centered designers when you feel stuck.

BUILDING YOUR DESIGN TEAM

Many of the workshop activities will work best if your group has at least four members. Too small and you lose the benefits of a multidisciplinary team, but too large and it may be difficult to coordinate schedules and make decisions. Select people from different backgrounds or of different skill sets, and you'll have a better chance of coming up with unexpected, innovative solutions.

WORKLOAD

Approximately 5 hours per week:

1-2 hours of individual work 2-3 hours of in-person group work, done in-class

TECHNICAL REQUIREMENTS

You need a computer that allows you to watch videos and the ability to upload assignments which will require Microsoft Word/PowerPoint.

STATEMENT OF ACCOMPLISHMENT

Subject to course completion (completion of all assignments), you will receive a statement of accomplishment signed jointly by +Acumen and IDEO.org.

February 8 – An Introduction to Human-Centered Design

Activities & Discussions

- Introduction & Beginner’s Mind—35 mins
- Icebreaker: Visual Telephone—20 mins
- Logistics—10 mins
- Human-Centered Design Discussion—25 mins
- Mini Design Challenge: Design a Better Commute—1 hour
- Reflect & Share—15 mins

February 15 & 22 – Inspiration Phase

Activities & Discussions

- Questions, Comments, & Takeaways—10 mins // 30 mins
- Choose Your Design Challenge—15 mins // 3+ hours
- Team Knowledge & Assumptions—10 mins // 20 mins
- Plan Your Research—1+ hours // 2+ hours
- Build an Interview Guide—1+ hours // 2+ hours
- Conduct Your Research—To Be Determined by Your Team

March 1 – Ideation Phase: Synthesis

Activities & Discussions

- Questions, Comments, & Takeaways—10 mins // 30 mins
- Share Inspiring Stories & Learnings—1 hour // 2+ hours
- Cluster Into Themes—20 mins // 30 mins
- Create Insight Statements—1 hour // 2+ hours
- Create “How Might We” Questions—30 mins // 40 mins

March 8 & 15 – Ideation Phase: Prototyping

Activities & Discussions

- Questions, Comments, & Takeaways—10 mins // 30 mins
- Brainstorm—45 mins // 1+ hours
- Select Your Best Ideas—15 mins // 1+ hours
- Gut Check—20 mins // 1+ hours
- Create a Storyboard—30 mins // 1 hour
- Determine What to Prototype—20 mins // 1 hour
- Start Prototyping—To Be Determined by Your Team
- Test Your Prototype & Get Feedback—To Be Determined by Your Team

March 22 & 29 – Implementation Phase

Activities & Discussions

- Questions, Comments, & Takeaways—10 mins // 30 mins
- Create an Action Plan—30 minutes // 1+ hours
- Create a Pitch—30 minutes // 1+ hours
- Share Your Solution—To Be Determined by Your Team
- Reflect—30 minutes // 1+ hours
- Moving Forward—10 minutes // 10 minutes

March 29 – In-class Presentations (Case Study and 360° Group Evaluations Due)

PART TWO: April 12th – May 17th

PART TWO SCHEDULE

April 12 – *Flip*: From Design Thinking to Creative Confidence

April 19 – *Dare*: From Fear to Courage

April 26 – *Spark*: From Blank Page to Insight

May 3 – *Leap*: From Planning to Action

May 10 – *Seek*: From Duty to Passion

May 17 – *Team*: Creatively Confident Groups (Journal Due)

PART TWO SUMMARY

Too often, companies and individuals assume that creativity and innovation are the domain of the “creative types.” Part two of this course shows you that each and everyone of us is creative. Using Tom and David Kelley’s book, *Creative Confidence: Unleashing the Creative Potential Within Us All*, we will identify the principles and strategies that will allow us to tap into our creative potential in our work lives, and in our personal lives, and allow us to innovate in terms of how we approach and solve problems. We will pair each reading with tools intended to help you practice unlocking your creative thinking as a bridge to creative confidence. Each exercise corresponds with an innovation question or challenge and all are essential to “design thinking.”

PART TWO REQUIRED READING

Creative Confidence: Unleashing the Creative Potential Within Us All by Tom and David Kelley

