

Approval not required by UWCC or Senate - already a WI course

LSC Use Only Proposal No:	UWUCC Use Only Proposal No:	Senate Action Date:
LSC Action-Date: <u>App-4/5/12</u>	UWUCC Action-Date: <u>11-144 C</u>	

Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

Contact Person(s) Sharon Sowa	Email Address ssowa@iup.edu
Proposing Department/Unit Biochemistry	Phone 74481

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

1. Course Proposals (check all that apply)

- New Course Course Prefix Change Course Deletion
 Course Revision Course Number and/or Title Change Catalog Description Change

Current course prefix, number and full title: BIOC 490W Biochemisty Seminar II
Proposed course prefix, number and full title, if changing: _____

2. Liberal Studies Course Designations, as appropriate

- This course is also proposed as a Liberal Studies Course (please mark the appropriate categories below)
 Learning Skills Knowledge Area Global and Multicultural Awareness Writing Intensive (include W cover sheet)
 Liberal Studies Elective (please mark the designation(s) that applies – must meet at least one)
 Global Citizenship Information Literacy Oral Communication
 Quantitative Reasoning Scientific Literacy Technological Literacy

3. Other Designations, as appropriate

- Honors College Course Other: (e.g. Women's Studies, Pan African)

4. Program Proposals

- Catalog Description Change Program Revision Program Title Change New Track
 New Degree Program New Minor Program Liberal Studies Requirement Changes Other

Current program name: _____

Proposed program name, if changing: _____

5. Approvals	Signature	Date
Department Curriculum Committee Chair(s)		2/29/12
Department Chairperson(s)		2/29/12
College Curriculum Committee Chair		3/28/12
College Dean		3/28/12
Director of Liberal Studies (as needed)		2/16/12
Director of Honors College (as needed)		
Provost (as needed)		
Additional signature (with title) as appropriate		
UWUCC Co-Chairs		

Received

MAR 28 2012

Liberal Studies

REQUEST FOR APPROVAL TO USE W-DESIGNATION

LSC # _____
Action _____

TYPE I. PROFESSOR COMMITMENT

- () Professor _____ Phone _____
- () Writing Workshop? (If not at IUP, where? when?) _____
- () Proposal for one W-course (see instructions below)
- () Agree to forward syllabi for subsequently offered W-courses?

TYPE II. DEPARTMENT COURSE

- (x) Department Contact Person S. Sowa Phone 74481
- (x) Course Number/Title BIOC 480 Biochemistry Seminar I
- (x) Statement concerning departmental responsibility
- (x) Proposal for this W-course (see instructions below)

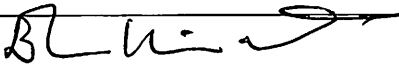
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III. TYPE III. SPECIFIC COURSE AND SPECIFIC PROFESSOR(S)

- () Professor _____ Phone _____
- () Course Number/Title _____
- () Proposal for this W-course (see instructions below)

SIGNATURES:

Professor(s)

Department 
 Chairperson _____
 College Dean _____

Director of Liberal Studies

COMPONENTS OF A PROPOSAL FOR A WRITING-INTENSIVE COURSE:

- I. "Writing Summary"--one or two pages explaining how writing is used in the course. First, explain any distinctive characteristics of the content or students which would help the Liberal Studies Committee understand your summary. Second, list and explain the types of writing activities; be especially careful to explain (1) what each writing activity is intended to accomplish as well as the (2) amount of writing, (3) frequency and number of assignments, and (4) whether there are opportunities for revision. If the activity is to be graded, indicate (5) evaluation standards and (6) percentage contribution to the student's final grade.
- II. Copy of the course syllabus.
- III. Two or three samples of assignment sheets, instructions, or criteria concerning writing that are given to students. Limit: 4 pages. (Single copies of longer items, if essential to the proposal, may be submitted to be passed among LSC members and returned to you.)

Please number all pages. Provide one copy to Liberal Studies Committee.

