NYU | TANDON SCHOOL OF ENGINEERING

Department of Technology Management and Innovation
MG-GY 9013– Design Thinking
Fall 2018

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Class Schedule:

Course Pre-requisites:

Course Description:

This course explores creativity and design--led innovation, important notions in today's world where companies are looking for creative, innovative and collaborative employees.

This is an unusual course and, I hope, an enjoyable and practically useful one. It deals in an applied and original way with the topic of creativity. The basic idea behind this course is that exploring the language of art and design can help you think in different ways and reflect on the creative process and what it involves. It takes the perspective of design and art to make us reflect and experiment with the creative process. In fact, more than a course about creativity, it is a course about the *creative process*. The assumption underlying the course is that there is no such thing as creativity as a concept but that there is a creative process involving people, materials and a context.

The emphasis in the course is on experiencing different methods and techniques that can help us be more creative in our work practices, careers and lives.

Course Objective:

What will you understand?

• The nature of the creative process with a focus on different aspects of it: design research, ideation, and prototyping.

• How to support the creative process individually and in teams
• The importance of human--centered design in creating end user and business value
• How to create the environment that nurtures design thinking, and ultimately the generation of new ideas
• How the whole process from idea generation to idea development (e.g. refining, prototyping, testing, etc.), including idea communication.

What will you develop?

• Design research, ideation and prototyping:
    - Develop your design research skills
    - Learn how to move from research insights to generate ideas, prototype them and turn problems into opportunities
• Explore creative problem--solving techniques and their application within a team
• Communication skills (within your team but also with clients or potential funders)
• Design thinking skills that will allow you to come up with new ideas and turn problems into opportunity.
• How to think critically about end--users as well as your audience

In sum, you will learn:

Different ways to approach problems and methods to generate and explore ideas while having the opportunity to develop key skills for today's organizations when they are looking at hiring people: collaboration skills, project experience and a portfolio of innovative techniques.

<u>Course Structure:</u>

What makes this course unusual is its pedagogical approach. I believe that, in some fundamental sense, creativity cannot be taught. Indeed, as mentioned above, if creativity exists, it is not a grandiose thing, but it's a mundane *activity* that results from a different way of looking at things around us. This different way of looking at things emerges from the context, the multiplicity of perspectives and the interactions with people. This approach is reflected in the course structure.

The course is organized around 4 main components:

1. I*n--class workshops*: discussions of case studies and readings; guest speakers; hands-on activities and mini-challenges to explore specific techniques
2. *Studio work ("lab") and team project*: studio work offers you an opportunity to use some of the techniques and tools discussed in class. It also gives you some space to work on your team project, which involves participating to a social innovation challenge posted on openIDEO.
3. *Online discussions*: Discussions on the course blog, including 4 "Reflections" to post and commenting activities (See following page for more information).
4. *OpenIDEO challenge (openideo*.com):
   Each student is expected to post *at least* 5 research posts (3 primary

research) during the research phase. You are encouraged to comment on others' posts and ideas.

Readings:

We won't use a textbook. There are articles, cases and videos assigned for each session. Please check under each session. Most articles are to be found online using the NYU databases. Some will be posted on NYU Classes for this course. A few readings have to be purchased.

You can purchase readings for session 1 using this Course link:
http://cb.hbsp.harvard.edu/cbmp/access/73518535

You need to register on the site to create a user name if you do not already have one.

Some course materials are PDF documents and you can open them with Adobe Reader. eLearning materials include a link you can use to gain access to them. Some course materials may not be available in digital format and these will be shipped to you.

You will have access to the course materials for 6 months.

After you register, you can get to the coursepack at any time by doing the following:

1. Visit **hbsp.harvard.edu** and log in.
2. Click **My Coursepacks**, and then click Design Thinking Spring 2018
   The Designing Services at Engine Case A (420--020 --1) can be purchased on ECCH

Please visit (and register):
http://www.thecasecentre.org/students/course/registerForCourse

and enter the CoursePack code C--1870--246808--STU

Please make sure to do the readings and watch the videos before class. Even when not explicitly discussed in class, readings are crucial for your understanding of the process and the methods we would explore in class.

