UCLA Samueli School of Engineering	**Undergraduate Research Program**

ENGINEERING 24 - Finding an Undergraduate Research Opportunity Seminar
Course Syllabus

Undergraduate Research Program

Spring Quarter 2023

Lecturer: William Herrera
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Lecture: Tuesdays 2pm-4pm
Location: Eng VI Room 134 (Cohen Room)

Course Communication: BruinLearn
Announcements, lecture slides, assignments, and other course materials will be posted on the course website.

Group Tutors:
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Office Hours: William Herrera:
Office Hours Link: Same as lecture
Peer Advisors Office Hours Link: https://ucla.zoom.us/j/93345845915

COURSE OVERVIEW:
Finding an Undergraduate Research Opportunity Seminar is designed to engage engineering students, primarily those without prior experience, in the process of soliciting, securing, and beginning research. Students will learn about the various methods as well as resources they can utilize to obtain a lab position. *Finding an Undergraduate Research Opportunity Seminar* will encourage students to explore opportunities and then provide guidance on how to approach those openings. This course is also designed to provide students a smooth transition into their research lab.

COURSE PURPOSE:
The purpose of *Finding an Undergraduate Research Opportunity Seminar* is to encourage undergraduate engineering research participation. Students enrolled in this seminar should be able to obtain and start in a lab by the end of the quarter. Students will not only learn about ways to apply for openings, but also actions needed to begin research.

COURSE FORMAT:
Class time will be focused on lectures, workshops, and labs. Students will meet for weekly section meetings in addition to course materials, assessments, and assignments. Due to the participation based nature of this course, class

attendance is extremely important. Missing a class will likely mean the student is missing important information provided by a guest speaker or the instructor. Students are expected to be actively involved in class exercises and discussions.

GRADING AND BEHAVIORAL EXPECTATIONS:

Grading for this course will be on a P/NP (Pass/Not Pass) basis and reflect students' completion of reading and reflective assignments, section meetings, and active discussions. Students are expected to be on time, attend each class, and actively participate.

Academic Honor Code: Students are expected to follow the academic honor code established by The College at UCLA and adhere to the True Bruin Ethics and Values. http://www.truebruin.ucla.edu/statement.htm

Americans with Disabilities Act: Students with disabilities who need academic assistance and/or accommodation should be registered appropriately with the UCLA Students with Disabilities Office and bring a letter to the instructor indicating the need for accommodation.

COURSE RESOURCES

- URP Website: https://www.seasoasa.ucla.edu/undergraduate-research-program/

Additional resources will be posted on the course website.

COURSE OBJECTIVES:

1. Students will learn about the commitment of a research lab and how to get course credit for conducting research with a faculty member.

2. Students will learn about sites and resources where they can explore research openings.

3. Students will learn to apply for a lab position through emailing and online applications.

4. Students will learn to evaluate an offer and secure their desired lab.

5. Students will view samples and create their resumes and cover letters tailored to research opportunities.

6. Students will learn from sample technical presentations and research plans and create their own presentations in order to better communicate their research

7. Students will learn about the three main communication formats of a published research: oral, written, and visual.

8. Students will learn about possible formal research program opportunities and how to apply for them.

COURSE REQUIREMENTS:

Following are the requirements for this course: class participation and attendance, a resume, a cover letter, an elevator pitch, a technical presentation, and a research plan

Class Participation and Attendance: Students are expected to complete all assignments on the date which they are due and come to class prepared to discuss them. To get the most out of this interactive course, it is important that students show up on time. Attendance is essential in order to truly learn and apply professional skills in real situations. It is the student's responsibility to inform the instructor prior to class absence. **Students who miss more than two classes will**

receive a No Pass grade. Use of laptops and cell phones during class is prohibited unless approved by the instructor.

Resume :

After viewing samples handed out in this course, create your own resume highlighting skills that are relevant to a possible research position. Make sure to make this resume as specific as possible. **The resume is due during the Week 4 class (April 19).**

Cover Letter:

One important component to your research application is your cover letter. With the template and examples given in class, create your own cover letter for a lab opening. This letter should include your passion, motivation, and qualifications for this opportunity. **The cover letter is due during the Week 4 class along with the resume (April 19).**

Elevator Pitch:

One important component to your research solicitation is your elevator pitch introduction. With the template and examples given in class, you will prepare your introduction and practice with engineering graduate students. This introduction will explain who you are and why you are interested in the research lab. **The elevator pitch is due during the Week 5 class (April 26).**

Curriculum Vitae:

One important component to your research application is your CV. With the template and examples given in class, you will prepare and share your CV with your classmates. Your CV will go into greater detail about you and your accomplishments. **The CV is due during the Week 5 class (April 26).**

Technical Presentations:

