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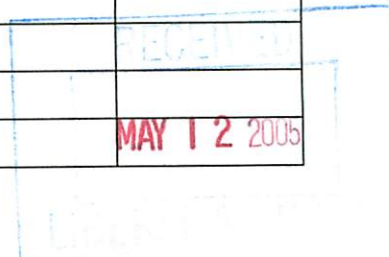
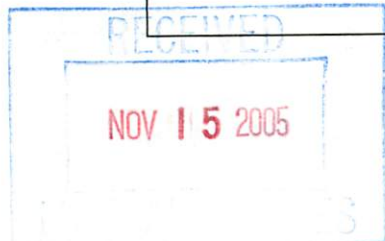
Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

Contact Person: Ruies Van Fossen Ramsey	Email Address: rvbravo@iup.edu
Proposing Department/Unit: Chemistry	Phone: 7-2360

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) <input checked="" type="checkbox"/> New Course <input type="checkbox"/> Course Prefix Change <input type="checkbox"/> Course Deletion <input type="checkbox"/> Course Revision <input type="checkbox"/> Course Number and/or Title Change <input type="checkbox"/> Catalog Description Change			
CHEM 484 – Honors Seminar in Chemistry			
<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 <input type="checkbox"/> This course is also proposed as a Liberal Studies Course. <input type="checkbox"/> Other: (e.g., Women's Studies, Pan-African) <input type="checkbox"/> This course is also proposed as an Honors College Course.			
3. Program Proposals <input type="checkbox"/> New Degree Program <input type="checkbox"/> Program Title Change <input type="checkbox"/> Other <input type="checkbox"/> New Minor Program <input type="checkbox"/> New Track			
<u>Current program name</u>	<u>Proposed program name, if changing</u>		
4. Approvals			
Dept Curriculum Committee Chair	Wendy Lou Elcesser	Date	5/2/05
Department Chair	Ruies Van Fossen Ramsey		5-2-05
Coll. Curriculum Committee Chair	John D. Shea		5/7/05
College Dean	John D. Shea		5/6/05
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 Seminar in Chemistry
- Prefix: CHEM
- Number: 484
- Hours: 1c-0l-1cr
- Prerequisites: admission to honors program and permission of department chairperson
- Co-requisites: CHEM 483
- Description: Honors seminar course in chemistry. Students will attend seminars given by visiting scientists, faculty, graduate students and other undergraduate students. Each honors student will present one or more seminars on a topic current in the chemical literature and/or research that the student is doing in CHEM 483.

II. Objectives:

1. Students will evaluate and criticize cutting-edge research in chemistry.
2. Students will prepare and present seminars on assigned topics or on their own research.
3. Students will develop the ability to listen critically and to formulate probing questions about research.
4. Students will analyze and discuss the current conventions for dissemination of the results of scientific research.
5. Students will gain experience presenting scientific work orally and answering questions about what they have presented.
6. Students will exam and judge ethical issues related to scientific research.

III. Detailed Course Outline:

The course will cover a wide range of current topics in analytical, physical, inorganic and organic chemistry, as well as, biochemistry. These topics will be presented by outside speakers, graduate students and by the students enrolled in the course. Therefore, a general topic outline for the course is not possible. An example of a possible program for this course is attached.

Since participation is a key focus of this course, attendance will be required of all students. Each student will be expected to present two seminars concerning current research published in the literature and/or on research the student is currently doing. The latter must include background information from the literature. Students are also expected to participate by making suggestions to and asking questions of the seminar speakers.

IV. Evaluation Methods:

Since the objective of this course is to develop the ability to present seminars and to critically discuss the results, students will be graded on the quality of their presentations, on their ability to defend their statements and on their participation in seminars presented by other persons. The exact criteria for grading each of these will be determined by the instructor of record.