Course Assignments and Grading:

Attendance

- Attendance is mandatory during all classes and studio work.
- Unexcused absences will affect your grade. One absence is allowed; after that,
- your final, overall, numerical grade will drop by 5 percent (1/2 a grade

- point (e.g. A to an A--)) for each additional absence.
- Be on Time. Tardiness will affect your grade.
- Contact the professor IN ADVANCE if you will not be in class (in person or by
- email is preferred).

Your final grade will be based on a synthesis of quantitative & qualitative rubrics:

Quantitative Grading Overview

- Participation in class: 15%
- Online participation (i.e. research posts; comments on others' research
- posts; OpenIDEO DQ): 15%
- Reflections on the blog: 25%
- Team project (all team members will receive the same grade for the
- project): 35%
- Peer review: 10%

Participation (15%)

In class participation: Your active and involved participation during in--class discussions and exercises will be critical to your own learning as well as to the learning of other participants in this class. Consequently, 15 percent of your grade will be based on class participation (this obviously requires that you regularly attend class and come to class prepared having read the required materials and reflected upon them).

I am looking for comments that show you really thought about the assigned reading or case, that you are listening and building on the comments of other students, and that you respect your classmates enough to challenge them when you think they are wrong or off--base. And that means the instructor as well! We want open dialogue and lively, but respectful, debate. Moreover, your active and involved participation during group--related activities (i.e., in--class group exercises, group meetings, group assignments) will also be taken into account.

Being a design thinker (15%): you'll be expected to be actively involved in the research phase as a researcher and a collaborator (through comments and constructive feedback). You will have to post **at least** 5 research posts (**at least 3 based on first--hand research**) as an individual: number and quality will be taken into account. You are also encouraged to comment on other teams' ideas during the ideation phase.

Blog Reflections and discussions (25%): Think/ Be Puzzled / Explore
Our course has a blog -- *The* "*café*". You will have 4 mandatory posts to make on the blog and for each of these assignments, you'll have to post a comment about one of your classmates posts. You are of course always welcome to post more than these 4 "reflections". You are also requested to read others' posts and to comment to at least two (for each reflection).

The Reflections should be about 250 words. In art, one often talks about how ideas originate, about the creative process. These Reflections offer you an opportunity to be attentive to the "meta--thinking" -- the thinking involved in the thinking, the manner and way ideas evolve and develop and what kinds of conditions support that kind of thinking. It also will help you develop thinking routines and encourage you to think more deeply about the artwork or topic at hand.

You will have to describe your thinking (including the questions or puzzles you have, what it might make you want to explore) as you looked at a piece of work. You might also be able to suggest the creative process for the artist. Don't forget to include a description listing all the information we need to know about the piece and give us your first impression.

Reflection 1 (January 22nd): Pick "something" (an object, an event, a building, a piece of art) that you find really creative. Describe it and explain us why you find it creative.

Reflection 2 (due February 27th): Go to a gallery, an exhibition, or an artistic event and share it with us. Summarize the event and pick one specific piece of art and explain why you chose it: because you liked it, because you hated it, and why you liked it or hated it.

Reflection 3 (due April 13th): Read one of the books listed at the end of the syllabus (or one that you selected after discussing with me) and explain what are the 2 or 3 main ideas, why you like it (or dislike it), how it has changed your perspective on creativity and how it might influence you. This should be about 600--800 words.

To avoid having too many similar presentations (no more than 2 for each book), you will have to sign up for your book ***by February 13th.***

Reflection 4 (due May 8th): Reflect on your class experience during this class. Learning is about doing but also about reflecting. This last reflection is a key element of your class experience. What did you learn? Any surprises? Changes? Your favorite (and least) favorite methods. Explain why. What might you want to explore further, keep practicing, etc.? You are also welcome to reflect on your experience with OpenIDEO.

