Syllabus – Chem 299 – Prof. TEMPLATE

Course: Chem 299 - Research for Graduate Students

Term: Fall/Spring 20XX, University of California, Berkeley

Section: 0XX –

Format: In-person

Class Number: xxxxx

Prerequisites: Consent of instructor and graduate standing

Instructor: XXX; xxx@berkeley.edu

Units: Variable, 1-9.

Course Description:

Facilities are available to graduate students pursuing original investigations toward an advanced degree in Chemistry or related fields at the University of California, Berkeley. Investigations may include experiment, theory, data analysis, and dissemination of accomplishments or discoveries in the form of oral and written presentations or manuscripts submitted for peer-reviewed publication. Such work is done under the supervision and direction of a faculty member or their designee.

Course Objective(s):

Provide opportunities for graduate students to engage in original research under the direction, support, and mentorship of a faculty member in the chemistry department at UC Berkeley.

Learning Outcomes/Objectives.

Students will learn the skills and techniques necessary to complete a PhD in the field of Chemistry and ultimately become a world expert in their thesis research area. Students will show progress in the following areas related to their chosen field of study, including, but not limited to the following:

Creativity, intellectual ownership, initiative, technical proficiency, resilience, communication both orally and in writing, ability to solve challenging problems, broad understanding of relevant disciplinary background (literature), the ability to initiate new research directions aimed toward solving important scientific challenges.

Customization Area:

Additional Learning Outcomes / Objectives should be listed and described here, if necessary.

Hours and Workload:

Depending on unit enrollment, between 3 and 27 hours of outside work (not classroom instruction) per week, depending on unit enrollment. This estimate comes from UC Berkeley Academic Senate Regulation 760.

Students must be enrolled in 12 total units to be considered a full-time student and eligible for fee remission when serving as a GSR or GSI (source: UC Berkeley Graduate Division Appointment Handbook, Appointment Eligibility)

Unit definitions. According to the UC Berkeley Academic Senate Committee on Courses of Instruction Handbook, Section 2.3.1 (https://academic-senate.berkeley.edu/coci-handbook/2.3.1), which is adapted from Academic Senate Regulation 760 (Chapter 4, Article 1), one unit is "…reckoned at the rate of on unit for three hours' work per week on the part of the student…".

Prior to the start of the semester, students should review their proposed schedule of courses with their faculty mentor and establish expectations regarding the unit enrollment in Chem 299 necessary to make adequate progress on their dissertation. Students in the chemistry department typically enroll in 7-9 units of Chem 299 after their first semester.

Meeting time/format:

Independent study: There is no set classroom meeting time for Chem 299. This course provides substantial autonomy for enrolled students to use facilities in the laboratory of the faculty mentor and facilities on the UC Berkeley campus to advance our understanding of the natural world. Schedules should be discussed with the faculty mentor at the start of each semester.

Group meeting: Students enrolled in Chem 299 should also enroll in the corresponding Chem 298 course for their research advisor.

Customization Area:

Additional meeting times/formats should be described here, for example one-on-one meetings, sub-group meetings, or expectations for regular meetings between instructor and students in Chem 299.

For group meetings, students should register for the corresponding Chem 298 course.

Assignments:

Assignments in Chem 299 can vary from research group to research group. Instructors will communicate the details of these assignments to students in Chem 299, since the nature, frequency, and appropriateness of these examples may change during graduate study. The

following are examples of assignments that might be used to evaluate whether students in Chem 299 are meeting the learning objectives for the course: generation of publication-quality figures/data; generation and presentation of research reports; individual development plans or other forms of self-assessment; preparation and/or submission of manuscripts, posters, and abstracts; preparation and/or delivery of seminars; reviewing manuscripts; participating and presenting in journal clubs; proper care and use of laboratory equipment and instrumentation; making positive contributions to the overall research group environment.

Instructors will provide details of specific assignments, either in this syllabus or a separate document. Students should schedule one-on-one meetings with their faculty mentor/instructor to clarify questions about any assignments or expectations.

Customization Area:

Assignments used by individual instructors should be described here.

