CHM 49900 UNDERGRADUATE RESEARCH IN CHEMISTRY
COURSE SYLLABUS AND POLICIES FALL 2025/SPRING & SUMMER 2026

Course Information:

CHM 49900 "Special Assignments"; CRN, meeting time, course instructor-variable; 1-5 credits, meeting time TBA, instructional modality-In Person (unless approved by instructor). For additional information contact Christine Schertz, cschertz@purdue.edu, 494-5310, WTHR 116k. This class counts as Honors Credits for the Honors College.

Course Description

CHM 49900 is a variable credit course for students participating in undergraduate research under the guidance of a Chemistry Department faculty member. The course may be repeated.

In CHM 49900, the student works directly with the faculty member, research advisor, or other scientists, postdoctoral fellows, and graduate students in the research group who act as the student's mentor. The student's research project is typically based on the research advisor's research interests, which allows the student to draw upon the mentor's expertise and resources and allows the faculty member to develop a productive research program. The mentor should meet regularly with the student to make research plans, assess risks associated with the proposed research, and review results. The student is encouraged to eventually take primary responsibility for a project and to make substantial input into its direction. The mentor should assist the student in building confidence, should offer encouragement when necessary, and provide guidance and assistance for the student's future education and career development.

Course Objectives and Learning Outcomes

1. Provide students with an official record of participation in undergraduate research.
2. Provide a practical means for professional training beyond regular coursework.
3. Learn research methodologies, build analytical thinking and problem-solving skills including:
    - Finding and evaluating relevant primary literature and background information.
    - Analyzing scientific results, papers, and presentations.
    - Engaging in safe, ethical, and responsible scientific research.
    - Learning and practicing all laboratory safety guidelines and procedures
4. Develop technical and professional written and verbal communication skills, including:
    - Explaining main scientific focus of their research, as well as how if contributes to new knowledge in the discipline.
    - Applying appropriate protocols for documenting research
    - Effectively communicate findings through essays, research papers, posters, and/or presentations.
5. Develop teambuilding and research project management skills.
    - Establishing and maintaining a positive relationship with their research mentor.
    - Agreeing on common goals and expectations.
    - Working as a team towards a common goal by defining roles and responsibilities of each team member.

Course Expectations/Grading

1. Joining a research group results from a mutual agreement between the student and the faculty member.
2. Credit hours are by arrangement: one credit hour of research requires a commitment of 3-5 hours/week, depending on the faculty member. Instructions for adding research credits can be found at this link.
3. Grading varies by professor; the student must discuss the course requirements with their research advisor at the beginning of each semester, as well as details of their work schedule. Requirements may include (but are not limited to) working the amount of time agreed upon doing research, group meeting attendance, assignment of written reports, oral reports, poster presentations, etc. Your grade may also be based on more qualitative issues, such as work initiative, experimental results, consistent contact with lab members and mentors, or attention to detail, for example. Please discuss these with your professor.
4. Time spent in lab per week will include time performing research but can also include attendance at group meetings or seminars.
5. Students are required to undergo departmental safety training (see https://www.chem.purdue.edu/chemsafety/SafetyClasses.html for updated information), as well as any laboratory-specific training.

Absence Policy

CHM 49900 is an experiential course; therefore, you must be 'present' in lab at the agreed upon times and/or for the agreed upon amount of time per week. If you need to miss your arranged time, you must contact your mentor and/or research advisor to let them know you will be absent and to arrange to make up the hours. Future absences can be arranged with your mentor on a case-by-case basis. When conflicts or absences can be anticipated, such as for many University-sponsored activities and religious observations, the student should inform the instructor of the situation as far in advance as possible. For unanticipated or emergency absences when advance notification to the instructor is not possible, the student should contact the instructor as soon as possible by email or phone. If they are unable to contact their instructor, contact the Chemistry Main Office at chemoffice@purdue.edu.

For cases that fall under excused absence regulations, you or your representative should contact or go to the Office of the Dean of Students (ODOS) website to complete appropriate forms for instructor notification. Under academic regulations, excused absences may be granted by ODOS for cases of grief/bereavement, military service, jury duty, parenting leave, or emergent medical care. The processes are detailed, so plan ahead.

Accessibility Policy

If you require accommodations to access course activities or materials, the accommodations must be described and approved by Disability Resource Center, Room 830, Young Hall (49-41247, www.purdue.edu/drc). To implement accommodations, you must follow the instructions listed as "Responsibilities of the Student" in the course accessibility letter sent to you by the DRC. **Send one copy of the course accessibility letter (CAL) to the Course Instructor within the first two weeks of the semester to discuss your accommodations.** If you have accommodations identified and approved during the semester,

you are encouraged to initiate a meeting with the Instructor tor within one (1) week of the date of the CAL to discuss the accommodations. Timely notification of the Instructor is critical for timely implementation. You should also consider contacting the DRC if you have a chronic illness which will cause you to miss or be late to your agreed upon lab times.