April 12 - FLIP: FROM DESIGN THINKING TO CREATIVE CONFIDENCE

Reading Summary

Being human centered is at the core of our innovation process. Deep empathy for people makes our observations powerful sources of inspiration. We aim to understand why people do what they currently do, with the goal of understanding what they might do in the future. Our first-person experiences help us form personal connections with the people for whom we’re innovating. We’ve washed other people’s clothes by hand in their sinks, stayed as guests in housing projects, stood beside surgeons in operating rooms, and calmed agitated passengers in airport security lines—all to build empathy. An empathic approach fuels our process by ensuring we never forget we’re designing for real people. And as a result, we uncover insights and opportunities for truly creative solutions. We’ve collaborated with thousands of clients to leverage the power of empathy, creating everything from easy-to-use lifesaving heart defibrillators to debit cards that help customers save for retirement. We believe successful innovations rely on some element of human-centered design research while balancing the two other elements. Seeking that sweet spot of feasibility, viability, and desirability as you take into account the real needs and desires of your customers is part of what we at IDEO and the d.school call “design thinking.” It’s our process for creativity and innovation. There’s no one-size-fits-all methodology for bringing new ideas to life, but many successful programs include a variation on four steps: inspiration, synthesis, ideation/experimentation, and implementation. In our experience, an innovation or new idea may cycle through many iterations before the process is complete.

Questions for Discussion:

TBD by March 29th

In-class Creativity Challenge #1

Purpose: Push yourself to think divergently and creatively

Tool: Mindmaps

April 19 - DARE: FROM FEAR TO COURAGE

Reading Summary

A widely held myth suggests that creative geniuses rarely fail. Yet according to Professor Dean Keith Simonton of the University of California, Davis, the opposite is actually true: creative geniuses, from artists like Mozart to scientists like Darwin, are quite prolific when it comes to failure—they just don't let that stop them. His research has found that creative people simply do more experiments. Their ultimate "strokes of genius" don't come about because they succeed more often than other people—they just do more, period. They take more shots at the goal. That is the surprising, compelling mathematics of innovation: if you want more success, you have to be prepared to shrug off more failure. Take Thomas Edison, for example. Edison, one of the most famous and prolific inventors in history, had failure baked into his creative process. He understood that an experiment ending in failure is not a failed experiment—as long as constructive learning is gained. He invented the incandescent lightbulb, but only after the lessons of a thousand unsuccessful attempts. Edison maintained that the "real measure of success is the number of experiments that can be crowded into twenty-four hours." In fact, early failure can be crucial to success in innovation. Because the faster you find weaknesses during an innovation cycle, the faster you can improve what needs fixing. We grew up in Ohio, home of aviation pioneers Orville and Wilbur Wright. The Wright brothers are best remembered for what is sometimes called the "first flight," in December of 1903 at Kitty Hawk. But the focus on that accomplishment overlooks the hundreds of experiments and failed flight trials in the years that led up to that first successful flight. In fact, some reports suggest that the Wright brothers picked Kitty Hawk in part because the remote Outer Banks location would draw less media attention during their experiments.

Edison and the Wright brothers may seem like ancient history, but the tradition of learning from enlightened trial and error is still very much alive today. When Steelcase decided to reinvent the traditional classroom chair—eclipsing that uncomfortable wooden version with the writing surface rigidly attached to the chair arm—they worked with our design team to build over two hundred prototypes in all shapes and sizes.

Questions for Discussion:

TBD by March 29th

In-class Creativity Challenge #2

Purpose: Increase your creative output

Tool: Fifteen Seconds of Brilliance

April 26 - SPARK: FROM BLANK PAGE TO INSIGHT

Reading Summary

Sometimes a single course can change a student's life. That's what happened to Rahul Panicker, Jane Chen, Linus Liang, and later Naganand Murty when they used design thinking methods to move from blank page to insight to action. They turned a routine class assignment into a real-life product: the Embrace Infant Warmer, an easy-to-use medical device that costs 99 percent less than a traditional baby incubator and has the potential to save millions of newborns in developing countries. The course was Design for Extreme Affordability, almost universally referred to at the d.school as simply "Extreme"—which pretty accurately describes both the pace and the class experience. Taught by Stanford business school professor Jim Patell and a faculty team, Extreme is a multidisciplinary melting pot in which students from departments all over the university come to the d.school to develop solutions for daunting, real-world problems.

Their project was to research and design a low-cost infant incubator for use in the developing world. No one on the team knew much about the complications of premature birth, let alone medical product design for other countries. They were electrical engineers, computer scientists, and MBA students—not public health experts.

Their first step was to look outward for inspiration. They decided to meet in an unconventional place on campus: high up in a tree, outside the CoHo coffee house. From that lofty perch, the four students Googled the global infant mortality problem and found statistics that astonished them. Each year, about fifteen million premature and low-birth-weight babies are born. A million of them perish, often within twenty-four hours of birth. The biggest preventable cause of death? Hypothermia. "These babies are so tiny they don't have enough fat to regulate their own body temperature," says Jane Chen, the MBA on the team. "In fact, room temperature feels like freezing cold water to them." In India, where nearly half of the world's low-birth-weight babies are born, hospital incubators can provide consistent, life-saving heat during those crucial first days. But traditional incubators can also cost as much as \$20,000—each.