Before you submit: Have you double-checked your proposal against "The Liberal Studies Committee's Most Frequently Asked Questions"?

I. Writing Summary

The BIOC 480/490 sequence is proposed (together) as a writing-intensive course. The sequence is taught every year and is required for the BS BIOC degree. It is taken by senior BIOC majors. This writing intensive sequence is seen as an opportunity for students to practice professional levels of scientific communication - reading scientific papers, writing up procedures, communicating and interpreting/critiquing the results of other scientists, producing scientific publications, and effectively presenting a seminar.

The students practice the following kinds of writing:

1. **Writing to demonstrate reading skills.**
Students prepare a preliminary statement of topic that will form the basis of their seminar and detailed written report. The statement of topic must reflect a concise summary of a research problem, including one experimental technique germane to the subject that will be discussed in detail.
2. **Writing/presenting for clarity and for critiquing.**
Students read and critique papers from the scientific literature. They present the results orally in seminar format. The presentations are peer-reviewed by the students, and are evaluated for thoroughness (background information) and clarity (interpretation of the results in context with the subject) as well as use of appropriate visual aids.
4. **Writing/presenting to practice clear communication of scientific principles.**
Students write a detailed research report that summarizes a current topic of their interest, and includes sufficient background information to place the information in context with current discovery. They submit a draft which is edited by the instructor and returned to the student. The finished written reports, which have been revised by the students accordingly, resemble review papers. The oral presentation resembles a research seminar, and in some cases can include results collected by the student as part of their independent study. Students first present their powerpoints to the instructor in draft form, and revise the edited versions prior to their oral presentations. Students learn how to improve both their written and oral scientific communication skills.

II. Course Syllabus

SYLLABUS OF RECORD FOR BIOC 490W BIOCHEMISTRY SEMINAR II

I. CATALOG DESCRIPTION

COURSE TITLE:	BIOC 490W Biochemistry Seminar II
NUMBER OF CREDITS:	1 cr (1c-01-1cr)
PREREQUISITES:	BIOC 302, 312, and 480
COURSE DESCRIPTION:	A discussion of recent trends in biochemical thought. Oral and written reports on assigned readings, library, or laboratory research. Guest lecturers. The combination of BIOC 480-490 counts as one writing-intensive course.

II. COURSE OBJECTIVES

BIOC 480/490 serve together as one writing-intensive course. In the first semester, students gain experience in reading and evaluating biochemical research reports from the literature. In the second semester students choose a topic of interest within biochemistry (broadly defined) and develop written and oral reports on the topic. These reports include:

- 1) A detailed evaluation of at least one primary research article (published within the last 5 years) as performed in the journal club format in BIOC480.
- 2) Significant background information, allowing the reader/audience to understand the research in the context of what is already known or not known and to assess the significance of the research.
- 3) A full explanation and analysis of a specific experimental technique used in the research.

Successful students will build on the skills developed last semester, improving their writing skills as they gain additional experience in assessing and understanding scientific literature and enhance their skills in written and oral scientific communication.

Professional ethics in science/scientific research will be presented in the form of case studies that will be the basis of writing assignments and class discussion.

III. DETAILED COURSE OUTLINE

The course will consist of **4 writing assignments, structured class discussions, and a final oral report** in the form of a **seminar**.

Note: 1 hour = 50 minutes or 1 academic hour

- | | |
|---|---------|
| 1. <u>Introduction: Choosing a Topic</u> | 1 hour |
| 2. <u>Writing Assignment 1: Statement of Topic</u> | 1 hour |
| 3. <u>Writing Assignment 2: Professional Ethics</u> | 2 hours |
| 4. <u>Writing Assignment 3: Rough Draft of Written Report</u> | 1 hour |

5. Seminar Assignment 1: Preliminary Oral Report 1 hour
6. Seminar Presentations 6 hours
7. Class Discussion: Review of Effective Scientific Communication 1 hour
8. Writing Assignment 4: Final Written Report 1 hour
9. Terminating Activity Scheduled during final exam period

IV. EVALUATION METHODS

Grades will be based on the following system:

