



Undergraduate Student Research Methods Course

Summer 2024 Syllabus

Undergraduate Student Research Methods Course Summer 2024 Schedule											
Session	1	2	3	4	5	6	7	8	9	10	11
A	5/20	5/22	5/23	5/29	5/30	6/3	6/5	6/6	6/10	6/12	6/13
B	6/17	6/20	6/24	6/26	6/27	7/1	7/3	7/8	7/10	7/11	7/15

Both session A and session B will meet from 12pm – 1:50pm ET / 9am – 10:50am PT.

Course Description

This course will introduce you to the basics of research in computer science. You will learn what a research problem in CS looks like, how to read and find research papers, how to articulate a problem, and how to propose a research project to solve that problem. It is group-based, so the majority of the work you will do in this course will be collaborative. This course will prepare you for independent research projects in computing and beyond.

Core Learning Goals

These are the BIG IDEAS that you should walk away with and hold on to by the time class is over. Specifically, by the end of this course, you should be able to:

1. RESEARCH SKILLS: Develop practical skills required to effectively conduct a computer science research project
2. COMMUNICATION: Communicate research findings via written and oral means
3. TEAMWORK: Work effectively in a team to accomplish research goals
4. CS & SOCIETY: Evaluate the social, ethical, and cultural impacts of your computer science research project
5. IDENTITY: Develop a computer science research identity
6. COMMUNITY: Develop skills to support belonging and a positive community for all persons with your computer science research project
7. CAREER: Aspire towards consideration of pursuing a graduate degree in computer science

Course Materials

Zoom: We will be holding live class sessions online with Zoom. Please be sure that you are able to join Zoom meetings prior to the start of class. [Link to be shared prior to the start of class]

Undergraduate Student Research Methods Course

Webcam and Microphone: We will be having significant group interactions online and thus a functioning webcam and microphone are necessary to facilitate these interactions. If you do not have access to a webcam or microphone please contact your instructors for assistance.

Course Structure and Components

Group Work and Participation: We expect you to work well in class together each day with either or both your UR2PHD groups (groups made of students from different universities) and your on-site groups (groups made of students from your own research group). You should arrive to class on time each day and be prepared to participate in all activities. We will be doing lots of different types of activities to help you apply concepts related to computer science research.

Assignments: You will have several smaller assignments that will help you apply what you have learned in class to your own research projects. These will be in the form of brief writing assignments, short quizzes, or reflections. Some of these will be done in-class and some will be done out of class.

Research Logs: Taking detailed notes and keeping track of your experimental data are extremely important aspects of doing computer science research. You will be expected to keep an online research log that you update regularly with your tasks, data, and accomplishments. You will complete these assignments independently.

LinkedIn Profile: In order to facilitate your professional development in the computer science research community, you will be building a LinkedIn profile during the course. By the end of the course you will have a fully developed profile that you will use to share the progress of your research project and you will begin making connections with the broader computer science community. You will complete this assignment independently.

Research Reflections: Since the majority of this course focuses on doing research and writing a research proposal, it is important to take time to think about your research progress as a group and as an individual. You will complete both a mid-course and an end-of-course research progress reflections where you provide feedback to yourself and your group members.

Research Proposal: The heart of this course is the writing of a research proposal. We will guide you through this process and help you structure your proposal over several weeks, starting with a literature review and ending with a fully developed proposal. You will complete this assignment with your on-site group.

Presentation: You will present your research proposal to the class at the end of the course via recording a formal presentation video similar to what you would present at a research conference. You will complete this assignment with your on-site group.

Exams and Quizzes: There are no quizzes nor exams in this course.

Undergraduate Student Research Methods Course

Evaluation and Grading

There will be multiple grading opportunities in this course, giving you many chances to do well. A summary of the various grading opportunities is given below.

Assignment	Weight	Comments
Participation	10%	11x, drop 1
Assignments	10%	~15x, drop 1
LinkedIn Profile	10%	4x steps to make a profile
Research Logs	10%	4x, drop 1
Research Reflections	10%	2x, mid and final
Final Presentation	10%	1x, due at end of course
Research Proposal	40%	Several components

You earn a grade based on your overall performance. Grades will be assigned according to your institution's grading scale and represent the extent of the demonstrated mastery of the material listed in the learning objectives. As general guidelines, composite scores of ~90% or above are an A, >80% are a B, >70% are a C, >60% are a D and below 60% are an F. Plus and minus letter grades will be used when appropriate (in accordance with your institution's policies).

Course Policies

Courtesy to your fellow students and instructor during online class sessions: While we will be holding class online, we still expect you to be courteous to each other and to your instructors. This includes muting your microphone when not speaking, not speaking over someone else, using appropriate language, and overall simply being respectful. By doing so you will help create a positive and inclusive online classroom environment where we can work together successfully!

Undergraduate Student Research Methods Course

Attendance: You must attend each class on time, and participate actively in the class activities. For each class session, you will receive a grade of Participating if you arrive on time and actively participate in class activities, or Absent/Not Participating if you are either not present, very late, or not participating. Please be on time, have your microphone ready to use, and have your webcam on to facilitate group interactions. Students who are chronically late will not receive full participation credit. Excused absences will be honored.

