

CHEM 299: Introduction to Chemical Research
CHEM 399: Research Problems in Chemistry
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Western Kentucky University
Summer 2021

Office: KTH 4045

Office hours: Zoom meetings by appointment

Course Description

CHEM 299 – A course designed to introduce the student to independent chemical research. Each credit hour requires ~35 hours laboratory work over the course of the term with written and oral reports of laboratory work suggested.

CHEM 399 – Special research assignments in accord with the interest of the student. Requires a minimum of 42 hours laboratory work over the term for each hour of credit. A written report of the work is required.

CHEM 299 and 399 are designed to introduce the student to independent chemical research. These courses are designed to familiarize students with the research lab environment, which is different from a teaching laboratory environment. The course aims to give students an experience in performing research tasks in an environment that depends on the students own motivation. This course requires keeping an up to date laboratory notebook and writing of a final report to your research mentor and the course instructor at the end of the semester that summarizes your research accomplishments.

Enrollment Requirement

CHEM 299 and CHEM 399 – consent of a faculty research advisor

Required Materials

Laboratory notebook (provided by department via faculty advisor)

Safety goggles

Cloth mask or other appropriate face covering

Course Objectives

Students completing CHEM 299 and CHEM 399 will be able to:

1. Perform basic research techniques specific to your project
2. Reproduce known procedures/results
3. Use current scientific literature to design experiments
4. Perform research in a safe manner
5. Keep a complete and understandable laboratory notebook
6. Draw scientific conclusions from experimental data
7. Use standard English grammar, punctuation, spelling, etc. in a final written report

Required Text and Readings

Research advisors will assign specific background reading and journal articles to their students.

Class Requirements

- Safety Seminar – All the students *must attend* a mandatory safety seminar offered by the Department of Chemistry. Attendance at the safety seminar is *required* every semester.
- Safety awareness – Students should familiarize themselves with the safety features of their specific laboratory space(s), wear appropriate clothing, and utilize safety equipment, particularly eye protection, when in the laboratory. Students should also seek laboratory-specific safety training from their research advisor and become aware of the toxicity of any chemicals with which they work.
- Work ethic – Students should plan to work the appropriate number of weekly hours in the laboratory and make efficient use of their time.
- Laboratory skills – Students will learn to plan and carry out their own experiments, and interpret the data acquired.
- Notebook – Students will keep a dated record in a bound notebook of all laboratory experiments including protocols, calculations, results, and conclusions.
- Final Report – The report should detail the research conducted by the student and will be judged by the soundness of the research procedure followed, and the thoroughness and clarity of thought evident in analyzing and critically evaluating the project results. The report is expected to 1 to 1-½ pages per credit hour pages in CHEM 299 and 1-½ to 2 pages per credit hour in CHEM 399 and should include a brief introduction, the hypothesis to be tested, discussion of results, experimental procedures, and conclusions. This report must be submitted via Blackboard by the end of the term.

Evaluation

Grades will be assessed based on the class requirements described above. It is the responsibility of the student to discuss with their research advisor the weightings applied to each of the requirements. The student must discuss what is expected in each area with their research advisor.

ADA accommodation: In compliance with University policy, students with disabilities who require academic and/or auxiliary accommodations for this course must contact the Student Accessibility Resource Center located in Downing Student Union, 1074. SARC can be reached by phone number at 270-745-5004 [270-745-3030 TTY] or via email at sarc.connect@wku.edu. Please do not request accommodations directly from the professor or instructor without a faculty notification letter (FNL) from The Student Accessibility Resource Center.

Title IX/Discrimination & Harassment: Western Kentucky University (WKU) is committed to supporting faculty, staff and students by upholding WKU's Title IX Sexual Misconduct/Assault Policy (#0.2070) at <https://wku.edu/eoo/documents/titleix/wkutitleixpolicyandgrievanceprocedure.pdf> and Discrimination and Harassment Policy (#0.2040) at https://wku.edu/policies/hr_policies/2040_discrimination_harassment_policy.pdf. Under these policies, discrimination, harassment and/or sexual misconduct based on sex/gender are prohibited. If you experience an incident of sex/gender-based discrimination, harassment and/or sexual misconduct, you are encouraged to report it to the Title IX Coordinator, Andrea Anderson, 270-745-5398 or Title IX Investigators, Michael Crowe, 270-745-5429 or Joshua Hayes, 270-745-5121. Please note that while you may report an incident of sex/gender based discrimination, harassment and/or sexual misconduct to a faculty member, WKU faculty are "Responsible Employees" of the University and MUST report what you share to WKU's Title IX Coordinator or Title IX Investigator. If you would like to speak with someone who may be able to afford you confidentiality, you may contact WKU's [Counseling and Testing Center](#) at 270-745-3159.

WKU Statement on Face Coverings in the Classroom: Out of respect for the health and safety of the WKU community and in adherence with the [CDC guidelines](#), the University requires that a cloth face covering (reusable or disposable) that covers both the nose and mouth must be worn at all times when in public areas within all buildings. Students must properly wear face coverings while in class regardless of the room size or the nature of the classroom activities. Students who fail to wear a face covering as required will be in violation of the WKU Student Code of Conduct and will be asked to comply or will face disciplinary action, including possible dismissal from the University. Accommodations to face coverings must be determined by the Student Accessibility Resource Center and documented before a student may attend class.