COMS 3998 Undergraduate Projects in Computer Science / COMS 4901 Projects in Computer Science

Course Syllabus, 1.1, last revised 1/12/2020
* Note that this syllabus is subject to change. Students will be notified about any changes.

Course Logistics

Meeting Times (preliminary times are listed, all times are subject to change):
Section 1: Mondays 1:00pm – 2:00pm
Section 2: Thursdays 3:00pm – 4:00pm
Meeting type: Hybrid, in person for NYC students, Zoom for remote students
Meeting Location: Milstein 512 for NYC students, Zoom for remote students

Instructor Information

Instructor: Sarah Morrison-Smith, PhD

- E-mail address (preferred):   smorriso@barnard.edu
- Office location: Milstein 512
- Class Web site: Google Drive + barnardhci.com

I welcome you to contact me outside of class and student hours and I especially invite you to **contact me if you find yourself spending a lot of time without making any progress**. To make an appointment, send a formal email with the subject including "COMS 3998" or "COMS 4901" and include your meeting goals, any relevant questions, and at least 3 proposed meeting times.

Student Hours

Student hours can be scheduled directly through Slack. Student hours must be scheduled **at least 2 hours in advance**. Please direct requests for additional hours to Dr. Morrison-Smith. When requesting additional hours, **please specify at least 3 times when you are available**.

Course Information

Prerequisites:

Approval by a faculty member who agrees to supervise the work. Completion of the BarnardHCI New Student Challenge.

Catalog Descriptions:

- Course Number 3998 – Undergraduate Projects in Computer Science – Points: 3, Independent project involving laboratory work, computer programming, analytical investigation, or engineering design. May be repeated for credit, but not for a total of more than 3 points of degree credit. Consult the department for section assignment.

- Course number 4901 – Projects in Computer Science – Points 3, A second-level independent project involving laboratory work, computer programming, analytical investigation, or engineering design. May be repeated for credit, but not for a total of more than 3 points of degree credit. Consult the department for section assignment.

Course Overview:

To enroll in an independent study, a student must find a faculty member to sponsor the project. Students are encouraged to approach individual faculty based on their interests, although many of these projects get started after a student takes a course with a particular faculty member. Many students use this as an opportunity to get involved in research, which helps prepare a student for graduate school.

This course provides an introduction to and overview of the field of human-computer interaction (HCI). HCI is an interdisciplinary field that integrates theories and methodologies from computer science, cognitive psychology, design, and many other areas. Course readings will span current theory and practice in interface specification, design and evaluation, as well as current and classic research papers in HCI. Students will work on a team projects to design, implement and evaluate computer interfaces. The course is open to students from all disciplines, providing them with experience working in interdisciplinary design teams.

There are two major components to the course, treated in parallel during the semester. The central focus of the course is a semester-long team project, in which students will design, implement and evaluate a user interface. Teams will be incrementally led through the phases of ethnographic study and requirements analysis, scenario-based design, paper prototyping, computer prototyping, and several methods of usability analysis and evaluation.

The second component of the course involves exposure to current research in HCI, in order to provide students with an understanding of the range of issues addressed in the field, to provide them with practice reading, presenting and critiquing HCI research, and to provide ideas for team projects. This component of the course will be implemented via writing, with students writing blog posts on HCI research topics to be published on the BarnardHCI website. Students will wrap up the term with a reflective essay that summarizes their experiences over the semester.

Course Components:

This course involves the following components:
- Group meetings: core information about research in the field of Human Computer Interaction will be presented, discussed.
- Readings: research papers and other readings will be assigned and discussed.

- Blog posts: students will write two 1600 word research articles on a research topic to be publicly published on the BarnardHCI website.
- Reflective essay: students will write a 10-12 page reflection essay summarizing their experiences over the semester.

Learning Outcomes:

By the end of this course, students will be able to:
- *Design, implement and evaluate* effective and usable graphical computer interfaces.
- *Describe and apply* core theories, models and methodologies from the field of HCI.
- *Describe and discuss* current research in the field of HCI.

Course Materials

Textbooks Required:

There are no textbooks required for this course. All course readings will be made available on Google Drive.

Affordable Access to Course Texts:

All students deserve to be able to access course texts. The high costs of textbooks and other course materials prohibit access and perpetuate inequity, and Barnard librarians are partnering with students, faculty, and staff to increase access. By the first day of advance registration for each term, you should be able to view on Canvas information provided by your faculty about required texts (including ISBN or author, title, publisher and copyright date) and their prices. Once you have selected your classes, here are some cost-free methods for accessing course texts, recommended by the Barnard Library: find out if your faculty has placed the texts on reserve at Barnard Library or another Columbia library, and look for course texts using *CLIO* (library catalog), *Borrow Direct* (request books from partner libraries), *Interlibrary Loan* (request book chapters from any library), and *NYPL*. Students with financial need or insecurity can check items out from the FLIP lending libraries in the Barnard Library and Butler Library and can consult with the *Dean of Studies* and the *Financial Aid Office* about additional affordable alternatives for getting access to course texts. Talk with your librarian and visit the *Barnard Library Textbook Affordability guide* (*library.barnard.edu/textbook-affordability*) for more details.

