INTA 4050/6753 — ICT & Policy
Neha Kumar
MWF 10:10-11AM

Course Description
This course will discuss the challenges and opportunities posed by the fourth industrial revolution, particularly with regards to the future of work, and how human-centered design-based approaches can prepare for and manage disruptions. In the spirit of human-centered design, the course will be co-designed by the students and instructor, who will together construct the syllabus in the first week of classes. Topics covered will relate to the future of cyber-physical systems, such as the internet of/ for things, smart cities, self-driving cars, wearable tech, virtual/augmented reality, and more. Students will engage with current and ongoing debates on each of the topics collectively chosen to be covered in the class. They will also learn how to address these debates using a human-centered design perspective for their final design project.

Prerequisites
None

Instructor
Neha Kumar (Assistant Professor, International Affairs & Interactive Computing)

Required Texts
Human Centered Design – free download from IDEO website: http://www.ideo.com/images/uploads/ hcd_toolkit/IDEO_HCD_ToolKit.pdf
Additional readings will be provided on Slack. The team name is ictpolicy.slack.com.

Grades
Class Participation — 20%
Syllabus Co-Design — 20%
Presentation on a Topic — 20%
Case Study — 20%
Final Reflection — 20%

Readings, Lectures, and Videos
Information from readings, lectures, and videos are critical for learning in this class. Students are requested to complete the primary readings and watch the videos before the class in which they will be discussed. In addition, they will be required to refer to these materials in reports, presentations, and reflections to show how they used them to develop and substantiate designs and decisions. Everything will be shared via Slack (ictpolicy.slack.com).

Schedule

Week 1	Introductions + Syllabus Construction
Week 2	What is Human-Centered Design?
Week 3	Topic #1
Week 4	Topic #2
Week 5	Topic #3
Week 6	Topic #4
Week 7	Topic #5
Week 8	Topic #6
Week 9	Topic #7
Week 10	Topic #8
Week 11	Topic #9
Week 12	Topic #10
Week 13	<Overflow>
Week 14	<Overflow>
Week 15	Review & Presentations

Overview of Topics

We will cover a subset of the topics below in our class. The list is from Klaus Schwab's book on the Fourth Industrial Revolution. Students will have a say regarding which subset this ends up being.

1. Implantable Technologies
2. Our Digital Presence
3. Vision as the New Interface
4. Wearable Internet
5. Ubiquitous Computing
6. A Supercomputer in Your Pocket
7. Storage for All
8. The Internet of and for Things
9. The Connected Home
10. Smart Cities
11. Big Data for Decisions
12. Driverless Cars
13. Artificial Intelligence and Decision-Making

14. AI and White-Collar Jobs
15. Robotics and Services
16. Bitcoin and the Blockchain
17. The Sharing Economy
18. Governments and the Blockchain
19. 3D Printing and Manufacturing
20. 3D Printing and Human Health
21. 3D Printing and Consumer Products
22. Designer Beings
23. Neurotechnologies

Attendance Policy
Attendance is recommended. Tardiness is interpreted as unprofessional and frowned upon. Each student is requested to participate in discussions through the semester.

ADAPTS
The professor will work with ADAPTS so that all students have an equal opportunity for success. For information on ADAPTS, see http://www.adapts.gatech.edu/.

Honor Code
By participating in this class, students agree to adhere to the Georgia Tech Honor Code. For additional information, please see: http://www.honor.gatech.edu/.

Assignments
20% — **Class participation** will depend on the students' participation in in-class exercises and discussions, attendance, and involvement. This is hard to measure in general and the score will be decided on a discretionary basis. Students are encouraged to ask about their class participation score at any time during the semester. They will also be given an expected class participation grade midway through the semester (along with the grade for their case study) and will have the opportunity to improve on it.

20% — Students will be required to submit **three topics** they would like the class to cover from the above list, along with two reading suggestions (of a reasonable length) for each topic. One of the two reading suggestions should extol the benefits of the tech, while the other should offer a critical perspective. This assignment will be out of 30 points, with 10 points assigned to the treatment of each topic of interest. Five points each will be assigned for the choice of each reading selected. Students should offer a 100 word summary for each of the readings selected. A template will be provided for this assignment. Due 8/28.

20% — Each student will be required to make a **15 minute presentation** to introduce one of the topics that is chosen to be part of the syllabus. To the extent possible, students will be allowed to choose

which topic they introduce. They will be graded for creativity, clarity of presentation, completeness, and conciseness (5 points for each). These presentations will take place throughout the semester and on a schedule determined by the students' topic choices.

20% — For the **case study,** students will be asked to do "field research" to understand how humans around them may be affected by one of the topic areas we consider in the class. For example, it could be an interview with an Uber driver or an AirBnB host about the sharing economy and the challenges they've faced (note that this will be valid only if the sharing economy is one of our chosen topics). Look here for an example. Students will use the design methods learned at the beginning of the class for this assignment. Credit will be given based on creativity, clarity of presentation, completeness, and conciseness again (5 points for each). Due 10/4.

20% — For the **final project,** students will be asked to take their case study further. They will research the topic they covered for their case study, lay out the challenges and opportunities that emerged from their background and field research, reflect on the design methods used and how this process gave them a new perspective, and *design policy changes* that could address concerns that arose in this case. These are really the skills the students will be expected to walk away with from the class — the ability to reflect on an aspect of the fourth industrial revolution, understand how it impacts people, and take a human-centered design approach to inform change that mitigates the impact. Credit will be given for the background on the problem being addressed (10 points), the understanding of the impact (10 points), and the human-centered design approach to propose change (10 points). Due 12/5.

Learning Objectives
This course is designed as above to grant agency to students in determining what they will learn about for the next 15 weeks to get to the point of being informed and conversant on topics that will be current, relevant, and pressing when they graduate and go about choosing their career paths. This is as true for the topics learned in this course as for the design thinking skills that they will (hopefully) acquire, if all goes according to plan.