

**Research Proposals for Undergraduate Research (BIO/CH398A&B)**  
**Spring 2024**  
**Course information & Syllabus**

**COURSE DESCRIPTION**

In this course, you will learn how to write effective research proposals. You will choose a mentor and research topic and work with them to write a research proposal. The research proposal will detail in depth the research project students plan to do in the upcoming year. All the students will participate in the writing process and the peer review process. You will also present and defend your research proposal. This course will be taken at least the semester before you enroll in the two-semester senior capstone research project course.

**COURSE OBJECTIVES**

- Develop and communicate innovative ideas using knowledge in chemistry and biological sciences for societal impact.
- Work collaboratively with peers from a variety of cultural and scientific backgrounds and to promote an inclusive and supportive professional environment.

**COURSE LEARNING OUTCOMES**

**After successful completion of this course, students will be able to:**

- Conduct literature review for a specific topic of interest and analyze journal articles.
- Formulate research plans.
- Write a research proposal highlighting the significance, scope of the research and research methodology.
- Communicate and defend research plans.

**Prerequisites** CH 189 and CH 301

**INSTRUCTOR**

Instructor Name: Dr. Sessa Alluri

Email address: [salluri@stevens.edu](mailto:salluri@stevens.edu)

Office hours: Wednesday 10am -11am or by appointment (Zoom/In-person)

**MEETING TIME**

Class meeting for BIO/CH398A: Tuesday 11:00AM -11:50AM in Babbio Center 210

Class meeting for BIO/CH398B: Wednesday 11:00AM -11:50AM in Babbio Center 210

## **RECOMMENDED RESOURCES**

Selected resources and articles on writing research proposals available on Canvas

Suggested Books: ACS Guide to Scholarly Communication, 2020 and The ACS Style Guide, American Chemical Society, 2006, ISBN: 9780841239999

## **GRADING**

Pass/Fail

F automatically assigned if do not submit research proposal or present an oral defense of research proposal.

Course activities	Percentage
Attendance	10%
Homework/Writing assignments/faculty interview	30%
Written Research Proposal	35%
Oral Defense of Research Proposal	25%

## **TENTATIVE SCHEDULE**

Any changes to the schedule will be announced in class and posted on Canvas

	Topic(s)	Reading(s)	HW
<b>week 1</b> BIO/CH398B (W 1/17) BIO/CH398A (T 1/23)	Introduction to Research Proposals Discuss faculty interview questions		Conduct at least one faculty interview and complete a worksheet (1)
<b>week 2</b> BIO/CH398B (W 1/24) BIO/CH398A (T 1/30)	Basics of Research Proposal Writing and Scientific Writing/Citing Sources	Selected resources	Worksheet on writing (2)
<b>week 3</b> BIO/CH398B (W 1/31) BIO/CH398A (T 2/6)	Research in CCB Department <b>Part I: Biology focus</b> Faculty discuss research: (Faculty invited: Liang, Perekatt, Iwanicki, Lee)	Selected articles, abstracts and PowerPoints provided by faculty	
<b>week 4</b> BIO/CH398B (W 2/7) BIO/CH398A (T 2/13)	Research in CCB Department <b>Part II: Chemistry and Chemical biology focus</b> Faculty discuss research: (Faculty invited: Sharma, Zhang, Paliwal, Wang, Alluri, Muisener)	Selected articles, abstracts and PowerPoints provided by faculty	

<b>week 5</b> BIO/CH398B (W 2/14) BIO/CH398A (T 2/20)	<u>Searching the Literature</u> <u>Vicky Orlofsky, Stevens Library</u>	Selected articles	Worksheet on literature searching (3)
<b>No Class</b> BIO/CH398B (W 2/21)	<b>Wednesday is Monday Schedule</b>		
<b>week 6</b> BIO/CH398A (T 2/27) BIO/CH398B (W 2/28)	Effective writing/ Research Proposal guidelines	ACS Style Guide	
<b>week 7</b> BIO/CH398A (T 3/5) BIO/CH398B (W 3/6)	Report on faculty interviews		Structure of a Journal Article (4)
<b>No Class</b> BIO/CH398A (T 3/12) BIO/CH398B (W 3/13)	<b>SPRING BREAK NO CLASSES</b>		
<b>week 8</b> BIO/CH398A (T 3/19) BIO/CH398B (W 3/20)	<b>CCB Research Lab Tours</b>		
<b>week 9</b> BIO/CH398A (T 3/26) BIO/CH398B (W 3/27)	<u>Research proposal writing</u> <u>Citations: Vicky Orlofsky</u>	Selected articles/ACS style guide	Submit Topic and Research advisor on Canvas (5)
<b>week 10</b> BIO/CH398A (T 4/2) BIO/CH398B (W 4/3)	The Peer Review Process/Topic discussion	Selected articles/ACS style guide	Work on research proposal Draft (6)
<b>week 11</b> BIO/CH398A (T 4/9) BIO/CH398B (W 4/10)	Panel with Graduate Students and Undergraduate students		Peer review draft proposals (7)
<b>week 12 &amp; 13</b> BIO/CH398A (T 4/16, 4/23) BIO/CH398B (W 4/17, 4/24)	Student Presentations: (5-7 min presentations and 2-3 min Q&A: total 10-12 min group or individual) Faculty and graduate students invited to attend.		Prepare a presentation on research proposal/peer review of colleague's presentations (8)
<b>week 14</b> BIO/CH398A (T 4/30) BIO/CH398B (W 5/01)	Student Presentations contd.  Last Day to Submit Paper		Survey (9)  Paper (10)