For group meetings, students should register for the corresponding Chem 298 course.

Expectations:

In addition to making progress on research projects, students are required to attend all group meetings, satisfactorily perform general laboratory duties that are assigned, complete all necessary safety training, wear appropriate PPE, read through and understand all relevant standard operating procedures, conduct research safely, maintain and respect laboratory infrastructure, spend research funds responsibly, maintain detailed laboratory notebooks documenting all experiments, programs and observations, document and archive data or programs in a way that is available to other group members, be an active participant in discussions, seminars, and group meetings, synthesize and propose new ideas in theory or experiment that may be interesting avenues to pursue, collaborate effectively with other group members, staff, and other colleagues as needed, and mentor others with less experience.

Students should schedule one-on-one meetings with the faculty mentor regularly throughout the semester to discuss research progress and get feedback on their performance toward meeting expectations for this course.

Grading:

Students in Chem 299 are assigned a letter grade. According to the UC Berkeley Registrar, "the work of all students on the Berkeley campus is reported in terms of the following grades:"

A+, A, A-	Excellent
B+, B, B-	Good
C+, C, C-	Fair

D+, D, D-	Barely	passed
F	Failed	

The following grading rubric will be used to assign letter grades for Chem 299:

A+ = Advanced mastery - exceeds expectations for learning objectives..
A = Meets expectations for learning objectives.
B = Approaching expectations, not meeting some (i.e. 1-4) of the learning objectives.
C = Below expectations, not meeting many (5+) of the learning objective.

Note: According to UC Berkeley Graduate Policy, students must maintain a cumulative 3.0 GPA (equal to B or above) to be eligible for an academic appointment (GSR or GSI) and fee remission (see also Guide to Graduate Policy, Section E1.5)

Students should schedule regular one-on-one meetings with the faculty mentor throughout the semester to obtain periodic feedback about performance and progress toward their degree.

Expectations for Professional Conduct:

Participants in Chem 299, both students and instructors, should be active contributors to a healthy work environment at all times. All interpersonal interactions between graduate and undergraduate researchers, postdocs, staff, principal investigators, group leaders, and managers fall under the professional codes of conduct and ethics (https://ethics.berkeley.edu/code-conduct). Honesty in all aspects of research is vital to professional reputations and is necessary to ensure the credibility of scientific discoveries. Plagiarism or manipulation of data or research outcomes that do not accurately reflect actual accomplishments are unacceptable and will not be tolerated in any form.

Academic Accommodations (adapted from https://dsp.berkeley.edu/faculty/resources-faculty)

UC Berkeley is committed to creating a learning environment that meets the needs of its diverse student body including students with disabilities. If you anticipate or experience any barriers to learning in this course, please feel welcome to discuss your concerns with me.

If you have a disability, or think you may have a disability, you can work with the Disabled Students' Program (DSP) to request an official accommodation. The Disabled Students' Program (DSP) is the campus office responsible for authorizing disability-related academic accommodations, in cooperation with the students themselves and their instructors. You can find more information about DSP, including contact information and the application process here: dsp.berkeley.edu. If you have already been approved for accommodations through DSP, please meet with me so we can develop an implementation plan together.

Academic Integrity

As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others.

We affirm the tenets of the UC Berkeley Honor code, holding each other accountable to the highest ideals of scholarship, integrity, and pursuit of truth. More details can be found at the following website: **https://teaching.berkeley.edu/berkeley-honor-code**.

Non-academic Support

We are fortunate to have multiple resources available at UC Berkeley. Below are some helpful links and resources.

CAPS. Counseling and Psychological Services. CAPS offers free drop-in consultation. "No problem is too big or too small." **https://uhs.berkeley.edu/caps**

UC Berkeley Ombuds Office. Need help navigating a campus-related concern or conflict? UC Berkeley Ombuds office provides a confidential place to talk through complaints and consider your options.

https://sa.berkeley.edu/ombuds

PATH to Care Center. If you feel you are in an unhealthy relationship, the PATH to Care Center is a great place to start for resources and guidance. **https://care.berkeley.edu/get-resources/**