Preliminary Topic Statement	10%
Writing Assignment: Professional Ethics	10%
First Draft of Written Report	15%
Preliminary Oral Report	10%
Seminar Presentation	20%
Final Written Report	25%
Participation in Classroom Discussions	10%
Total	100%

V. EXAMPLE GRADING SCALE

Grade scale for the course is the standard one for the University:
 A = 90-100%; B = 80-89%; C = 70-79%; D = 60-69%; F < 60%

VI. UNDERGRADUATE COURSE ATTENDANCE POLICY

The attendance policy for this course will be consistent with the university undergraduate attendance policy as described in the current catalogue.

VII. REQUIRED TEXTBOOKS, SUPPLEMENTAL BOOKS AND READINGS

Students will receive some handouts, but will be required to use library and electronic means to retrieve information.

VIII. SPECIAL RESOURCE REQUIREMENTS

Students are expected to be proficient in retrieving scientific information from the literature and should have access to a computer to use web sites that provide

supplementary information. Students should also be familiar with PowerPoint for their seminar presentations.

IX. BIBLIOGRAPHY

1. *The ACS Style Guide: A Manual for Authors and Editors, Third Edition*, Dodd, J.S., Ed.; American Chemical Society: Washington, DC, 2006
2. *The Chemist's Code of Conduct*, American Chemical Society: Washington, DC, 1994.
3. <http://agricola.nal.usda.gov/> (an agricultural literature online database)
4. www.genome.jp/kegg/pathway.html (a metabolism online database)
5. www.hmdb.ca/ (a metabolism online database)
6. www.ncbi.nlm.nih.gov/pubmed/ (an online medical literature database)
7. www.ncbi.nlm.nih.gov/Structure/ (an online database for protein structures)
8. www.rcsb.org/ (an online database for protein structures)

Sample Assignment 1: Statement of Topic (50 points)

A concise (two page maximum) description of the topic chosen. Attach a paper copy of at least one primary research article to be analyzed in depth. Also state the experimental technique that you will focus on in your written and oral report.

Grading Rubric: Points are awarded for clarity, conciseness and correctness.

- _____ The primary paper was published within the past 5 years (10 points)
- _____ A copy of the primary paper is attached to the Statement of Topic (10 points)
- _____ The topic is broad enough to include the context of the work (5 points)
- _____ The topic is narrow enough to allow for a thorough analysis (5 points)
- _____ One experimental technique is designated as a focus point of the report (5 points)
- _____ The statement of topic is concisely summarized and all writing uses correct grammar, spelling and punctuation (15 points)

Sample Assignment 2: Final Written Report (125 points)

The written report should be an expanded version of the evaluation of a research article(s) as completed in BIOC 480 using the 4-step method. This report should reflect a greater effort on your part to understand the broader content of a primary research article(s). Thus, you need to include background information that places the research in context of other relevant research. You should then address all of the points described in the “reflection and criticism” step of the 4-step method. You will need to include a similar background and analysis for the experimental technique that you choose to focus on. You should explain how the technique is performed, its usefulness and limitations.

The format of this report is flexible, however, it is strongly suggested that informative section headings be used. Two required elements are:

- 1) An abstract summarizing your report (2 page max)
- 2) A reference section giving full citations (authors, publication date, article title, journal name, volume, starting and ending page) for all articles used. Use an appropriate format for books. Citations for internet resources must include the page title, URL, and date accessed.

NOTE: *use the ACS style manual* for instructions on how to *cite* and *list* references.

The final written report should *address the instructor’s comments* on the draft report. The copy of the draft report with the instructor’s comments must be turned in along with the final report.

Grading Rubric: Points are awarded for clarity, conciseness and correctness.

- _____ The abstract is included and clearly serves as a summary (25 points)
- _____ The background information places the topic in context (25 points)
- _____ One experimental technique is defined and the results are critiqued (25 points)
- _____ Literature references are cited in acceptable style format (25 points)
- _____ The paper is well-organized, thorough, and all writing uses correct grammar, spelling and punctuation (25 points)

Biochemistry Program Statement of Responsibility for All Writing-Intensive Courses:

The coordinator shall provide a copy of this agreement to each faculty member assigned to teach a Writing-Intensive course.