## **ACADEMIC INTEGRITY**

### Undergraduate Honor System

Enrollment into the undergraduate class of Stevens Institute of Technology signifies a student's commitment to the Honor System. Accordingly, the provisions of the Stevens Honor System apply to all undergraduate students in coursework and Honor Board proceedings. It is the responsibility of each student to become acquainted with and to uphold the ideals set forth in the Honor System Constitution. More information about the Honor System including the

constitution, bylaws, investigative procedures, and the penalty matrix can be found online at <http://web.stevens.edu/honor/> ([Links to an external site.](#))

The following pledge shall be written in full and signed by every student on all submitted work (including, but not limited to, homework, projects, lab reports, code, quizzes and exams) that is assigned by the course instructor. No work shall be graded unless the pledge is written in full and signed.

***“I pledge my honor that I have abided by the Stevens Honor System.”***

#### Reporting Honor System Violations

Students who believe a violation of the Honor System has been committed should report it within ten business days of the suspected violation. Students have the option to remain anonymous and can report violations online at [www.stevens.edu/honor/](http://www.stevens.edu/honor/) ([Links to an external site.](#))

### **LEARNING ACCOMMODATIONS**

Stevens Institute of Technology is dedicated to providing appropriate accommodations to students with documented disabilities. The Office of Disability Services (ODS) works with undergraduate and graduate students with learning disabilities, attention deficit-hyperactivity disorders, physical disabilities, sensory impairments, psychiatric disorders, and other such disabilities in order to help students achieve their academic and personal potential. They facilitate equal access to the educational programs and opportunities offered at Stevens and coordinate reasonable accommodations for eligible students. These services are designed to encourage independence and self-advocacy with support from the ODS staff. The ODS staff will facilitate the provision of accommodations on a case-by-case basis.

For more information about Disability Services and the process to receive accommodations, visit <https://www.stevens.edu/office-disability-services> ([Links to an external site.](#)). If you have any questions please contact: Phillip Gehman, the Director of Disability Services Coordinator at Stevens Institute of Technology at [pgehman@stevens.edu](mailto:pgehman@stevens.edu) or by phone 201-216-3748.

#### *Disability Services Confidentiality Policy*

Student Disability Files are kept separate from academic files and are stored in a secure location within the Office of Disability Services. The Family Educational Rights Privacy Act (FERPA, 20 U.S.C. 1232g; 34CFR, Part 99) regulates disclosure of disability documentation and records maintained by Stevens Disability Services. According to this act, prior written consent by the student is required before our Disability Services office may release disability documentation or records to anyone. An exception is made in unusual circumstances, such as the case of health and safety emergencies.

## **INCLUSIVITY**

### *Name and Pronoun Usage*

As this course includes group work and class discussion, it is vitally important for us to create an educational environment of inclusion and mutual respect. This includes the ability for all students to have their chosen gender pronoun(s) and chosen name affirmed. If the class roster does not align with your name and/or pronouns, please inform the instructor of the necessary changes.

### *Inclusion Statement*

Stevens Institute of Technology believes that diversity and inclusiveness are essential to excellence in academic discourse and innovation. In this class, the perspective of people of all races, ethnicities, gender expressions and gender identities, religions, sexual orientations, disabilities, socioeconomic backgrounds, and nationalities will be respected and viewed as a resource and benefit throughout the semester. Suggestions to further diversify class materials and assignments are encouraged. If any course meetings conflict with your religious events, please do not hesitate to reach out to your instructor to make alternative arrangements.

You are expected to treat your instructor and all other participants in the course with courtesy and respect. Disrespectful conduct and harassing statements will not be tolerated and may result in disciplinary actions.

## **MENTAL HEALTH RESOURCES**

Part of being successful in the classroom involves a focus on your whole self, including your mental health. While you are at Stevens, there are many resources to promote and support mental health. The Office of Counseling and Psychological Services (CAPS) offers free and confidential services to all enrolled students who are struggling to cope with personal issues (e.g., difficulty adjusting to college or trouble managing stress) or psychological difficulties (e.g., anxiety and depression). Appointments can be made by phone (201-216-5177).

## **EMERGENCY INFORMATION**

In the event of an urgent or emergent concern about the safety of yourself or someone else in the Stevens community, please immediately call the Stevens Campus Police at 201-216-5105 or on their emergency line at 201-216-3911. These phone lines are staffed 24/7, year-round. For students who do not reside near the campus and require emergency support, please contact your local emergency response providers at 911 or via your local police precinct. Other 24/7 national resources for students dealing with mental health crises include the National Suicide Prevention Lifeline (1-800-273-8255) and the Crisis Text Line (text “Home” to 741-741). If you are concerned about the wellbeing of another Stevens student, and the matter is *not* urgent or time sensitive, please email the CARE Team at [care@stevens.edu](mailto:care@stevens.edu). A member of the CARE Team will respond to your concern as soon as possible.

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