Team Project (35%):

Creative and innovative work has a strong collective component. Activities in class and your group project will take advantage of the creative potential of collectives. You will be assigned to a team for your project.
Your team project would aim to develop an innovative solution to the challenge proposed to the class. You will ask to generate several ideas and post ***at least two***. Based on feedback (from classmates, from users) and iteration, you will

develop one idea, which must be grounded on research and provide a useful solution to users' needs / problems.
Collective creativity is crucial for the success of your team project. This entails that you regularly attend groups meeting (and be on time), be an active and thoughtful participant during group discussions, and carry your share of the workload.

The final group project grade will include all the elements of the process:

- The amount and quality of the research;
- The iterations (i.e. your ability to develop different prototypes to test and refine your idea); these iterations would be evaluated on the various presentations you will do in class during the semester.
- The quality and originality of the final presentation ("how sticky it is?")

Data used to assess teamwork: meeting minutes, posts on the blog, etc.
Each team must create a repository (Google drive, blog, e.g.) to document their process: research, ideation, prototyping, user feedback and rationale for choosing certain solutions rather than others.

The concepts themselves will also be assessed:

- How well they answer the challenge brief and requirements?
- How well researched are they?
- Potential impact?

Group project
As a team you will be asked to participate in an OpenIDEO challenge.

The final group project grade will include all the elements of the process:

- Research insights
- Ideas generated
- Presentations in class on various stages of the concept
- The final presentation**.**

Qualitative Grading Overview
You will be judged on the quality, relevance, iteration, completion, and presentation of your work during the semester.

Group project

A. Excellent (90--100)
Your group performance has been of the highest level, showing sustained excellence in meeting course responsibilities. Your final idea clearly differentiates itself from other work. It provides an original, thoughtful and useful solution to the challenge. It demonstrates the use of strong methods and process. In particular, it is grounded of strong research and evolved through iteration and multiple prototypes. It illustrates your ability to integrate feedback (from users and from the OpenIDEO community). The final presentation was clear, inspiring and convincing.

B. Very Good / Good (80--89)
Your group performance has been good, though not of the highest level. Your final idea is better than average and shows extra effort. The impact of your idea (how it addresses the challenge) is good, and demonstrates the utilization of the iterative process. You showed an ability to use some feedback, although not always efficiently. The final presentation was clear but not necessarily super convincing.

C. Satisfactory (70--79)
Your performance and attendance has been adequate, satisfactorily meeting the course requirements. Your idea is providing an acceptable solution to the challenge. The idea is sufficiently developed, but it lacks attention to users' context and needs, thoughtful development, originality and / or potential to be implemented. Your team followed the process, but does not demonstrate notable solutions.

F. Unacceptable (59 & Below)
The performance of the team has not met course requirements. Your idea shows no overall understanding of the research, design, and/or prototyping phase(s) on many levels or either a severe lack of interest.

Individual overall evaluation

A. Excellent (90--100)
Your performance and attendance has been of the highest level, showing sustained excellence in meeting course responsibilities. You have been an active and supportive OpenIDEO member (posting thoughtful comments and ideas, and engaging with the community). Your reflections on the blog are original, thoughtful and / or imaginative (and clearly presented); they demonstrate your ability to think critically. You engaged with your classmates' posts on the blog. In class, you actively participated and engaged in group activities. You were a key member to your team.

B. Very Good / Good (80--89)
Your performance and attendance has been good, though not of the highest level. You have participated in OpenIDEO actively and your research posts were thoughtful and grounded. Your research posts and blog reflections are better than average and show extra effort. In class, you were engaged in group activities. You fulfilled all your duties for your team.
C. Satisfactory (70--79)

Your performance and attendance has been adequate, satisfactorily meeting the course requirements. Your participation to OpenIDEO was average and competent. Your reflection posts were sufficiently developed, but lacked thoughtful or original thinking. You attended all classes but were not necessarily fully engaged.

F. Unacceptable (59 & Below)
The performance & attendance of the student has not met course requirements. Your participation (in class, to OpenIDEO or the blog) shows no overall understanding of the research, ideation and/or prototyping phase(s) on many levels or either a severe lack of interest.

Course Topic Outline:

Schedule and Readings:

Reflection 1: Post on the blog by January 22nd, 2018
Post a comment on at least 2 posts from your classmates by the January 25th.

