Fiscal Unit/Academic Org	Introductory Biology - D0326
Administering College/Academic Group	Biological Sciences
Co-adminstering College/Academic Group	
Semester Conversion Designation	New Program/Plan
Proposed Program/Plan Name	Biology Minor
Type of Program/Plan	Undergraduate minor
Program/Plan Code Abbreviation	
Proposed Degree Title	

Credit Hour Explanation

Program credit hour requirements		A) Number of credit hours in current program (Quarter credit hours)	B) Calculated result for 2/3rds of current (Semester credit hours)	C) Number of credit hours required for proposed program (Semester credit hours)	D) Change in credit hours
Total minimum credit hours required for completion of program				15	
Required credit hours offered by the unit	Minimum			4	
	Maximum			4	
Required credit hours offered outside of the unit	Minimum			11	
	Maximum			11	
Required prerequisite credit hours not included above	Minimum			18	
	Maximum			29	

Program Learning Goals

Note: these are required for all undergraduate degree programs and majors now, and will be required for all graduate and professional degree programs in 2012. Nonetheless, all programs are encouraged to complete these now.

Program Learning Goals

- Goal #1: Explain major biological concepts and discuss how these are connected with various areas of the biological and physical sciences.
- Goal #2: Demonstrate problem solving, analytical, and communication skills that will provide the foundation for lifelong learning and career development.
- Goal #3: Value biology as an integral part of society and everyday life.

Assessment

Assessment plan includes student learning goals, how those goals are evaluated, and how the information collected is used to improve student learning. An assessment plan is required for undergraduate majors and degrees. Graduate and professional degree programs are encouraged to complete this now, but will not be required to do so until 2012.

Is this a degree program (undergraduate, graduate, or professional) or major proposal? No

Program Specializations/Sub-Plans

If you do not specify a program specialization/sub-plan it will be assumed you are submitting this program for all program specializations/sub-plans.

Pre-Major

Does this Program have a Pre-Major? No

Attachments

- semester conversion directors letter_3.doc

  (Letter from Program-offering Unit. Owner: Stetson,David Leete)

- BioMinorBingo_3.pdf

  (Semester Advising Sheet(s). Owner: Stetson,David Leete)

- Rationale for Biology Minor_3.pdf

  (Program Rationale Statement. Owner: Stetson,David Leete)

- Biology minor cover letter.doc: NMS Division of Arts and Sciences cover letter

  (Letter from the College to OAA. Owner: Andereck,Claude David)

Comments

- The prerequisite courses would total at least 18 units for most students; if a student chose to take Biochemistry 4511 in the minor, that student would have to take additional chemistry prerequisites, to a total of 29 units. *(by Stetson,David Leete on 06/02/2011 04:46 PM)*

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Stetson,David Leete	06/02/2011 08:40 AM	Submitted for Approval
Approved	Misicka,Matthew Alan	06/02/2011 08:47 AM	Unit Approval
Revision Requested	Andereck,Claude David	06/02/2011 01:30 PM	College Approval
Submitted	Stetson,David Leete	06/02/2011 04:47 PM	Submitted for Approval
Approved	Stetson,David Leete	06/06/2011 09:33 AM	Unit Approval
Approved	Andereck,Claude David	06/06/2011 05:17 PM	College Approval
Pending Approval	Nolen,Dawn Jenkins,Mary Ellen Bigler Meyers,Catherine Anne Vankeerbergen,Bernadette Chantal Hanlin,Deborah Kay	06/06/2011 05:17 PM	ASCCAO Approval

College of Arts and Sciences

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June 6, 2011

Larry Krissek
Chair, Arts and Sciences CCI

Dear Larry:

It is a pleasure to forward to you for consideration by the CCI and the Sciences Subcommittee the proposal for the minor in Biology under semesters. This is a new program with a potentially large audience (a minor in life sciences had existed until recently, but has been withdrawn—the present proposal is a well conceived, stronger replacement). The requirements for the minor offer flexibility, depending on the interests of the student.

Beyond my own review of the documents, the proposal has been discussed by colleagues from other NMS units at meetings on June 2, 2011. Feedback from these discussions has been incorporated in the proposal.

If you have any questions, I would be happy to address them.

Sincerely,

David Andereck
Professor of Physics
Associate Dean of Natural and Mathematical Sciences, College of Arts and Sciences

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May 31, 2011

Assoc. Dean Dave Andereck
Natural and Mathematical Sciences
College of Arts and Sciences

Dear Dean Andereck:

The Center for Life Sciences Education (CLSE) is pleased to present materials supporting our plans for converting our undergraduate degree programs from quarters to semesters.

The CLSE offers two degree programs:

- BS in Biology
- BA in Biology

In addition, we are proposing a new undergraduate minor in biology.

The biology major (BS and BA) were reviewed in 2007. The 2007 review incorporated student feedback and faculty input from the Columbus and regional campuses. This semester conversion proposal is based on that review, with the additional changes noted in the program rationale. The changes we propose and the addition of the new biology minor are in response to:

- Student feedback obtained in the course of outcomes assessment
- Advisor feedback solicited during regular meetings as well as one meeting focused on discussion of the biology major
- Biology 401 and 402 faculty feedback
- Recent reports that have proposed major changes in the way courses and curricula are structured in biology programs around the country

We are committed to protecting the academic progress of our students and ensuring that no biology student is penalized by the transition from quarters to semesters. Because of the flexibility built in to the biology major requirements, we rely heavily on the intentional and purposeful advising provided by our advising staff to ensure that this promise is kept.