V. Example Grading Scale

- A - outstanding completion of appropriate requirements (90 – 100 %)

- B - good completion of appropriate requirements (80 – 89 %)
- C - fair completion of appropriate requirements (70 – 79 %)
- D - poor completion of appropriate requirements (60 – 69 %)
- F - non-completion of appropriate requirements (50 – 59 %)

Appropriate requirements are: a) presentation of seminar; b) participation in questioning and discussion of seminars presented by others; c) ability to answer questions and to suggest possibilities when the answer is not known; d) active participation in all seminars; e) constructive criticism of the presentations of other persons; f) use of technology in the presentation of seminar.

VI. Attendance Policy:

Since participation is a key focus of this course, attendance will be required of all students.

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

There are no required textbooks. Students will be required to refer to primary sources of chemistry research to prepare their seminars.

VIII. Special Resource Requirements:

This course will require one (1) additional contact hour and one (1) additional prep each semester.

IX. Proper Bibliography: The bibliography for this course is specific to the topic of each student's seminar. Normally, primary sources will be utilized. Some such sources are:

1. *Journal of the American Chemical Society*
2. *Journal of Organic Chemistry*
3. *Journal of Analytical Chemistry*
4. *Journal of Inorganic Chemistry*
5. *Journal of Physical Chemistry*
6. *Chemical Reviews*
7. *Journal of Biological Chemistry*
8. *Journal of Biochemistry*

COURSE ANALYSIS QUESTIONNAIRE

Section A: Details of the Course

- A1 How does this course fit into the programs of the department? For what students is the course designed? (majors, students in other majors, liberal studies). Explain why this content cannot be incorporated into an existing course.

The course will extend knowledge learned in other departmental courses to areas that are currently the subjects of cutting-edge research. The course is designed for majors who have been admitted to honors track. This content cannot be incorporated into an existing course because the department currently does not have an undergraduate seminar course. Also, the content covers a broad range of topics in chemistry and interface areas such as biology, biochemistry, physics, pharmacy, material science, nanotechnology, and forensics. There are no chemistry courses in which all of these topics could be included.

- A2 Does this course require changes in the content of existing courses or requirements for a program? If catalog descriptions of other courses or department programs must be changed as a result of the adoption of this course, please submit as separate proposals all other changes in courses and/or program requirements.

*The course **does not** require changes in the content of existing courses or requirements.*

- A3 Has this course ever been offered at IUP on a trial basis (e. g. as a special topic). If so, explain the details of the offering (semester/year and number of students).

*The course has **never been offered** on a trial basis.*

- A4 Is this course to be a dual-level course? If so, please note that the graduate approval occurs after the undergraduate.

No, it is not dual-level.

- A5 If this course may be taken for variable credit, what criteria will be used to relate the credits to the learning experience of each student? who will make this determination and by what procedures?

The course is not variable credit.

- A6 Do other higher education institutions currently offer this course? If so, please list examples (institution, course title). *Yes, similar courses.*

Northwestern University: CHEM 398-0 Undergraduate Seminar ("for superior students")

Youngstown University: CHEM 3790 Undergraduate Seminar

*University of Pittsburgh: CHEM 1700 Undergraduate Research Seminar
West Chester University of Pennsylvania: CHE 491 Seminar in Chemistry*

- A7 Is the content, or are the skills, of the proposed course recommended or required by a professional society, accrediting authority, law or other external agency? If so please provide documentation.

No

Section B: Interdisciplinary Implications

- B1 Will this course be taught by instructors from more than one department? If so, explain the teaching plan, its rationale, and how the team will adhere to the syllabus of record.

No

- B2 What is the relationship between the content of this course and the content of courses offered by other departments? Summarize your discussions (with other departments) concerning the proposed changes and indicate how any conflicts have been resolved. Please attach relevant memoranda from these departments that clarify their attitudes toward the proposed change(s).

The content of this course is not related to courses given in other departments.

- B3 Will this course be cross-listed with other departments? If so, please summarize the department representatives' discussions concerning the course and indicate how consistency will be maintained across departments.