Sessions 1 and 2 -- Introduction: Perspectives on the creative process and innovation
January 23rd, 2018: 5:30 to 9:30 PM

Readings:

- Case: OpenIDEO, HBS Case
- Johansson, "Introduction" and Ch. 1 – "The Intersection – Your Best Chance to Innovate" (from The Medici Effect, HBS, 2006).
- Design Matters for Management, Boland, R. and Collopy, F. in *Managing as Designing*, ed. By Boland and Collopy, 2004, Standford University Press.

Videos:
Where Good Ideas Come From:
http://www.youtube.com/watch?v=NugRZGDbPFU

Extra readings:

- Gardner, H. 1988. Creativity; an interdisciplinary perspective. *Creativity Research Journal*, Vol.1.
- Dyer, Gregersen, & Christensen, "The Innovator's DNA" (HBR, Dec. 2009)
- Coutu, D. 2008 (April) Creativity Step by Step: A conversation with Choreographer Twyla Tharp, Twyla Tharp, *Harvard Business Review.*

Assignments:

1. Read the openIDEO case and be prepared to discuss it in class, in particular focusing on questions such as:
• How to cultivate the creative power of the openIDEO community?
• How to evaluate hundred of ideas?
• What is the role of the design process?
2. Create an OpenIDEO account (mention that you're an NYU student in your

profile) and take the time to explore the platform openideo.com
3. Read each paper and be ready to discuss them. **(This is the case for all readings assigned for a class).**

Session 3 -- Design Research to Develop Deep Contextual Understanding & Studio Work 1 -- January 30th, 2017

Time: 5:30 to 8:30 PM

Introduction to design research: How to look for clues to develop insights and opportunities?

Goals:

• Defining the "problem": In order to generate ideas, you first need to understand the context and define the "problem"
• How to develop a research plan: Where to look? Who to interview? How to make sense of what you find?
• Introduction to this semester challenge and start discussing the research phase
• Start thinking of the challenge question and how you could do research about the topic: How to go about learning about the issue?
o Decide on a few areas for secondary research and have each team member collect at least three articles to share with us during next meeting.
• Develop a research plan in order to collect your research insights in the next 2 weeks.

Assignments:

• Before class: Fill in the communication self-assessment and bring it to class.
• Discuss the organizing principles of your team: choose a name; decide on roles and ways of working (communication rules;; how to solve potential disagreement; etc.).
• Put together a team profile with a short bio and photo for each and main organizing principles of your team: to be shared with Anne--Laure before next class.
• Start knowing each other: Take 15 minutes to discuss how to develop a healthy team dynamic and come up with some activities "beyond" the classroom that could help

Readings:

• Kelley, "The Anthropologist" (Ch. 1 in The Ten Faces of Innovation, 2005).
• Interviewing for Introverts: http://ethnographymatters.net/2012/03/22/interviewing--for--introverts/
• Experience the world, instead of talking of experiencing the world: http://metacool.com/experience--the--world--instead--of--talking--about--experiencing--the--world/
• Gaver et al. *Design Probes*

Videos:

What if… http://www.youtube.com/watch?v=QzmlUNTblvo

Extra readings:

• MacMillan & McGrath, "Discovering New Points of Differentiation" (HBR, July--Aug. 1997)