The advisors for the biology major are housed in the CLSE. We currently have one full-time biology advisor, one part-time biology advisor (who also coordinates the Biological Sciences Scholars program), one faculty advisor (Dr. Glen Needham from EEOB and Entomology), and three faculty Honors advisors (Dr. Helen Chamberlin from Molecular Genetics, and Drs. W. Mitch Masters and David Stetson from EEOB). Together these six people, only one of whom is a full-time biology advisor, coordinate the advising services for nearly 2000 biology majors. We have approval to add one more staff advisor to meet the demand of the increasing numbers of biology majors and semester conversion, and we will fill that position this summer.

The CLSE draws on faculty from the core biological science departments: Biochemistry, EEOB, Microbiology, and Molecular Genetics. Dr. Stetson and I are the only tenure-track faculty associated with the CLSE, with our tenure residing in EEOB and Biochemistry, respectively. We do not have a defined faculty to whom we can turn for a vote on the proposed conversion. We asked the faculty members who reviewed and proposed revisions to the biology in 2007 to review the semester conversion plans. These faculty unanimously supported the conversion plans. We also are requesting concurrences from the core biological sciences departments in the College of Arts and Sciences (Biochemistry, Evolution, Ecology, and Organismal Biology, Microbiology, and Molecular Genetics) and from the College of Education and Human Ecology. Those concurrences will be attached to this proposal as they are received.

We recommend approval of the attached semester conversion plans.

Regards,

Caroline Breitenberger
Director, Center for Life Sciences Education

Dave Stetson
Associate Director, CLSE

Rationale for Biology Minor

The twenty-first century has been called "the century of Biology," as the twentieth century was called "the century of Physics." Recent years have seen dramatic changes in the methods and techniques used in biological research, generating large amount of useful biological data. These changes are particularly evident in the practice of medicine, for example in the fields of cancer, the genetic factors affecting disease, and imaging technologies. We also face the consequences of climate change, a phenomenon which has come to the fore only in the last decade or so. The future of humans, individually and collectively, will be determined in large part by the progress we make in the biological sciences and our collective understanding of the significance of biological changes. Our students who major in the biological sciences will be important players in this progress, but other students are interested in the problems and solutions, in making informed decisions at the polls and at the cash register, and in understanding biology and relating that understanding to their peers, their family, their students, and their audience.

We recognize that a biology minor could be a well-enrolled minor, particularly given that the biology major is the highest-enrolled major in the university, and we have been planning to add a minor for some time. We introduced a new biology major about three years ago and we are ready to add the minor coincident with the change to semesters. We expect that the target audience for the minor will be varied and diverse; the audience may include engineers who want a deeper understanding of the biological sciences than they would get in the coursework incorporated into their engineering major, premed students who wish to major in a non-science area, business students pursuing careers in biotechnology or pharmaceutical industries, students in journalism or strategic communications, and many more.

The biology minor requires preliminary coursework in biology and chemistry, but not at the level demanded for the majors. This allows students who do not have the motivation or time to complete an extensive list of prerequisites still to be able to enter the minor. Beyond those prerequisites, the minor consists of the core course required of biology majors, Biology 3401 (Integrated Biology), and other courses that deal with fundamental topics in biology, including anatomy, physiology, genetics, ecology, and evolution. Students must choose 2 courses from a list of 7 of those fundamentals, and they have one free elective available to them, for a total of 15 credit hours in the minor.

Biology Minor Program

Name _____

Semester of Graduation _____

Required Supporting Courses

Biology (2 courses)

- ☐ Biology 1113 (4)
- ☐ Biology 1114 (4)
- ☐ _____ Substitution
- ☐ Waived

Chemistry (1 courses)

- ☐ Chemistry 1210 or 1610 or 1910H (5)
- ☐ _____ Substitution
- ☐ Waived

Mathematics (1 course)

- ☐ Math 1148 and 1149 (7), or 1150 (5)
- ☐ _____ Substitution
- ☐ Waived

Core Course

- ☐ Biology 3401 (4)

Additional Required Courses

Choose at least 2 courses from the following

- ☐ Biochem 4511 (4) (requires Chem 1220 and 2510)
- ☐ EEOB 2510, Human Anatomy (3)
- ☐ EEOB 2520, Human Physiology (3)
- ☐ EEOB 3310, Evolution (4)
- ☐ EEOB 3410, Ecology (4)
- ☐ Microbiology 4000 (4)
- ☐ MolGen 4500 (3)

Electives

_____ _____

_____ _____

_____ _____

Total Semester Units

Core, additional required courses, and elective courses must total 15 semester units. Honors versions of courses substitute freely. Electives must be at the 2000 level or above. Electives and any substitutions to the list of additional required courses above must be pre-approved by a biology advisor (and may require additional prerequisites).

Advisor (Printed) _____

Advisor (Signature) _____

Date _____