Absences: You are expected to attend all scheduled class sessions for your specific section. This course is not following any specific university calendar, so if your university has a holiday or break day when we have class, we still expect you to attend. If you need to miss a session, please let your instructors know ahead of time and attend the other section if possible. If you cannot attend the other section, then we will provide you with access to the class recording for your review and you can make up the assignments from that day within a certain period of time. If you routinely miss class we will reach out to you for a discussion.

Late or missing work: Late work will not be accepted. Missing work will be considered a dropped assignment score. If you have an official university excused absence, then you may be excused from the assignment in question and you do not have to make it up and it does not count as a dropped assignment.

Regrade policy: If you think your work has been graded inappropriately, you may submit a regrade request within one week of when the work is returned to you. You must submit this request in writing (i.e. email) to your instructors and give evidence for why your work should be re-graded. Note that when submitting a regrade request, the entire assignment will be regraded, not just the portion in question.

Academic Integrity: In this course, you will complete your work honestly, with integrity, and support an environment of integrity. You will get out of the UR2PHD course what you put into it. For that reason, it does not make any sense to cheat. All work in this class must be your own or the work of your group, where appropriate. ALL writing must be your own original work, or the joint work of your group where appropriate, and may not be copied from any source without proper attribution. If you have any questions or concerns about what constitutes cheating in this class, please ask the instructors as soon as the question arises. All work in this course will be clearly labeled as “individual” or “group” work. When the work is individual, we expect that you will complete the work thoughtfully on your own. You may work alongside others and discuss the work, but all writing should be yours and yours only. When the work is group-based, you will submit a single submission for your entire group, and you will all receive the same grade (with some limited exceptions, see specific assignments for details).

Undergraduate Student Research Methods Course

General AI policy: Generative Artificial Intelligence (genAI) tools such as ChatGPT are important resources in many fields and industries. Because these tools will be used in professional and personal contexts, we believe it is valuable for you to engage critically with these tools and explore their use in generating content submitted for evaluation in this course, including papers; take-home examinations; specified other assignments. You remain responsible for all content you submit for evaluation. You may use genAI tools to help generate ideas and brainstorm. However, you should note that the material generated by these tools may be inaccurate, incomplete, biased, or otherwise problematic. We encourage you to consider how genAI complements, supplants, or fails to replace your contributions and abilities. If you include content (e.g., ideas, text, code, images) that was generated, in whole or in part, by Generative Artificial Intelligence tools (including, but not limited to, ChatGPT and other large language models) in work submitted for evaluation in this course, you must document and credit your source. Failure to properly cite sources, including AI tools for generating content, would be considered academic misconduct.

Principles for group interaction: Be respectful. Be sensitive. Be aware. Promote Others.

UR2PHD is about building a community where everyone feels supported, included, empowered and safe. To promote this environment, it is imperative that everyone adhere to the communication guidelines below:

- Treat your classmates with respect.
- Be thoughtful and open in discussion.
- Be aware and sensitive to different perspectives.
- Build one another up and encourage one another to succeed.
- Actively ensure that everyone is contributing to the discussion.

The following behavior is promoted:

- Recognizing that not everyone's experience is equal: racism, sexism, ableism, homophobia or any combination systemically disadvantages some more than others.
- Acknowledging the bias in your own perspective.
- Amplifying the voices of classmates, particularly those who are from groups that are often overlooked.
- Really listening with an intent to understand (instead of thinking about your own next statement).
- Phrasing discussion around ideas, not people.

The following behavior should be avoided:

- Using insulting, condescending, or abusive words.
- Offensive jokes of any kind, even if you don't think it's offensive to anyone present.
- Hitting on/flirting with groupmates or other classmates in the context of work for this course.
- Using all capital letters in written communication, which comes across as SHOUTING.
- Posting copyrighted material.

Undergraduate Student Research Methods Course

Expectations of online etiquette: Here are few do's and don'ts about communicating in your course through emails or in online discussion forums:

Do...

- Ask questions and engage in conversations as often as possible—feel free to contact the instructor via the discussion forum for questions or via email or other communication.
- Be patient and respectful of others and their ideas and opinions they post online.
- Remember to be thoughtful and use professional language. Keep in mind that things often come across differently in written text, so review your writing before posting.
- Be prepared for some delays in response time, as "virtual" communication tends to be slower than "face-to-face" communication.
- Contact the instructor if you feel that inappropriate content or behavior has occurred as part of the course.
- Check the syllabus and course policies stated by your instructor to know what to expect about your instructor's turnaround time for responding.

Do NOT...

- Use inappropriate language—this includes, but is not limited to, the use of curse words, swearing, or language that is derogatory.
- Post inappropriate materials—for example, accidentally posting/showing a picture that is not appropriate for the course content.
- Post in ALL CAPS, as this is perceived as shouting and avoiding abbreviations and informal language ("I'll C U L8R").
- Send heated messages even if you are provoked. Likewise, if you happen to receive a heated message, do not respond to it.
- Send an email or post to the entire class, unless you feel that everyone must read it.