Session 4 & 5: Collaborative Creativity and Design Thinking – February 6,

2018
Time: 5:30 to 9:30 PM
Goals:
• Discuss various perspectives on creativity:
• Start exploring the creative process: What is (and isn't) creativity?
• Who is creative? Where do creative ideas come from? How can you foster creative associations?
• Discuss the design thinking process and explore the idea of collaborative creativity
Assignment:
• Case: Designing Services at Engine (Case A)
Questions:
1. How would you define the Engine way?
2. What is service design and how similar or different is it to product design?
3. Think of an example of a successful service.
• OpenIDEO challenge: Post 2 secondary research posts on OpenIDEO and share with your team mates
Readings:
• How Pixar Fosters Collective Creativity? Ed. Catmull, *Harvard Business Review*, Sept. 2008
• The 12 weird rules of creativity, R. Sutton, *Harvard Business Review*, Sept. 2001
• Design Thinking, Tim Brown, Harvard Business Review, June 2008, p.84--92)
• How Samsung Became a Design Powerhouse, Youngjin Yoo and Kyungmook Kim, *Harvard Business Review*, September 2015
Extra Readings:
• Slow Ideas: Some innovations spread fast. How do you speed up the ones that don't?
http://www.newyorker.com/reporting/2013/07/29/130729fa_fact_gawande?utm_source=Epicenter+Updates&utm_campaign=80c00c7f3f--Epicenter_Updates_August_20138_21_2013&utm_medium=email&utm_term=0_172413b714--80c00c7f3f--315485089
REMINDER: before the end of the Research Phase on OpenIDEO (February 11th), you must post **at least** five research posts: **three of the posts have to be based on interviews or observations (not an internet--based search).**
Ideation phase on OpenIDEO starts on February 12th.
Studio Work #2: February 13, 2017 – Ideation 1: Developing insights and themes to define "the problem"
Time: 5:30 to 7:30 PM
• **Goal:** Framing the problem: How does observing set the stage for creative insights?
Assignments:
Do research (interviews, observations) and bring your research insights
Prior to the session:
• Write on post--it notes your key insights and support them with a quote or a specific example.
• Remember to focus on the needs of the users (focusing on things they are

trying to do) and try to develop insights (making inferences from what they heard, i.e. "new learnings" about their users' feelings and to leverage in their design.
• Bring your 2 favorite research posts from the OpenIDEO platform.
• Develop themes and define a problem statement / "how might we" question to generate ideas.
• Start brainstorming ideas.
During this studio work, you will share with your teammates larger insights, surprises, themes, ah--ha moment from each of your research post.
As a team, you will then develop themes to explore during the ideation phase.
Readings:
In the Pursuit of the Perfect Brainstorming
http://www.nytimes.com/2010/12/19/magazine/19Industry--t.html
Resources:
Brainstorming 7 tips: http://www.openideo.com/fieldnotes/openideo--team--notes/seven--tips--on--better--brainstorming
How might we: http://www.designkit.org/methods/3
Session 7: Sketching and visual thinking February 27th, 2018
Time: 6:00 to 8:00 PM (*Note the specific time)*
Studio work with Aileen Wilson (Pratt Institute) at Pratt Institute in Brooklyn.
Readings to be distributed later on.
Videos:
Child's creativity http://www.youtube.com/watch?v=H_hGQuTjI3U
Doodle Unite: https://www.ted.com/talks/sunni_brown?language=en
SECOND REFLECTION DUE ON FEBRUARY 27th, 2018
Session 8 & 9: Ideation and Prototyping – March 6, 2018
5:30 to 9:30 PM
Guest Lecture by IDEO, international, multi--award winning design and innovation consultancy
Goals:
• Discuss what prototyping means: What? When? Why and How?
• Explore some prototyping methods
• Learn how to give feedback and receive feedback.
• Develop further your ideas and define what / how to prototype some of your ideas for the challenge:
• Based on the themes and ideas you develop in your studio work #2 and on the ideation themes (on the OpenIDEO platform) you will develop a design statement and start brainstorming ideas.
• Select 2 ideas to develop and post them on openIDEO by the end of the Studio. It does not have to be perfect and you can (and should) update them later on.
Readings:
• Prototyping is the Shorthand of Design, Tom Kelley, *Design Management Journal* Vol. 12, No. 3, 2001
• From Small Ideas to Radical Innovation, Jones and Samalionis, *Design Management Review*, Winter 2008, 20--27
Extra readings:
Enlightened Experimentation: The New Imperative