The course will not be cross-listed with other departments.

Section C: Implementation

- C1 Are faculty resources adequate? If you are not requesting or have not been authorized to hire additional faculty, demonstrate how this course will fit into the schedule(s) of current faculty. What will be taught less frequently or in fewer sections to make this possible? Please specify how preparation and equated workload will be assigned for this course.

All regular faculty in the department are qualified to teach this course. The course requires 1 credit (1 hour of workload) and 1 preparation per semester. It should be possible to cover this by careful scheduling.

- C2 What other resources will be needed to teach this course and how adequate are the current resources? If not adequate, what plans exist for achieving adequacy? Reply in terms of the following:

- Space – *Classroom space is required and is available.*

- Equipment – *Audio-visual equipment and internet access are required. Both are available.*
- Laboratory Supplies and other Consumable Goods – *Not required*
- Library Materials – *Journals, search software, computer facilities are required and are available.*
- Travel Funds – *None required.*

C3 Are any of the resources for this course funded by a grant? If so, what provisions have been made to continue support for this course once the grant has expired? (Attach letters of support from Dean, Provost, etc.)

*The resources are **not funded** by a grant.*

C4 How frequently do you expect this course to be offered? Is this course particularly designed for or restricted to certain seasonal semesters?

Every fall and spring semester. It is not designed for certain seasonal semesters.

C5 How many sections of this course do you anticipate offering in any single semester?

One only.

C6 How many students do you plan to accommodate in a section of this course? What is the justification for this planned number of students?

Probably 5-10 students. This is a senior level seminar course for honors students. We do not expect a large number of students based on graduation rates in recent years (~10 students/year).

C7 Does any professional society recommend enrollment limits or parameters for a course of this nature? If they do, please quote from the appropriate documents.

No.

C8 If this course is a distance education course, see the Implementation of Distance Education Agreement and the Undergraduate Distance Education Review Form in Appendix D and respond to the questions listed.

The course is not a distance education course.

Section D: Miscellaneous

Include any additional information valuable to those reviewing this new course proposal.

NA

Sample Syllabus

NOTE: This course has not been offered previously so the program below is just a sample of what could be included in the course. The actual course program may vary considerably due to the nature of the course.

CHEM 484 Honors Seminar in Chemistry

Course Goals: The course is designed to expose honors students to a wide variety of research areas and techniques in modern chemistry. Students will:

1. attend, summarize and do critiques of research seminars by external and internal speakers
2. actively participate in research seminars by formulating questions and making suggestions concerning the research
3. present a seminar and written report on either research in the literature or their own research

Student Evaluation

Final letter grades will be based on the following items:

1. 40 % Student seminar presentation & written report
2. 20 % Preparation for seminar presentation
3. 15 % Summaries and critiques of seminars (of others)
4. 15 % Quality of participation in seminar series (of questions and suggestions)
5. 5 % Peer evaluation of performance
6. 5 % Self-evaluation of performance

Minimum percentages of the total to guarantee each letter grade are as follows:

90 – 100 %	A
80 – 89 %	B
70 – 79 %	C
60 – 69 %	D
less than 60 %	F

Student Seminar Presentation

If the student has not previously presented a literature-based seminar, the presentation will be a summary and critique of a published article in the chemical literature. Although a specific article will be the focus of the seminar presentation, additional articles and references will be required in the analysis of the experimentation, data, and results described in the primary article. Students are expected to select an article as early in the semester as possible in order to have sufficient time to prepare their formal seminar presentation.

If the student has already presented a literature-based seminar, the presentation will be based on the research results that the student has to date. It is important to realize that the seminar is not a thesis defense. However, there should be sufficient data collected so as to convey to the audience a focused overview of the research in which the student is

currently involved. The student should be able to justify conclusions and explain why the techniques used were appropriate for this research.

