Introduction to Research: Chemistry 498

Dr. Steven M. Kennedy

www.millersville.edu/chemistry/faculty/kennedy/kennedy.php

Find the Request for Special Study Assignment to Enroll: http://www.millersville.edu/~forms/student/

Course Description
Chemistry 498 (Introduction to Research) is a required course for all chemistry majors. This is a course for qualified students to investigate problems in chemistry. It also provides guidance in the methods of chemical research, laboratory technics, and chemical analysis. Prerequisite: permission of the research advisor. Please consult the most current version of the Chemistry Student Handbook on the Chemistry Department webpage for details concerning how many credits are necessary for your degree option and/or ACS certification of your degree.

Course Learning Objectives

Upon completion of Chemistry 498 you should be able to...

1. Search the chemical literature to find information on the synthesis, reactions, and physical properties chemicals.
2. Plan a research project with a focus on setting reasonable research goals.
3. Plan organic reactions using the chemical literature as a guide.
4. Assess the dangers associated with chemicals prior to working with them.
5. Maintain a laboratory notebook in the format described in the required materials for this course.
6. Set up, monitor, quench, work-up, isolate, purify, and analyze chemical products of organic reactions.
7. Maintain a chemically hygienic work environment with appropriate waste disposal.
8. Communicate your research purpose, goals, plans, actions, and results via poster presentations, verbal presentations, and in written formats (experimental procedures, research reports, a thesis, and/or a scientific paper).

Minimum Required Materials:

1. Laboratory safety glasses or goggles.

Useful Websites & Resources (Please click on each link to see what online resources are recommended):

5. http://www.millersville.edu/graduate/current-student-resources/student-research-grants.php
6. https://millersville.desire2learn.com/
7. https://www.quartzy.com/
8. http://www.library.millersville.edu/libguides/chemistry
11. http://chem.chem.rochester.edu/~nvd/?page=home
Course Evaluation Checklist

- Plan & Maintain a Weekly Schedule (at least 6 hours per week per credit) 5%
- Pick a Project & Set Goals 5%
- Set-up & Maintain a Lab Notebook 5%
- Literature Searching (SciFinder, Request-It, Journal Articles, etc.) 5%
- Order, find, and/or obtain chemicals & supplies 5%
- Plan reaction, quench, work-up, isolation, and purification 5%
- NMR and other (mp, IR, MS, etc.) analysis 5%
- Weekly discussions of results, progress, ideas, and plans with advisor 5%
- Apply for funding (Noonan, NH, SRG, or other MU grant) 10%
- ChemSpider – Synthetic Pages Experimental Procedure – Advanced Draft 10%
- Poster Presentation Proof – Advanced Draft 10%
- Poster Presentation at Millersville University (College or University) 10%
- Poster Presentation (Regional or National Meeting) 10%
- Research Report, Thesis, or Scientific Paper 10%

∑ = 100%

Grade Distribution (in percentage points)

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<tr>
<th>Grade</th>
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<td>C</td>
<td>70.0 – 79.9</td>
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<td>D</td>
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Course Policies

1. Attendance is required. [http://www.millersville.edu/registrar/faculty/attendance_policy.php](http://www.millersville.edu/registrar/faculty/attendance_policy.php)
3. This is a Cooperative Environment. Become part of a team, a community, and a valued tradition.

Title IX Statement:

Millersville University and its faculty are committed to assuring a safe and productive educational environment for all students. In order to meet this commitment and to comply with Title IX of the Education Amendments of 1972 and guidance from the Office for Civil Rights, the University requires faculty members to report incidents of sexual violence shared by students to the University’s Title IX Coordinator. The only exceptions to the faculty member’s reporting obligation are when incidents of sexual violence are communicated by a student during a classroom discussion, in a writing assignment for a class, or as part of a University-approved research project. For more information on Title IX: [http://www.millersville.edu/socialeq/title-ix-sexual-misconduct/index.php](http://www.millersville.edu/socialeq/title-ix-sexual-misconduct/index.php)