for Innovation, Stefan Thomke, *Harvard Business Review*, 2001
Video:
A game paper prototype:
http://www.youtube.com/watch?v=L3yl9vaJuFE
SPRING BREAK: March 13, no class.
Studio Work #3: – Rapid prototyping
March 20th, 2017
Time: 5:30 to 7:30 PM
• Decide what questions you want to test and do a rapid prototype for each of them.
• Update your 2 ideas on the platform.
Readings:
Failure Sucks but Instructs:
http://bobsutton.typepad.com/my_weblog/2007/10/failure--sucks--b.html
The Idea Modeling: http://theinnographer.com/toolkit/idea--modeling/
Defining what to prototype: http://www.designkit.org/methods/34
Extra Readings:
Brainstorming groups in context: effectiveness in a product design firm, R. I. Sutton and A. Hargadon, *Administrative Science Quarterly*, Vol. 41, 1996
Sessions 10 & 11: Thinking with our hands: Artifacts and embodied cognition – March 27, 2018
5:30 to 9:30 PM
Goals:
• Discuss psychological theories underlying the use of techniques such as Lego
• Hands--on experience of using Lego ideas generation and team building failure and playing
• Learn to ask for feedback and to provide feedback (I like, I wish, What if)
Assignments:
• Do the readings (as always!).
• Be ready to present an update on your idea and learnings from your rapid prototyping (have a simple visual to illustrate your key points). We will have a critique session.
Readings:
• The Science of Lego serious play
• Kelley, "The Experimenter" (Ch. 2 in The Ten Faces of Innovation, 2005)
• Thomke, "Enlightened Experimentation: The New Imperative for Innovation" (HBR, 2001)
• Lehrer, "Accept Defeat: The Neuroscience of Screwing Up" (Wired, Jan. 2010)
Assignment: User testing in the field-- April 3rd, 2017: No class. Work on your prototype and user testing.
Aim: Test your prototypes with users using various techniques (scenarios, paper prototype, etc.);; Refine your ideas based on feedback
Resources
Gathering user feedback:
https://www.interaction--design.org/literature/article/test--your--prototypes--how--to--gather--feedback--and--maximise--learning

User Testing – Lessons learnt
https://dschool--old.stanford.edu/blog/2010/10/27/user--testing--with--kids--lessons--from--the--field/
STUDIO #4: Learning from user testing and refining ideas
April 10, 2018, 5:30 – 7:30
Goal:
• Review your learnings from user testing and revise your ideas.
• You can also do some extra user testing during the studio (invite some users).
REFLECTION 3 DUE ON APRIL 13.
Sessions 12 & 13: Knowledge sharing / Managing as Designing
April 17, 2018, 5:30 – 9:30 pm
Goals:
• Share insights and reflections on individual readings and topics.
• Discuss organizational issues related to design thinking
Readings:
• Creativity, celebration and play at Bauhaus, Berlin, 1920: lessons from history for contemporary marketers and arts organizations, S. Minahan and C. Hartel, *International Journal of Nonprofit Volunt. Sect. Mark*, 10: 249--261 (2005)
• How Samsung Became a Design Powerhouse, Youngjin Yoo and Kyungmook Kim, *Harvard Business Review*, September 2015
• Design for Action, Tim Brown and Roger Martin, *Harvard Business Review*, September 2015
• And refresh your memory: Design Matters for Management, Boland, R. and Collopy, F. in *Managing as Designing*, ed. By Boland and Collopy, 2004, Standford University Press.
Assignments:
• Be ready to share with others your reflection on the book you read
Studio Work #5: April 24th, 2018
5:30 to 7:30 PM
Aim:
• Discuss the importance of story telling and pitching ideas
• Finalize your presentation for the final exhibition
Readings:
• Elsbach, "How to Pitch a Brilliant Idea" (HBR, Sept. 2003)
• Parr & Ansbaugh, "Ideacide" (*ChangeThis.com*):
http://changethis.com/manifesto/42.05.Ideaicide/pdf/42.05.Ideaicide.pdf
Videos:
What we can learn from Great Communicators:
http://www.youtube.com/watch?v=1nYFpuc2Umk
Extra readings: Heath & Heath, "What Sticks" (Introduction in Made to Stick, 2007)
Resources:
To make good videos: http://storyviz.com/content/category/video/
To tell good stories: http://www.youtube.com/watch?v=9JrRQ1oQWQk
Session 14: Conclusions and Final Presentations – May 1st, 2018
5:30 to 8:00 PM

Conclusion and final project exhibition

Goals:

• Experiment with communicating an idea in a creative and convincing way
• Receive feedback

REFLECTION 4 DUE ON MAY 8th

Possible books to read for Reflection 3:

Pick one among the suggestions below. This list is not exhaustive. Therefore, feel free to contact me if there is a book that you would like to write about.

