CHEMISTRY 400-0X
Research/Seminar Syllabus
Fall 2014 (sic)

(This is an Oral-Communication Flagged Course; for details, see last page.)

Instructor:  Depends upon section number. Research mentors are the instructors for the various sections. Dr. Barbara Hopkins is responsible for overall scheduling and coordination of course.

Prerequisite:  At least sophomore level standing as a major in the chemistry department.

Format:  Independent research under the guidance of a Xavier University faculty mentor. Seminar attendance required weekly, 1 credit hour. This course may be taken multiple times in order to satisfy the requirements for a major within the chemistry department. Only one hour per semester is allowed.

Description:  A capstone course for majors within the chemistry department. Research is performed under the direction of a Xavier chemistry faculty member. Students share the results of their research and interact with outside speakers during weekly seminar sessions. A written thesis is the final product of multiple semesters of this course.

Rationale:  This course has been approved for an American Chemical Society Certified Degree program. It is intended for students majoring in Chemistry, Chemical Science or Natural Science/Chemistry Concentration. Three semesters are required for Chemistry majors. Two semesters are required for Chemical Science or Natural Science/Chemistry Concentration majors.

Attendance:  Attendance at all seminars is required. For serious reasons a student may be excused. Notice of illness or other conflicts MUST be made in person or by phone to the Chemistry Department Chair BEFORE the seminar period. Absence from seminar presentations will result in a lower grade.

Evaluation:  Students are expected to attend seminar and to meet regularly with their faculty mentor. The project work load expectations per week are defined by the research mentor. The students must write an abstract and deliver an oral presentation to the faculty and students of the chemistry department each semester. Both students and faculty evaluate the quality of the students’ presentations. Students are also required to write a formal research report each semester. The work over several semesters is expected to result in a final written thesis. Thesis format as defined by department must be followed. Senior students are also expected to present the results of their research at the annual university “Celebration of Student Research and Creative Activity”*. A lack of effort or progress toward the research goals will result in a low evaluation.

Grade Distribution:  Effort/Productivity in the Laboratory: 50%; Seminar: 25%, Thesis: 25%.

*Celebration of Student Research and Creative Activity”
For this semester, each student is REQUIRED to complete the following:

1. Students must attend each seminar. Activity in laboratory and performance on the presentation will be evaluated by the research mentor.

2. The INTRODUCTION (Introductory and Historical) portion of the thesis must be completed. This introductory chapter is due on November 14, 2014. This is a FIRM deadline and failure to meet this deadline will result in a full letter grade deduction for the course.

3. A final semester research report is due on December 15, 2014. This is again a FIRM deadline and failure to meet this deadline will result in an additional full letter grade deduction for the course. For students for whom this is the last semester, the completed thesis is due December 15, 2014.

It should be noted that according to the Xavier University Catalog, a grade of “A” is earned for “Exceptional” performance. This is also the agreed grading policy of the faculty in the Chemistry Department. The Chemistry Department Grading Policies should be viewed by all students and can be found on the Departmental WEB site at http://www.xavier.edu/chemistry/dept_policies_grading.cfm

**Guidelines for Student Presentations**

1. A one page abstract of the presentation must be handed out at the beginning of the seminar period
2. Audio-visuals such as overheads or slides should be used. MS PowerPoint presentations are preferred.
3. Students may refer to notes during the presentation but should try to deliver their talk in as natural a manner as possible.
4. Students should seek guidance from their research director concerning the content of the presentation. Following the presentation students should meet with their research directors to review the evaluation of their presentations by the faculty and students.
5. Students speaking for the first time should speak 10 to 15 minutes including questions and students speaking the second time 15 to 20 minutes including questions.
6. Presenters should dress professionally.

**Academic Misconduct Policy:** A zero grade will be given to any student violating the University Academic Honesty Policy. The student may appeal according to normal university procedures as stated in the University Catalog.

It is the responsibility of the student to inform the instructor at the beginning of the semester of any individual conditions, medical or otherwise, that may require special attention. Appropriate consideration will be given in these situations.

The schedule and procedures in this course syllabus are subject to change in the event of extenuating circumstances. These changes, if necessary, will be announced to the class in as timely a manner as possible.
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<tr>
<th>Date</th>
<th>Activity</th>
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<tr>
<td>8/29</td>
<td>No Class</td>
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<td>9/5</td>
<td>No Class</td>
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<tr>
<td>9/12</td>
<td>Welcome Meeting</td>
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<td>9/19</td>
<td>Mr. Stephen Nichols, Lab Manager, Xavier University</td>
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<td>9/26</td>
<td>“How I Spent My Summer” Kristin Clark, Michael Jerge</td>
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<td>10/3</td>
<td>Dr. Satyanarayana Majeti, Former Research Fellow, Procter &amp; Gamble</td>
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<td>10/10</td>
<td><strong>No Class: Fall Break</strong></td>
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<tr>
<td>10/17</td>
<td>John Heskett, Ankit Srivastava</td>
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<td>10/24</td>
<td>Jacob Stapleton, Eric Lamping</td>
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<td>11/7</td>
<td>Blake Barlow, Matthew Monterosso, Lindsey Totten</td>
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<td>11/14</td>
<td>John P. Rizik, Gabe Lopez, Kristin Clark</td>
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<td>11/21</td>
<td>Darci Meiners, Peter Donnelly, Allison Pairan</td>
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<td>11/28</td>
<td><strong>No Class: Thanksgiving Break</strong></td>
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<td>12/5</td>
<td>Thiago Brito Matos, Wagner Gomes Pereira, Maykon Martins, Jaqueline Volpe</td>
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CHEM 400-0X s is an Oral-Communication Flagged Course

Your talk will contribute 25% of your total grade.
You will be evaluated by all the faculty and by your peers.

Student Learning Outcomes (SLO’s) for this Oral-Communication Flagged Course

OCF SLO #1: “Adapt messages in a variety of communication contexts.”

Our students will need to (a) create messages to Large Groups (research talks at symposia) and Small Groups (their own research group; eventually, their supervisors and other personnel at work), and (b) adapt these messages primarily to professional colleagues, broadly defined (i.e. both their classmates and the faculty; again, eventually to peers and supervisors at work).

OCF SLO #2: “Organize information effectively.”

Our students will need to organize information clearly and succinctly. It is important for our students to be able to (a) synthesize information, (b) create an organizational structure for their message that makes sense to their audience.

OCF SLO #3: “Advocate a supported opinion on complex topics.”

Our students will need to present – and possibly defend – correct interpretation of spectroscopic, chromatographic, computational, or other types of chemical data.

OCF SLO #4: “Critique challenging messages with respect.”

Our students will need to listen actively and critically. They will also need to respond to speakers respectfully. Students must be able to (a) listen actively – comprehend the speaker’s main ideas and ask relevant clarifying questions, and (b) give constructive feedback to the speaker.

OCF SLO #5: “Present messages through a variety of modalities.”

Our students will deliver messages effectively utilizing verbal, nonverbal, vocal, and visual channels of communication. Students must be able to (a) to determine the most appropriate and effective visual medium to enhance a verbal message. This refers to use of visual aids such as models, props, graphs, charts and use of presentation software such as PowerPoint or Prezi, (b) manage technology effectively during public presentations, and (c) learn to write on a blackboard or whiteboard at a scale appropriate to the venue. Moreover, the students will need to generate their own graphs and charts to incorporate in PowerPoint or Prezi presentations.