Academic Dishonesty and Research Misconduct

Academic dishonesty (i.e., cheating) is a serious offense. Plagiarism will not be tolerated. You must submit your own work: do not copy from others or use others' data, and do not copy information from texts, manuals, or the internet without proper citations. Penalties for such offenses can include a failing grade in the course, a report to the Office of Student Rights and Responsibilities (OSRR) Office, or expulsion from the University. Please read the OSRR's page on Academic Integrity. Students can also email or phone concerns anonymously to the OSRR.

Students are expected to maintain high ethical standards. Laboratory notebooks should be complete, and all data should be properly recorded and analyzed. Results should be effectively communicated through proper writing and presentation skills. Do not compromise data, fabricate results, or plagiarize any published paper. The data, results, samples, interpretations, and other work generated in your research lab belong to the lab. Do not send data to anyone or present any research without approval from your research advisor. Purdue's Research Misconduct policy is listed at this link .

Any use of Artificial Intelligence (AI) in this course should be approved by the research advisor. Any content, ideas, or assistance obtained through AI tools must be appropriately cited, similar to any other reference or source. Misuse of AI tools in coursework, which includes but is not limited to producing unoriginal work, uncited use of AI-generated content, or unauthorized assistance on assessments, will be considered a breach of academic integrity. Consequences will follow Purdue's policies on academic dishonesty as detailed in this syllabus, which may include grade penalties, course failure, or more severe disciplinary actions.

Nondiscrimination Policies:

A hyperlink to Purdue's full Nondiscrimination Policy Statement is included in each course Brightspace under University Policies and at this link: https://www.purdue.edu/home/ea_eou_statement/

Emergencies

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control. Relevant changes to this course will be posted onto Blackboard or can be obtained by contacting the instructors via email or phone. You are expected to read your @purdue.edu email on a frequent basis. Important emergency preparedness resources can be found here: https://www.purdue.edu/ehps/emergency_preparedness/

Mental Health/Wellness:

If you're struggling and need mental health services: Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of mental health support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at 765-494-6995 during and after hours, on weekends and holidays, or by going to the CAPS office on the second floor of the Purdue University Student Health Center (PUSH) during business hours.

If you find yourself beginning to feel some stress, anxiety and/or feeling slightly overwhelmed, try Therapy Assistance Online (TAO), a web and app-based mental health resource available courtesy of CAPS.

If you need support and information about options and resources, please contact or see the Office of the Dean of Students. Call 765-494-1747. Hours of operation are M-F, 8 am- 5 pm.

If you find yourself struggling to find a healthy balance between academics, social life, stress, etc., sign up for free one-on-one virtual or in-person sessions with a Purdue Wellness Coach at RecWell. Student coaches can help you navigate through barriers and challenges toward your goals throughout the semester. Sign up is free and can be done on BoilerConnect.

EMERGENCY NOTIFICATION PROCEDURES are based on a simple concept – if you hear a fire alarm inside, proceed outside. If you hear a siren outside, proceed inside.

- **Indoor Fire Alarms** mean to stop class or research and immediately **evacuate** the building. Proceed to your Emergency Assembly Area away from building doors. **Remain outside** until police, fire, or other emergency response personnel provide additional guidance or tell you it is safe to leave.
- **All Hazards Outdoor Emergency Warning Sirens** mean to immediately seek shelter (**Shelter in Place**) in a safe location within the closest building. "Shelter in place" means seeking immediate shelter inside a building or University residence. This course of action may need to be taken during a tornado, a civil disturbance including a shooting or release of hazardous materials in the outside air. Once safely inside, find out more details about the emergency. **Remain in place** until police, fire, or other emergency response personnel provide additional guidance or tell you it is safe to leave.

EMERGENCY RESPONSE PROCEDURES:

- Review the **Emergency Procedures Guidelines** https://www.purdue.edu/emergency_preparedness/flipchart/index.html
- Review the **Building Emergency Plan** for WTHR and BRWN here: https://www.chem.purdue.edu/chemsafety/bep.php
- Students in other buildings should see the Building Emergency Plan information posted for their location.
- In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control. Relevant changes to this course will be posted onto the course website or can be obtained by contacting the instructors or TAs via email or phone. You are expected to read your @purdue.edu email on a frequent basis.

Disclaimer

This syllabus is subject to change.

Sources:

ACS Academic Professional Guidelines document: https://www.acs.org/content/acs/en/careers/career-services/ethics/academic-professional-guidelines.html
Michael Harrison Hsieh, Lab Expecations for Lab Members
https://www.chem.tamu.edu/undergraduate/undergraduate-research.php
https://www.chem.wisc.edu/deptfiles/UndergraduateChemOffice/Courses/1194%20260%20Orr%20Syllabus%20Sp19.pdf
https://www.purdue.edu/innovativelearning/teaching/wp-content/uploads/sites/2/2023/11/BCHM-309-Syllabus-Fall-2023_pg13_14.pdf