Becker, H. 2008, *Art worlds*, University of California Press (2 edition)
Brown, T. 2009, *Change by Design*, Harper Business
Buxton, B. 2007, *Sketching User Experiences: Getting the Design Right and the Right Design,* Morgan Kauffman
Csikszentmihalyi, M. 2013 (reprint) Creativity: Flow and the Psychology of Discovery and Invention, Harper Perennial
De Bono, 2015 (Reprint), *Lateral Thinking: Creativity Step by Step*, Harper Colophon
Dunne, A. and Raby, F. 2013, *Speculative Everything: Design, Fiction, and Social Dreaming*, MIT Press
Manzini, E. 2015. Design, *When Everybody Designs: An Introduction to Design for Social Innovation,* MIT Press
Gardner, H. 1994, *Creating Minds: An Anatomy Of Creativity As Seen Through The Lives Of Freud, Einstein, Picasso, Stravinsky, Eliot, Graham, And Gandhi*, Author Basic Books.
Kelley, T. Littman, J., Peters, T., 2001, *The Art of Innovation: Lessons in Creativity from IDEO, America's Leading Design Firm,* Doubleday Business
Kingdon, M. 2012, *The Science of Serendipity: How to Unlock the Promise of Innovation,* Wiley
Kolko, J. 2011 (2nd ed). *Thoughts on interaction design,* Morgan Kaufmann
Hill, D. 2014. *Dark Matter and Trojan Horses: A Strategic Design Vocabulary.* Strelka Press
Leonardo Da Vinci, H. Annah Suh (ed), 2005, *Leonardo's Notebooks,* Black Dog & Leventhal Publishers
Lockwood, T. 2009. *Design Thinking: Integrating Innovation, Customer Experience and Brand Value,* Allworth Press
Martin, R. 2009. *The Design of Business: Why Design Thinking is the Next Competitive Advantage?* HBS Press
Moggridge, B. 2007, *Designing Interactions,* MIT Press
Norman, D. 2002, *The Design of Everyday Things,* Basic Books
Norman, D. *Emotional Design: Why We Love (or Hate) Everyday Things*
Papanek, V. *Design for the Real World: Human Ecology and Social Change.*
Polaine, A, Løvlie, L. and Reason, B. 2013, Service Design: From Insight to Implementation, Rosenfeld Media
Tufte, E. 1990, *Envisioning Information*, Graphics Press
Turkle, S. 2007, *Evocative objects: The way we think with,* MIT Press
Sennett, R., 2008, *The Craftsman,* Penguin Books

Academic Integrity:

All students are responsible for understanding and complying with the NYU Statement on Academic Integrity.

Academic Integrity for Students at NYU

This policy sets forth core principles and standards with respect to academic integrity for students at New York University. Each school at New York University may establish its own detailed supplemental guidelines for academic integrity, consistent with its own culture, and consistent with the University-wide general guidelines described in this document.

At NYU, 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 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 the University, 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 from diverse educational contexts and may have understandings regarding academic expectations that differ from those at NYU. NYU values and respects all academic traditions; however, while at NYU, students are expected to adhere to the norms and standards of academic integrity espoused by the NYU 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. The list is not exhaustive. Students should consult the websites and guidelines of their individual schools for an extended list of examples and for further clarification.

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 cell phones, computers, other technology or any other means)
- providing assistance to acts of academic misconduct/dishonesty (e.g., sharing copies of exams via cell 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 the student's NYU School, department, or division.

Moses Center Statement of Disability

If you are student with a disability who is requesting accommodations, please contact New York University's Moses Center for Students with Disabilities at 212-998-4980 or mosescsd@nyu.edu. You must be registered with CSD to receive accommodations. Information about the Moses Center can be found at www.nyu.edu/csd. The Moses Center is located at 726 Broadway on the 2nd floor.