Each faculty member assigned to teaching a Program Writing Intensive Course agrees to the following criteria:

- Writing assignments are an integral part of the course, which promise to enhance student learning (not 'exercises in writing for writing's sake').
- Writing assignments will include various forms of writing such as case studies, laboratory reports, journals, letters, memos, formal essays, research articles, project or grant proposals, etc.
- The improvement of student writing is a clear objective of the course.
- Students will be provided with written instructions that cover major criteria for the evaluation of the assignment(s).
- Students will receive guidance in conceiving, organizing, and presenting written material in ways appropriate to the field of Chemistry/Biochemistry.
- Students will produce at least 5000 words (15-20 typed pages) of writing that will be critically evaluated.
- Each writing assignment will have specified length in terms of minimum number of pages required.
- Writing assignments include at least one major assignment and several shorter different assignments.
- Students will be required to submit drafts of at least one major writing assignment that will be returned with instructor comments/suggestions for improvement before the final copy of the assignment is due, so that students have an opportunity to revise their written work.
- Students will submit final copies of writing assignments for critical evaluation.
- Instructor evaluation of written work will comprise at least 50% of the course grade.

Summary Chart for Writing Assignments*

A. Writing Assignments					
Assignment Title	# of Assignments	# of total pages	Graded (Yes/No)	Opportunity for Revision (Yes/No)	Written Assignment represents what % of final course grade
Writing Assignments	4	10-20	yes	yes	60%
Seminar Presentation	2	oral	yes	yes	30%
Totals	6	10-20	NA	NA	75 %

B. Examinations (Complete only if you intend to use essay exams/short answers as part of the required number of pages of writing.)

Exams	Approx. % of exam that is essay or short answer	Anticipated # of pages for essay or short answer, or approx. word count	Exam constitutes what % of final course grade
1.			
2.			
3.			
Totals			

**Total writing assignments should contain at least 5000 words (approximately 15-20 typed pages) in two or more separate assignments; written assignments should be a major part of the final grade—at least 50% or more.*

CHECK LIST FOR WRITING-INTENSIVE PROPOSALS

The Liberal Studies Committee's Most Frequently Asked Questions,
Based on the Senate Criteria for Writing-Intensive Courses

For All Writing-Intensive Courses:

- Are the writing assignments integral parts of the course, rather than exercises that seem tacked on artificially? Are they assignments that promise to enhance student learning?
- Have you considered various forms of writing such as case studies, laboratory reports, journals, letters, memos, formal essays, research articles, project or grant proposals, and so forth?
- Does one of your course objectives explicitly mention the improvement of writing?
- Will you distribute written instructions, including criteria for evaluation, for major assignments?
- Will students receive guidance in conceiving, organizing, and presenting written material in ways appropriate to the subject being studied?
- Will students produce at least 5000 words (15-20 typed pages) of writing that you evaluate? Have you clarified this by giving us the minimum number of pages that you expect for each writing assignment?
- Are there at least two, and preferably more, different writing assignments?
- Will students revise at least one assignment after receiving your review comments?
- Does at least one assignment require students to produce finished, edited prose (as differentiated from whatever informal or draft writing you have included)?
- Are written assignments (in-class; out-of-class) worth at least 50% of the course grade?

For Type I (Professor Commitment) Writing-Intensive Courses:

- Have you attended a writing workshop either at IUP or elsewhere? [If not, have you indicated at least equivalent preparation based on such things as graduate education, teaching experience in writing courses, publications, conference attendance, or other professional activities?]

For Type II (Departmental) Writing-Intensive Courses:

- Does your "statement of departmental responsibility" explain how the department will ensure that the writing component is present regardless of who is teaching? Does it identify the specific department group or individual who is responsible for ensuring this?