Questions for Discussion:

TBD by March 29th

In-class Creativity Challenge #3

Purpose: Jump-Start An Ideation Session

Tool: 30 Circles

May 3: LEAP: FROM PLANNING TO ACTION

Reading Summary

We are surrounded every day by products that don't work well, services that slow us down, and setups that are just plain wrong: the website that requires ten clicks to accomplish what should take only one or two; the projector that stubbornly resists linking up with your laptop; the machine at the parking garage that makes paying so difficult. Noticing that something is broken is an essential prerequisite for coming up with a creative solution to fix it. Making "bug lists," which Tom described in *The Art of Innovation*, can help you to see more opportunities to apply creativity. Whether you use a piece of paper in your pocket or record ideas on your smartphone, keeping track of opportunities for improvement can help you engage with the world around you in a more proactive way. The running list can serve as a useful source of ideas when you're looking for a new project to tackle. Or you can make a bug list on the spot.

Write down the things that bug you, and you'll start being more mindful of them. It may seem like you're focusing on the negatives, but the point is to notice more opportunities to do things better. And while many of the items on your bug list may be things you won't be able to fix, if you add to it regularly, you'll stumble onto issues you can influence and problems you can help solve. Almost every annoyance, every point of friction, hides a design opportunity. Instead of just complaining, ask yourself, "How might I improve this situation?"

Questions for Discussion:

TBD by March 29th

In-class Creativity Challenge #4

Purpose: Learn from observing human behavior

Tool: Empathy Maps

May 10 - SEEK: FROM DUTY TO PASSION

Reading Summary

One of the most eloquent descriptions we've encountered of the sweet spot between passion and possibility came from Jim Collins, author of bestselling business books *Built to Last* and *Good to Great*. Tom ran into him at a speaking event many years ago just as *Good to Great* was hitting the market. In his talk, without a PowerPoint or even a whiteboard, Jim began by drawing a Venn diagram of three overlapping circles in the air, challenging the audience to follow along using "theater of the mind."

The three circles represented three questions you should ask yourself: "What are you good at?" "What will people pay you to do?" and "What were you born to do?" If you focus on just what you're good at, you can end up in a job you are competent at but that doesn't fulfill you. As for the second circle, while people say, "Do what you love and the money will follow," that's not literally true. One of David's favorite activities is tinkering in the studio above his workshop; one of Tom's dreams is to travel the world, collecting stories and experiences from different cultures. So far no one has offered to pay us to do those things. The third circle—what you were born to do—is about finding work that is intrinsically rewarding. The goal is to find a vocation that you're good at, that you enjoy, and that someone will pay you to pursue. And of course it's important to work with people you like and respect.

The audience members that day all seemed to have the same burning question: how do you know what you were born to do? We believe the answer is related to what Mihaly Csikszentmihalyi, an expert in the field of positive psychology, calls "flow"—that creative state in which time seems to slip away and you are completely immersed in an activity for its own sake. When you are in a state of flow, the world around you drops away and you are fully engaged.

Questions for Discussion:

TBD by March 29th

In-class Creativity Challenge #5

Purpose: Encourage and accept constructive feedback

Tool: I Like/I Wish

May 17 - TEAM: CREATIVELY CONFIDENT GROUPS

Reading Summary

While unlocking our own individual creative potential generates positive impact on the world, some changes require a collective effort. You need teamwork—the right combination of leadership and grassroots activism—to achieve innovation at scale. Change within organizations and institutions is seldom a solo activity. If you want your team to innovate routinely, you'll need to nurture a creative culture.

Take, for example, the cultural transition at Intuit shepherded by its vice president of design innovation, Kaaren Hanson. Back in the 1980s, Scott Cook had founded Intuit based on simplicity, beginning with its flagship Quicken product and expanding into now-familiar software programs like QuickBooks and TurboTax. But eventually the company's growth slowed, and its executive leadership realized Intuit needed to go beyond incremental improvements to create breakthroughs. So Scott asked Kaaren—a young design director at the time—to help him reinvigorate the cycle of growth and innovation that had fueled the company's dramatic rise in its early days.

Looking for new tools, she took a course on customer-focused innovation at the d.school and learned about the principles described in this book. Kaaren also brought together ideas from such influential business thinkers as Geoffrey Moore, Fred Reichheld, and Clayton Christensen. The result was a way forward that the company called "Design for Delight"—referred to internally as D4D. For the employees at Intuit, design for delight means "evoking positive emotion by going beyond customer expectations in delivering ease and benefit so people buy more and tell others about the experience." Among the principles are: 1) deep customer empathy; 2) going broad to go narrow (i.e., seeking many ideas before converging on a solution); and 3) rapid experiments with customers.

Questions for Discussion:

TBD by March 29th

In-class Creativity Challenge #6

Purpose: Define a Problem to Work on

Tool: The Dream/Gripe Session