Software Required:

The following free or trial software packages may be necessary to be installed by students on their laptops or used via online services over the course of the semester:
- IDE suitable for client-side web development (e.g., Jetbrains WebStorm, Eclipse, Sublime Text, Google Dart etc.)
- Zoom
- Slack

Grading:

The following items will contribute to students' grades in this course:

Grade Category	Percentage	Letter	Range (%)
<u>Individual</u>		A	94–100
Blog Post 1	20%	A-	90–93
Blog Post 2	20%	B+	87–89
Reflective Essay	20%	B	83–86
Class participation	40%	B-	80–82
		C+	77–79
Total	**100%**	C	73–76
		C-	70–72
		D+	67–69
		D	63–66
		D-	60–62

<u>NOTE:</u> A C- will not be a qualifying grade for maintaining good academic standing. The concept of satisfactory academic progress mandates that students maintain a minimum GPA of 2.0 or better (C or better). Note: an average of C- is equivalent to a GPA of 1.67 and therefore does not satisfy this requirement. For more information on grades and grading policies, please consult Barnard's policies regarding academic standing https://barnard.edu/grades-exams.

All final course grades will be rounded to the nearest whole number. There will be no "bumping" or rounding up to the next grade bracket.

Grade reviews must be requested within four days of a grade being posted. After this time, no grade will be revisited. In the event of a grade review, the entire assignment will be reviewed. Grade reviews must be requested in writing with an explanation describing why student believes the grade received is incorrect. Similarly, **inquiries about missing grades must be made within 4 days of grades being posted**.

Honesty & Collaboration:

High-level questions can be discussed amongst each other and amongst the groups. Plagiarism (misrepresenting others' ideas as your own, can be fixed with simple citation) is not allowed in this course.

As for other courses at Barnard, offenders will be held to the Barnard Honor Code (see below) including reporting incidents to the Dean of Students. The results of this can include failing grades and disciplinary action (which can lead to expulsion).

Course Policies

Attendance:

Attendance will not be graded. Engagement in group meetings is graded, however, so if students must miss a meeting, the instructor recommends sending an email to smorriso@barnard.edu requesting an exception. If a student is sick or will be absent for a significant period of time, please contact the instructor to work out a way to catch up. Documentation of illness must include the expected duration.

Make-ups:

Students who contact the professor **before the due date** with appropriate requests for extension and/or makeup assignments will be given an additional amount of time to make up late assignments equal to the time lost due to the unforeseen circumstance.

Incompletes:

Incompletes will be granted for only the most extreme circumstances, e.g. medical or family reasons. To be considered for an incomplete, the student **must** 1) let the professor know in advance that they are seeking an incomplete, and 2) provide documentation to support the request.

Classroom Expectations:

To be courteous to your fellow students, please:
- Turn all cell phone ringers to silent and step outside if you must take calls.
- Turn off all audible notifications on laptops and phones.
- Refrain from texting during class.
- Use laptops only for taking notes, looking up relevant information, or answering quiz questions (no Facebook, YouTube, Twitter, etc.).

Zoom Use

I recognize that learning remotely presents a series of challenges to fostering an accessible and inclusive educational experience. In order to address these difficulties, I am proposing the following practices. **You are encouraged but not required to keep your camera on during class sessions**, and no student will be penalized for choosing to disable their camera. Keep your microphone muted unless you are contributing to discussion in a small group or during a lecture. If you are having connectivity issues or if you have to log off before class ends, please review the lecture video when it is posted. If you are unable to stream the video, please contact me directly via email.

If you are comfortable discussing any circumstances that you anticipate affecting your education this semester, please feel free to set up an appointment with me during student hours. I will be recording all class sessions so that course content is accessible to all students but will pause the recording if sensitive topics are being discussed. Because I am recording the sessions and will be honoring students' requests to

pause recordings, **please refrain from recording them on your own**. This is essential to building a community of trust and a culture of respect for one another's privacy.

As your professor, I will be maintaining as much flexibility as possible under the extraordinary circumstances in which this course is taking place. **In return I ask for your patience, understanding, and willingness to share feedback with me about the practices that you believe will best support an inclusive and accessible classroom.**

Guest Lectures:
In this course, guest lecturers may be invited to present material related to their research or work, and how it relates to the course material. These are experts in their fields and are taking time out of their busy schedules to share their knowledge with you. Please respect their time and attend the guest lectures as you would any other meeting of the course.

College Policies and Resources
Honor Code:
Barnard students are bound by The Honor Pledge, established 1912, updated 2016, which states, "We, the students of Barnard College, resolve to uphold the honor of the College… We pledge to do all that is in our power to create a spirit of honesty and honor for its own sake."

The Honor Code (https://barnard.edu/dos/honorcode) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor. Note that failure to comply with this commitment will result in disciplinary action compliant with the Barnard

Academic Accommodations for Students with Disabilities:
If you believe you may encounter barriers to the academic environment due to a documented disability or emerging health challenges, please feel free to contact me and/or the Center for Accessibility Resources & Disability Services (CARDS). Any student with approved academic accommodations is encouraged to contact me during office hours or via email. If you have questions regarding registering a disability or receiving accommodations for the semester, please contact CARDS at (212) 854-4634, cards@barnard.edu, or learn more at barnard.edu/disabilityservices. CARDS is located in 101 Altschul Hall.

Wellness
It is important for undergraduates to recognize and identify the different pressures, burdens, and stressors you may be facing, whether personal, emotional, physical, financial, mental, or academic. We as a community urge you to make yourself—your own health, sanity, and wellness—your priority throughout this term and your career here. Sleep, exercise, and eating well can all be a part of a healthy regimen to cope with stress. Resources exist to support you in

several sectors of your life, and we encourage you to make use of them. Should you have any questions about navigating these resources, please visit these sites:

- http://barnard.edu/primarycare
- http://barnard.edu/counseling
- http://barnard.edu/wellwoman/about
- [Stressbusters Support Network](#)

Software Use

All faculty, staff, and students of Barnard College are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against Barnard's policies and rules, disciplinary action will be taken as appropriate. We, the members of the Barnard College community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.