

LSC Use Only No:	LSC Action-Date:	UWUCC USE Only No.	UWUCC Action-Date:
		Senate Action Date:	
		06-20 05-15c	W 10-9-06

Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

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Proposing Department/Unit: Chemistry	Phone: 7-4477

Check all appropriate lines and complete information as requested. Use a separate cover sheet for each course proposal and for each program proposal.

1. Course Proposals (check all that apply) ☐ New Course ☐ Course Prefix Change ☐ Course Deletion ☒ <u>Course Activation</u> ☐ Course Number and/or Title Change ☐ Catalog Description Change		
CHEM 483 – Honors Thesis/Independent Study		
<u>Current Course prefix, number and full title</u>		<u>Proposed course prefix, number and full title, if changing</u>
2. Additional Course Designations: check if appropriate ☐ This course is also proposed as a Liberal Studies Course. ☐ Other: (e.g., Women's ☐ This course is also proposed as an Honors College Course. Studies, Pan-African)		
3. Program Proposals ☐ New Degree Program ☐ Program Title Change ☐ Other ☐ New Minor Program ☐ New Track		
<u>Current program name</u>		<u>Proposed program name, if changing</u>
4. Approvals		Date
Dept Curriculum Committee Chair		
Department Chair		
Coll. Curriculum Committee Chair		
College Dean		
Director of Liberal Studies *		
Director of Honors College *		
Provost *		
Additional signatures as appropriate:		
(include title)		
UWUCC Co-Chairs		

* where applicable



I. Catalog Description

- Course Title: Honors Thesis/Independent Study
- Prefix: CHEM
- Number: 483
- Hours: var-1 cr
- Prerequisites: admission to honors program and permission of chairperson
- Co-requisites: CHEM 484
- Description: Two semester sequence of research, in conjunction with a faculty member, culminating in an honors thesis and an oral defense. It is suggested that the student take one semester hour of CHEM 483 in the spring semester of their junior year, and a second semester hour in the fall semester of their senior year. The research proposal and final thesis are approved by a thesis committee formed by the research director and two other faculty members.

II. Objectives:

1. Students will analyze and use scientific literature for the purpose of writing a research proposal.
2. Students will acquire the laboratory techniques required to successfully carry out their chosen research.
3. Students will learn to write in the style accepted in scientific literature.
4. Students will gain experience in presenting and justifying their research results to a scientific audience.
5. Students will gain understanding of the process of scientific research.
6. Students will produce original research results.

III. Detailed Course Outline:

Since the nature of the research is dependent on the research and the research advisor chosen by the student, there is no general topic outline for this course.

IV. Evaluation Methods:

Since the objective of this course is to carry out original research in chemistry, traditional exams are not appropriate. Students are expected to work in their chosen research lab for a minimum of four hours per week, and to actively participate in the design and analysis of the research project. In addition to active research participation, there are several other requirements in this course:

1. Research proposal following departmental guidelines. Preparation for this research proposal is given in CHEM 301, which normally will be taken the semester before starting CHEM 483. Students take CHEM 483 over two semesters. The research proposal is expected to be completed by the middle of the first semester. Laboratory research on the proposal will be initiated during the first semester and will continue into the second semester.
2. Student presentation of research results. Each CHEM 483 student will make a 20-minute presentation, including some results of their work, to the chemistry department faculty and the other students enrolled in CHEM 484 at the end of the first semester.
3. Thesis of research results in ACS-approved format. This format is outlined in the *The ACS Style Guide*, and this thesis will be produced with the supervision of the student's

research director. A draft of this report is due one month before the end of classes. The final copy of the thesis and an oral defense of it before a committee of three professors must be completed by the last day of classes.

4. Completion of departmental student survey of their chemistry degree program.

V. Example Grading Scale

- A - completion of appropriate requirements, outstanding participation (90 – 100 %)
- B - completion of appropriate requirements, good participation (80 – 89 %)
- C - completion of appropriate requirements, fair participation (70 – 79 %)
- D - completion of appropriate requirements, poor participation (60 – 69 %)
- F - non-completion of appropriate requirements (less than 60 %)

Appropriate requirements are: a) research proposal and initiation of research (first semester); b) 20-minute presentation (first semester); c) written thesis (second semester); d) public defense of thesis (second semester); e) student survey (second semester).

VI. Attendance Policy:

Students are expected to engage in undergraduate research for a minimum of four hours per week. The schedules, and activities to take place during this time, are to be mutually agreed upon by the student and research director. The level of participation is the primary factor in the grade for CHEM 483, once the requirements have been met.

VII. Required Textbook(s), Supplemental Books and Readings:

"The ACS Style Guide: A Manual for Authors and Editors," Janet S. Dodd, 2nd ed., Oxford Univ. Press, New York (1997).

VIII. Special Resource Requirements:

Safety goggles
Laboratory notebook

IX. Proper Bibliography: The bibliography for this course is specific to the research that is proposed and is determined by the student and the research advisor. However, some general interest resources on undergraduate research are:

1. *Revitalizing Undergraduate Science*, Sheila Tobias, Research Corporation, Tucson, AZ (1992).
2. *Candid Science: Conversations with Famous Chemists*, Istvan Hargittai, Imperial College Press, London (2000).
3. *Academic Excellence*, Michael P. Doyle, Ed., Research Corporation, Tucson, AZ (2000).