

Version of 22 August 2017

Course Description

The Practicum helps students develop and practice the skills required to conduct an independent research project. It is intended for graduate students pursuing a PhD in computer science. Students will select a subject area advisor for the PhD milestone project during the first two weeks of the semester. The Practicum provides intensive supervision for one semester, in collaboration with the subject area advisor, as the student develops his or her milestone project and begins to research it. It is expected that by the end of the semester, students will have acquired the necessary knowledge to conduct independent research and complete the research milestone within the required time period. They will also have selected a project, conducted a literature review, begun conducting the research, and written a paper outlining their progress.

At the completion of this course, students will have fulfilled the Research Milestone requirement described here:

<http://www.cs.unm.edu/programs-and-degrees/ph.d./The%20Research%20Milestone.html>

Specifically, at the end of the semester you will present your work in this class before a committee of three CS faculty as described

Meeting times

Mondays and Fridays 3:00 to 4:45pm, FEC 3500

Instructor

Jedi Crandall, office FEC 3060, crandall@cs.unm.edu — office hours Tuesdays and Wednesdays 1:00 to 3:00pm.

Grading

Grades will be determined as follows:

- Selecting a subject area advisor (5% of grade)
- Successfully proposing and presenting a research project (10% of grade)
- Literature review (10% of grade)
- Research project, final written and oral report (50% of grade)
- Class participation (25% of grade)

Textbook

There is no required textbook. The following textbook is recommended as a supplemental material: *The Craft of Research* (4th ed.), W. C. Booth, G. C. Colomb, J. M. Williams, J. Bizup, and W. T. Fitzgerald, Univ. of Chicago Press, 2016.

Course topics

- Course overview
- What is research?
- Research proposals
- Academic writing
- Assigning credit for scientific work
- Evaluation of results
- Reproducibility of results
- Collaboration

Schedule

Weeks 1–2: Write (half-page): What are you passionate about? Why? Find a subject area advisor. Identify a general topic area.

Weeks 3–4: Identify a research topic. Write (half-page): Summary of research topic. Conduct an initial literature review. Oral presentations.

Weeks 5–6: Three-way meetings (student, subject-area advisor, instructor). Refine the research topic. Write 2–3 page project proposal, including literature review. Initiate research.

Weeks 7–10: Define a 'fail early' experiment. Oral presentations and critiques.

Weeks 11–14: Intermediate progress reports due. Three-way meetings (student, subject-area advisor, instructor). Begin final paper.

Weeks 15–18: Write 8–10 page paper summarizing results and future directions. Prepare and deliver short oral presentation of preliminary research findings.

UNM Statement of Compliance with ADA

“Qualified students with disabilities needing appropriate academic adjustments should contact the professor as soon as possible to ensure your needs are met in a timely manner. Students must inform the professor of the disability early in the class so appropriate accommodations can be met. Handouts are available in alternative accessible formats upon request.”

Cheating and collaboration

Representing the work of others as your own, even if done by accident or implicitly, will not be tolerated in this class. This kinds of activity, or any other type of cheating, will result in a F in the class and will be reported to the Dean of Students.

Research is often a collaborative effort, but the goal of this class is to demonstrate that you can conduct independent research. Therefore, the work you turn in for this class should be your own.

If you're unsure about how to attribute text, source code, or other work, or about anything related to cheating and collaboration in general, ask me.

Statement about Title IX borrowed from Patrick Bridges

"No form of discrimination, sexual harassment, or sexual misconduct will be tolerated in this class or at UNM in general. I strongly encourage you to report any problems you have in this regard to the appropriate person at UNM. As described below, I must report any such incidents of which I become aware to the university. UNM also has confidential counselors available through UNM Student Health and Counseling (SHAC), UNM Counseling and Referral Services (CARS), and UNM LoboRespect. UNM faculty, Teaching Assistants, and Graduate Assistants are considered 'responsible employees' by the Department of Education (see pg 15 at <http://www2.ed.gov/about/offices/list/ocr/docs/qa-201404-title-ix.pdf>). This designation requires that any report of gender discrimination which includes sexual harassment, sexual misconduct, and sexual violence made to a faculty member, TA, or GA must be reported to the Title IX Coordinator at the Office of Equal Opportunity (oeo.unm.edu). More information on the UNM policy regarding sexual misconduct, including reporting, counseling, and legal options, is available online: <https://policy.unm.edu/university-policies/2000/2740.html>"