ALL students will need to provide a preliminary title by _____. All students will submit an abstract at least one full week before their formal presentation. The dates of each individual presentation will be determined as early in the semester as possible. The presentation may be held on alternate days and/or alternate times from the formal meeting time of the course. The contribution to the Student Seminar Presentation score of each of these parts will be as follows

5 % TITLE

15 % ABSTRACT (due one week prior to the formal presentation)

80% PRESENTATION

Preparation for student seminar presentation:

A preliminary title is due by _____.

A list of appropriate references is due at least two weeks before the presentation. (You may, however, add references after this date). For students presenting a literature-based seminar, the handout "Reading Research Articles" is useful.

An outline of the presentation is due one week prior to the student presentation.

The student is encouraged to practice with presentation styles and options, including PowerPoint, so that the time spent in the preparation of overheads or slides is as productive as possible. This practice will have to take place at times outside of the scheduled class period.

Summaries and Critiques of Seminars:

The student is to submit a summary and a critique of the research seminars on the semester schedule. The student does not have to do a critique of his or her own seminar. The summary/critique CANNOT be simply the notes that are taken during the actual seminar, but is to be a narrative describing the content of the talk, analyzing the quality of the work, and explaining its relevance. Any ethical issues involved in the research should also be addressed in the critique. Each summary is due within two weeks of the seminar presentation chosen.

Pre-Search for known seminar topics and active participation in the seminar series:

The student will find several references relevant to upcoming seminars by outside speakers. A list of these references is required by the Monday of the week of the seminar presentation. The student is then expected to ask quality questions of the seminar speaker and to make suggestions concerning the research. The purpose behind this assignment is to make the student a more active and knowledgeable participant in the seminar series.

Attendance:

Attendance at a minimum of 80% of the seminar presentations throughout the semester is required. Students must provide documentation for any absence. Arrangements to attend seminars in other departments can also be made with instructor approval.

Schedule of Seminar Speakers for this Term*

Date	Speaker	Title of Seminar
Week 1	Dr. James Reilly, Indiana University Bloomington, IN	<i>Using Mass Spectrometry to Identify and Structurally Analyze Biological Molecules and Cellular Constituents</i>
Week 2	Dr. Robert J. Levis, Temple University, Philadelphia, PA	<i>High Speed Detection of Chemical Warfare Agents</i>
Week 3	Dr. Chris Schafmeister, University of Pittsburgh, Pittsburgh, PA	<i>A Chemical Approach to Realizing the Promise of Nanotechnology</i>
Week 4	Dr. Richard Weiss, Georgetown University, Washington, D. C.	<i>Low-Mass organogelators and the Properties of their Gels</i>
Week 5	Dr. John Wood, IUP	<i>Chemical Weapons of Mass Hysteria</i>
Week 6	Dr. Marc Greenburg, Johns Hopkins University, Baltimore, MD	<i>Using Organic Chemistry to Study DNA Damage and Repair</i>
Week 7	Dr. Tomasz Kowalewski, Carnegie Mellon University, Pittsburgh, PA	<i>Novel Nanostructured Materials for Electronics through Self-Assembly of Well-Defined Macromolecules</i>
Week 8	Student Seminars	
Week 9	Student Seminars	
Week 10	Dr. Ann E. Hagerman, Miami University, Oxford, OH	<i>Dietary Polyphenolics as Antioxidants</i>
Week 11	Dr. Kara Bern, University of Rochester, Rochester, NY	<i>Impact of Dynamics on Redox Protein Stability and Function</i>
Week 12	Dr. Theresa M. Reineke, University of Cincinnati, Cincinnati, OH	<i>A Structure-Property Study of New Materials Designed for the Delivery of Gene Therapeutics</i>
Week 13	Student Seminars	
Week 14	Student Seminars	

* Note: These are actual speakers and topics that have been or will be presented in other seminars of the Chemistry Department.

DISCLAIMER: This is a sample program for Chem 484. It is not a program that has actually been presented in this course because the course has never been offered before.