Syllabus for Chem 280 (Nizkorodov's section)

Instructor: Prof. Sergey Nizkorodov, nizkorod@uci.edu

Quarters offered: This course is offered every Fall, Winter, Spring each year.

Location: RH 385 and collaborating laboratories

Website: https://aerosol.chem.uci.edu/seminars/index.htm

Pre-requisites: This course is open to chemistry graduate students, who are formally advised or co-advised in research by Prof. Sergey Nizkorodov (formal research advising assignments are done by the Department's Vice-Chair for Graduate Affairs).

Units: This course has variable unit value of 2-12 units. First-year students typically take enough courses to meet their full-time student requirement of 12 units, so they are not likely to sign up for more than 4 units. For continuing students, it is normal to sign up for 12 units of Chem 280.

Grading option: Satisfactory/Unsatisfactory (S/U)

Passing requirements: To achieve a satisfactory (S) grade in this course, you are expected to make progress towards your Ph.D. degree. Metrics of progress are based on the amount of experimental work, data analysis, literature research, computational work, paper writing, thesis writing, etc., done during weeks 1-10 and the finals week of the quarter. The following points form the basis for the quarterly grade, and are critical activities toward degree completion. Consistent lack of progress in five or more of these activities will serve as a basis for issuing a non-passing (U) grade.

1. Fulfil the expected UCI and Chemistry Ph.D. program requirements of the Ph.D. degree in a timely matter, most importantly:
    - First-year exam typically held at the end of the first year
    - Advancement to candidacy typically held at the start of the third year
    - Original proposal submission typically in the middle of the fourth year
    - Ph.D. defense typically held at the end of the fifth year
2. Read the literature relevant to your project (both background and to find precedent/inspiration for your current and future experiments)
3. Actively acquire new technical skills necessary to push your project forward
4. Propose creative and testable hypotheses
5. Engage in intelligent experimental planning and design
6. Draw conclusions from experimental data, and use them to guide subsequent experiments
7. Maintain a lab notebook, data, spreadsheets, etc. to record experiments and observations
8. Perform data analysis, figure creation, and manuscript writing and revision
9. Submit abstracts and manuscripts for publication that contributes to the body of work for your thesis
10. Participate in subgroup research meetings related to your project
11. Stay current with broadly relevant literature, sharing new articles with the research group/Faculty Advisor through appropriate channels
12. Meet at least bi-weekly with the faculty research advisor(s) during the quarter, keeping them informed about research progress, challenges, and any obstacles.
13. Develop a research plan with your faculty research advisor(s) to make progress on your thesis

14. Maintain and update Individual Development Plan (IDP) annually, sharing it with the faculty research advisor(s).
15. Maintain a professional Curriculum Vitae.
16. When relevant, prepare and submit fellowship or grant applications in a timely manner

Attendance policy: Students are expected to do experimental and data analysis portions of their study in RH385 laboratory and their assigned office in Rowland Hall during the week. Remote work in quieter environment with fewer distractions is acceptable for students who are in the process of writing a paper or PhD thesis. Notify the instructor if you plan to work on your studies remotely for more than a day.

Typical time commitment: There is no required time commitment. The actual time you will need to make satisfactory progress in your PhD studies depends on your time management skills. A typical PhD is based on four first-author papers, and the instructor's previous experience suggests that a strong paper requires 6-12 months of full-time work. Better organized and more experienced students would need less time to bring a project to a publication stage. The instructor's previous experience also shows that students who go beyond the minimal expectations have fewer difficulties with finding post-PhD employment and can negotiate a better starting salary, so it is advisable to organize your study schedule based on your future career ambitions.

Absence policy: Students should plan with the instructor all the expected absences due to external fellowship and internship obligations before the start of the quarter. The students should notify the instructor about unexpected absences due to sickness or family emergencies.

Communications policy: the instructor and students should aim to respond to all research related communications between each other within 24 hours.

Final exam: Students are required to provide a summary of the research results during the quarter at the end of the finals week, along with a brief plan for next quarter. A possible format is a bulleted list of accomplishments (lists of completed paper drafts, major presentations, major results) and plans.