One important part of communicating research is the technical oral presentation. Throughout the course, students will learn to format and present a research PowerPoint. Students will then create their own technical presentations as one of the assignments in this class. **The 1st technical presentation is due during the Week 7 or 8 class (depending on your cohort grouping).**

Students will review a journal article assigned in class. With the templates and example presentation given in class, students will present a journal article review TPL in class. At the end of the quarter, students who have secured a research lab position will present an introduction to his/her research project, while those who have not secure a position will present his/her research plan, a detailed outline of steps towards securing a position in the near future. **The 2nd technical presentation is due during Week 10 or Finals Week.**

COURSE GRADING:

This course (P/NP) will be graded out of 100 points. A score of 70 points or higher must be attained in order to receive a passing grade for the course. Course attendance is extremely important. Please note that you cannot miss more than 2 lectures in order to receive a passing grade. Point breakdowns are included below:

Resume (15 Points)	**Pass/No Pass Rubric:**
Cover Letter (10 Points)	
Curriculum Vitae (10 Points)	Pass: ≥70
Elevator Pitch (10 Points)	No Pass: <70
1st Technical Presentation (15 Points)	
2nd Technical Presentation or Research Plan (15 Points)	
Attendance (25 Points)	

ACADEMIC INTEGRITY

- UCLA expects and requires all of its students to act with honesty and integrity and respect the rights of others in carrying out all academic assignments and projects.
- Working in groups is allowed and encouraged. However, submitting the work of others, cheating, and plagiarism are unacceptable. The key to working in an effective group is compiling input from all members and making equal contributions.
- In accordance with UCLA policy, any cases of suspected cheating or academic dishonesty will be reported to the Dean of Students Office and the Department of Student Affairs. Sanctions may include zero credit to an assignment or a no-pass. If warranted, a student may be disqualified, suspended, or expelled from the School of Engineering. It is your responsibility to know and understand the University Academic Integrity Policy and the UCLA Student Code of Conduct (http://www.deanofstudents.ucla.edu/).

ADDITIONAL INFORMATION:

- Counseling and Psychological Services (CAPS) exists to support your mental health needs as you pursue your academic goals. CAPS services are designed to foster the development of healthy well-being necessary for success in a complex environment. A variety of services are available including: crisis counseling by phone 24/7, emergency intervention, individual counseling and psychotherapy, group therapy, psychiatric evaluation and treatment, educational programs and workshops, and campus mental health and well promotion. Visit http://www.counseling.ucla.edu/ for more information or call (310) 825-0768. For emergencies, please contact 911. CAPS also offers services in 6288 Boelter Hall during Weeks 5-10 Friday from 1-3 PM.
- Students requesting accommodations for a disability, including additional time or resources for taking exams, must be registered with the UCLA Center for Accessible Education (CAE; http://www.cae.ucla.edu/) and must submit appropriate documentation from the CAE.
- Title IX prohibits gender discrimination, including sexual harassment, domestic and dating violence, sexual assault, and stalking. If you have experienced sexual harassment or sexual violence, you can receive confidential support and advocacy at the CARE Advocacy Office for Sexual and Gender-Based Violence, 1st Floor Wooden Center West, CAREadvocate@caps.ucla.edu, (310) 206-2645. In addition, Counseling and Psychological Services (CAPS) provides confidential counseling to all students and can be reached 24/7 at (310) 825-0768. You can also report sexual violence and sexual harassment directly to the University's Title IX Coordinator, 2241 Murphy Hall, titleix@conet.ucla.edu, (310) 206-3417. Reports to law enforcement can be made to UCPD at (310) 825-1491.
- Faculty, Lecturer, and Group Facilitators are required under the UC Policy on Sexual Violence and Sexual Harassment to inform the Title IX Coordinator and should they become aware that you or any other student has experienced sexual violence or sexual harassment.
- Wellness support is offered by Resilience in the Student Experience (RISE), a physical extension of CAPS. Find out more at https://risecenter.ucla.edu/.

ASSIGNMENT FORMAT:

BruinLearn UPLOADS	IN CLASS INTERACTIVE SHARE OUTS
● **Resume, Cover Letter, CV**	● **Resume, CV, and Cover Letter Drafts**
● **Elevator Pitch**	● **Lab Solicitation Emails**
● **Lab Solicitation Emails**	● **Questions about Journal Articles**
● **Questions about Journal Articles**	● **Elevator Pitch**
● **Research Plan Presentation**	

COURSE SCHEDULE: (dates in blue to be changed)

