



**CHE 492 - 004: Chemistry Research
Fall 2008**

Instructor : Prof. K.C. Russell

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- Prerequisites:** By agreement with Dr. Russell
An open mind and a strong desire to learn how to do science!
- Lab Times:** By arrangement (6-8 hours per week per credit hour)
- Office Hours:** M 9:00 – 10:00 am; T 1:00 – 2:00 pm; W 10:00 – 11:00 am
By appointment. I have an open door policy.
- Communication:** It is imperative that you communicate regularly with me. Thus, all students working in the lab are expected to check their e-mail account(s) regularly and are expected respond to questions in a timely manner.
- Before you begin:** Before you begin you will need to sign the lab safety agreement and take the on-line training from the Office of Environmental Safety.
[http://access.nku.edu/physicalplant/Environmental Safety/EnvironmentalSafety.html](http://access.nku.edu/physicalplant/Environmental%20Safety/EnvironmentalSafety.html)
- Learning Outcomes:** The overall goal of your undergraduate research experience is for you to develop the skills necessary to become a highly professional research scientist, whether that is in graduate school or in an industrial setting. At the end of this independent study course the student should be able to:
- 1) Possess a thorough understanding of the project. Comprehend what was being done and why. Understand the bigger picture. *This will be reflected in your end of semester report, research presentations and grant proposals.*
 - 2) Search the literature for publications related to your research and critically review those papers. You will need to do this to see how others have performed similar experiments and for background for your end of semester report, research presentations and grant proposals.
 - 3) Demonstrate skills in the synthesis of organic compounds, including isolation and complete analysis of new compounds.

Note: This syllabus is subject to change

- 4) Keep accurate and detailed records of experiments and results in a laboratory notebook as well as an organized record of all spectral data. *Your lab notebook and accompanying spectra will serve as the definitive record of the quality of your work as well as the amount of work you performed.*
- 5) Be a good laboratory citizen. This means working with and watching out for others, following safety guidelines, taking care of your lab responsibilities and keeping your area and common areas clean.
- 6) Learn to work and think independently.
- 7) Present the work (both performed and proposed) in the form of grant proposals, publication quality reports, Powerpoint and poster presentations (as requested), with the goal of publication in a peer reviewed journal. Failure to present your work will lower your grade by one letter.

For more information read *Research in the Russell Group* and the *Lab Policies Agreement*.

Grading Policy:

Your grade for research will be based on how well you achieve the outcomes stated above. Particular emphasis will be placed on your lab notebook, end of semester report, a public presentation of your work and the state in which you leave the lab for the semester. I will work with you on editing your report until it is of A quality. I will assist in as many revisions as are necessary.

Your final report is due Dec. 19, 2008

I strongly recommend you get an early start by writing up experimental procedures and summarizing important literature throughout the semester. I would be more than happy to review this material you generate it so it can be easily copied and pasted into your report.

Under certain circumstances an incomplete (I) ***may be requested by the student***. The conditions of the incomplete must be mutually agreed upon before an incomplete will be issued. However, your lab area must be pristine by the day grades are recorded or it will cost you one letter grade (see *Leaving the Lab* in either the *Lab Policies Agreement* or *Research in the Russell Group* for details).