Research Methods for Human-centered Computing
CIS 4930 (11EG) or CAP 5108
Time: Tuesday Period 8-9 (3-4:55pm), Thursday Period 9 (4:05-4:55pm)
Location: FLG 0285
Spring 2016

Instructor
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(352) 562-0979
Office Hours: E540, Thursdays 2:15-3:45pm or by appointment

Teaching Assistants
• TBD

Course Description
This class introduces the fundamental methods and techniques to collect data from humans for building and evaluating technologies, including experimental design, types of variables, types of errors, hypothesis testing, survey design, behavioral and psychophysical methods.

Course Objectives:
The class will involve learning through mini-assignments, projects, and active participation. As empirical results become increasingly important in computer science, this course seeks to explain the concepts of experimental design and data analysis in the context of humans interacting with technology.

By the end of this course, students will be able to
- design a hypothesis
- design a human subjects experiment
- collect a variety of data from human subjects
- analyze data via statistical methods

Required Materials
Laptop: Students are required to bring a laptop to class. The following software may be needed: MATLAB (available through the university) and R (free).

Recommended Materials

“Empirical Methods for Artificial Intelligence” by Paul R. Cohen
Prerequisites
STA 3032 (Statistics), COP 3530 (Data Structures and Algorithms), or equivalent.

Course Schedule
Schedule of topics could change based on class discussions and progress in class activities.
Week 1: Introduction (What is research)
Week 2: Types of empirical studies, Types of data, Types of variables
Week 3: Ethics, Project pitch
Week 4: The concept of control, bias, order effects
Week 5: Self-report data
Week 6: Mid-term exam
Week 7: Behavioral data
Week 8: Introduction to psychophysics
Week 9: Mid-term project updates, Mid-term feedback on course
Week 10: Analyze your data (descriptive statistics, T-test, ANOVA)
Week 11: Model fitting via linear regression
Week 12: Bonus topic, e.g., Qualitative methods
Week 13: Bonus topic, e.g., An introduction to writing
Week 14-15: Project presentations

The list of topics may change slightly depending on class interest, and interruptions due to school holidays.

Key Dates
Jan 28, Thursday 5:00pm: CITI training due
Feb 11, Thursday 5:00pm: Mid-term exam due
Feb 23-25, Tues/Thurs, during class hours: Project updates (attendance is expected)
April 12/14/19, Tues/Thurs/Tues, during class hours: Project final presentations (attendance is expected)

The instructor will communicate with the class in advance if any of these dates need to be changed to accommodate unforeseen circumstances.

Evaluation of Grades
Ethics training (10 pts)
Class participation (answer a question posed by a fellow student=2pts/question) (10 pts)
Scribe for lecture (20 pts)
Mid-term exam (20 pts)
Project (40 pts)

Extra credit: Best project by class vote (5 pts), Study participation (10 pts, at 2pts per study)

Grading Policy
The grading criterion will be clearly communicated to the students. Course
letter grades will be determined at the end of the semester, based, in part, on
the difficulty of the projects, assignments, and exams.

Expectations for graduate vs undergraduate students: Graduate students can
expect to have extra questions in the homework/exams compared to
undergraduate students. These questions will be more challenging in that they
will require greater critical thinking, and a deeper understanding of the
content. Undergraduate students will do the project in larger groups than
graduate students. The graduate projects will have higher standards for
sophistication of design and implementation, lack of errors, and clarity of
communication.

“A C- will not be a qualifying grade for critical tracking courses. In order to
graduate, students must have an overall GPA and an upper-division GPA of
2.0 or better (C or better). Note: a C- average is equivalent to a GPA of 1.67,
and therefore, it does not satisfy this graduation requirement. For more
information on grades and grading policies, please visit:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

“Graduate students need an overall GPA of 3.00 truncated and a 3.00
truncated GPA in their major (and in the minor, if a minor is declared) at
graduation.” For more information on grades and grading policies, please
visit: http://gradcatalog.ufl.edu/content.php?catoid=4&navoid=907#grades

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Class Attendance and Make-Up Policy
Class attendance is expected. Excused absences are consistent with university
policies in the undergraduate catalog
(https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx)
and require appropriate documentation.

Make up assignments/grading will not be provided. In case of an absence,
students will have the option to apply their final project grade to that
assignment.

Students Requiring Accommodations
Students with disabilities requesting accommodations should first register
with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/dre/) by
providing appropriate documentation. Once registered, students will receive
an accommodation letter which must be presented to the instructor when
requesting accommodation. Students with disabilities should follow this
procedure as early as possible in the semester.

Course Evaluation
Students are expected to provide feedback on the quality of instruction in this
course by completing online evaluations at https://evaluations.ufl.edu.
Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

Class Demeanor
Students are expected to arrive to class on time and behave in a manner that is respectful to the instructor and to fellow students. Please avoid the use of cell phones and restrict eating to outside of the classroom. Opinions held by other students should be respected in discussion, and conversations that do not contribute to the discussion should be held at minimum, if at all.

Materials and Supplies Fees
There are no additional fees for this course.

University Honesty Policy
UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (https://www.dso.ufl.edu/scsc/process/student-conduct-honor-code/) 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 or TAs in this class.

Counseling and Wellness Center
Contact information for the Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc/Default.aspx, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.