

Please complete this form and attach a copy of the syllabus and catalog description for new courses. Forward the form and attachments to your departmental curriculum committee for approval, and then to your College/School curriculum committee, or Dean's office, for final approval. The approved form should then be forwarded to the Academic Scheduling Office, MS 3D1. This is for ***undergraduate course approval only***. Please see the Provost Office/Graduate Council website to obtain a copy of the Graduate Course Approval Form and for details about the graduate course approval process.

Please indicate: **New** **N** **Modify** **Delete**

Submitted by: Jennifer W Weller **Ext:** 3-8329 **Email:** jweller@qmu.edu

Effective Term (New/Modified Courses only): Spring 2008 **Final Term** (deleted courses only): _____

IP)

Repeat Status*(check one): X NR-Not repeatable _____ RD-Repeatable within degree _____ RT-Repeatable within term _____

***Note: Used only for special topics, independent study, or internships courses**

Schedule Type Code(s): 1. LAB LEC=Lecture SEM=Seminar STU=Studio INT=Internship IND=Independent Study
2. RCT LAB=Lab RCT=Recitation (second code used only for courses with Lab or Rct component)

Prereq _____ **Coreq** X (Check one): BINF402

Note: Modified courses - review prereq or coreq for necessary changes; Deleted courses - review other courses to correct prereqs that list the deleted course.

Description of Modification (for modified courses): _____

Special Instructions (major/college/class code restrictions, if needed): _____

Approval Signatures:

Department or Unit: _____ Date: _____
(Signature)

College/School Committee: _____ **Date:** _____
(Signature)

Approval from other units:

Please list those units outside of your own which may be affected by this new, modified, or deleted course. Each of these units should approve this action prior to its being submitted to the COS Curriculum Committee for approval.

Unit:	Head of Unit’s Signature:	Date:
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Unit:	Head of Units Signature:	Date:

COS Curriculum Committee approval: _____ Date: _____

Course Proposal Submitted to the Curriculum Council
by
The College of Science

1. COURSE NUMBER AND TITLE:

BINF492 (1 credit) Senior Research in Bioinformatics and Computational Biology II.

Prerequisites: BINF 491

Corequisites: BINF 402

Catalog Description: BINF 492 Senior Research in Bioinformatics II (1,1) Prerequisites: BINF 401 and a previous passing grade or concurrent enrollment in BINF 402. The research project designed the previous semester (in BINF 491) is completed under the guidance of a faculty mentor. A written report in approved format is required for course completion.

2. COURSE JUSTIFICATION:

Course objectives: This course is designed to allow students to complete an independent research project under the guidance of a faculty mentor, having first spent a semester learning how to formulate the hypothesis and collect the appropriate data set and tools. In addition to performing the research the student will learn to summarize results and present a discussion as to how the results support or contradict the initial hypothesis and what additional experiments might be suggested. The student will learn to write the experiment in the form of a peer-reviewed publication, which will constitute part of the work to be judged.

Course Necessity: To qualify as well-trained scientists an individual must be able to not only carry out experiments but learn to summarize the results succinctly and clearly and communicate these results to a critical peer-level audience. Communication skills, both verbal and written, are known to have an even greater impact on the career of a scientist than technical skills, and paradoxically are given the least attention in most undergraduate and graduate science education programs. Students who have had experience and a focused critic helping them improve oral and written research will have been provided with a very competitive edge in achieving success in their careers.

Course Relationship to Existing Programs: This course provides a student with the experience of carrying out an experiment designed by the student with the help of a faculty mentor, where there is depth of focus to the work. Thus it complements the senior-level Bioinformatics Lecture and Lab courses which are designed to be broad and provide an understanding of how a number of research areas integrate, but therefore cannot be deep in any one area. By producing a well-written final paper the student will also have a document to submit with graduate school or professional applications demonstrating his ability to acquire skills, and communicate effectively. This focus is not provided by any other courses in the department or by other departments. The department members currently have extensive experience directing Masters level students in projects and theses so this will be an extension of existing practices rather than a break with them.

Course Relationship to Existing Courses: There are no undergraduate senior research offerings in this area.

3. SCHEDULING AND PROPOSED INSTRUCTORS:

Semester of Initial Offering: Spring 2008

Proposed instructors: Available faculty, adjunct and affiliate faculty members of the Bioinformatics and Computational Biology department.

TENTATIVE SYLLABUS: a week by week syllabus cannot be detailed since each professor will have a different field and the specific area of emphasis will change from year to year. The responsibilities of the faculty member are to meet with the student once a week (at least) for one hour in order to survey progress and help the student overcome roadblocks or choose strategies, to guide the student in completing the work in a timely fashion, provide models of good data summarization techniques for both visualization and discussion, and to be an active and engaged editor of the final report. The student should expect to spend 6-8 hours a week actively executing the research, or in the later phases writing the research report. The goal of the second semester is to have completed the work proposed in the research plan put together in the first semester and to have provided a coherent journal-format ready paper based on the research that the student is able to defend to a peer community.