Week 1: Research Exploration (March 31) **Objectives:** ● Introduction to finding research ● Utilizing UCLA resources **Class Activities:** ● Ice Breaker ● Content: Research Lab Structures and Hierarchy ● Content: Tutorial on how to utilize UCLA Research Portal and other online resources ● Content: Graduate student presentations on research	**Assignment:** ● Focus 2 Assessments ● Ikigai Vocational Personality Test ● Myers-Briggs Assessment ● Access and familiarize with UCLA Research Portal ● Visit departmental websites, individual faculty lab websites, and/or Undergraduate Research Portal to identify 3-4 labs you would like to solicit ● Complete ENGR 24 Pre-Survey DUE: Week 2
Week 2: Creating a Competitive Resume and CV (April 7) **Objectives:** ● Properly format a resume with necessary components ● Properly format a CV with necessary components **Class Activities:** ● Content: Overview of components of a professional resume ● Content: CV Components	**Assignment:** ● Create 3 drafts of a research resume for the 3 programs/labs you want to apply to ● Create a CV (due week 3) ● Create a Resume (due week 4) DUE: Week 3
Week 3: Cover Letter (April 14) **Objectives:** ● Write a coherent cover letter **Class Activities:** ● Content: Overview of the components of a professional cover letter	**Assignment:** ● Create 3 drafts of a cover letter for the 3 programs you want to apply to DUE: Week 4
Week 4: Soliciting a Lab and Elevator Pitch (April 21) **Objectives:** ● How to solicit potential research faculty members ● Email desired faculty members/graduate students for research opportunities ● Create an effective elevator pitch **Class Activities:** ● Content: Solicitation Emails ● Review sample solicitation emails ● Content: Introduction to Elevator Pitch	**Assignment:** ● Prepare 3-4 lab solicitation emails or apply through Undergraduate Research Portal ● Submit video recording of your elevator pitch DUE: Week 5
Week 5: Finding & Deciphering Journal Articles (April 28) **Objectives:** ● How to find journal articles? ● Deciphering research journal articles	**Assignment:** ● Send 3-4 lab solicitation emails or apply through Undergraduate Research Portal ● Find and read a review journal article from one of the 3-4 labs you have solicited

● Learn different methods to publish research: oral presentations, written paper, and visual poster **Class Activities:** ● Content: How to find journal articles using Google Scholar and PubMed? ● Content: Tutorial on how to decipher journal articles	● Write down 5-10 questions about the journal article and the lab's research ● Attend faculty/graduate student office hours to ask your journal article research questions DUE: Week 6
Week 6: Introduction to TPL (May 5) **Objectives:** ● Introduction to Technical Presentations **Class Activities:** ● Content: Tutorial on how to decipher journal articles ● Content: Present a sample Technical Presentation	**Assignment:** ● Re-read research paper you found ● Read and critique the selected paper ● Watch and score 2 sample technical presentations ● Start drafting your 10-12 minute journal review technical presentation DUE: Week 7
Week 7: Paid Research Programs and Communicating Research (May 12) **Objectives:** ● How to find and apply to formal/paid research programs ● How to ask professors for letters of recommendation ● How to publish research? Methods of published research: oral presentation, written paper, and visual poster **Class Activities:** ● Content: Overview of formal/paid academic year and summer research programs ● Content: Browse through sample of REU programs, Samueli URP, and UCLA SURP ● Content: Overview of on-campus research journals ● Content: Overview of research conferences	**Assignment:** ● Find 3-4 paid research programs that you're interested in applying for ● Find a list of research conferences in your major field or research interest ● Find funding application sites for research conferences ● Record and upload a 10-12 minute journal review Technical Presentation DUE: Week 8
Week 8: Intro to Research Plan (May 19) **Objectives:** ● Introduction to Research Plan presentation **Class Activities:** ● Present research plan presentation	**Assignment:** ● Watch and score 2 sample research plan presentations (Due week 9) ● Prepare and submit a 10-12 minute RECORDED research plan presentation DUE: Week 10
Week 9: Technical Presentation Lab #2 (May 26) **Objectives:** ● Technical Presentation Lab presentation	**Assignment:** ● Update your Linkedin profile ● Finalize your Research Plan/ 2nd Technical Presentation

Class Activities:
   ● Provide feedback to the presenters
   ● Onboarding
   ● Linkedin
   ● Publishing research
	● Attend Undergraduate Research week event (May 23rd - 27th) and write a short reflection
	      ○ (https://sciences.ugresearch.ucla.edu/research-week/)
	
	DUE: Week 10

Week 10: Take Away and Next Steps (June 2)
 	
Objectives:
   ● Recognizing steps that should be taken to achieve career goals
Class Activities:
   ● Review of grading scheme and final scores
   ● Feedback forms and discussion
	Assignment:
	   ● Complete post-course survey and MyUCLA class evaluations
	   ● Have a great summer break!

Finals Week: Final scores posted!	