Kay and Melissa,

I forgot to include the following information about the Biology BS (taken from the minutes of the ASC CCI). These comments are relatively inconsequential, so the CCI wanted to move the program forward before requesting changes from the unit. I apologize for not including these comments in my original email.

Terry

1) Biology BS

   a) Reviewers: Daniels, Krissek
      i) Re-envisioned program
      ii) Additional ways to fulfill Chem 1210 & 1220, 2510 & 2520, and 2540 & 2550 are listed on advising sheets but not on course list.
      iii) For Education in Life Sciences Specialization: Curriculum Map lists EEOB 3000 (instead of 3310) and Micro 4090 (instead of 4000).
      iv) Forensic Biology Specialization: Curriculum Map: Additional coursework (including lab) should say 17 (instead of 21).

   b) Motion: Masters, Daniels, unanimously approved (items in bold will be transmitted to CAA)
July 15, 2011

To: W. Randy Smith, Vice Provost, Office of Academic Affairs
From: Terry L. Gustafson, Special Assistant to the Executive Dean for Semester Conversion
Re: Arts and Sciences Program Proposals from the Natural and Mathematical Sciences Division

Arts and Sciences is pleased to submit the following programs from the Natural and Mathematical Sciences Division to the Office of Academic Affairs for conversion from quarters to semesters. The programs have been approved by the faculty members and chair of the originating unit, and reviewed and approved by the divisional advisory panel, a subcommittee of the ASC Committee on Curriculum and Instruction (CCI), and the full CCI. The vote for approval of all programs at the full CCI was unanimous.

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Academic Plan Code</th>
<th>Conversion Designation</th>
<th>CCI Approval</th>
<th>Last Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology BA</td>
<td>BIOLOGY-BA</td>
<td>Re-envisioned</td>
<td>7/14/2011</td>
<td>2/6/2008</td>
</tr>
<tr>
<td>Biology Minor</td>
<td>BIOLOGY-MN</td>
<td>New</td>
<td>7/13/2011</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Arts and Sciences General Education (GE) Program:** The GE program for untagged B.A. and B.S. degrees in Arts and Sciences was approved by the Council on Academic Affairs on May 26, 2010, after receiving approval from the Arts and Sciences Faculty Senate. All the programs presented here follow the approved GE program.

**College of Arts and Sciences Transition Policy:** The College of Arts and Sciences is committed to the principles outlined in the university’s Pledge to Undergraduate Students. Each unit has a plan on how best to assist its majors and minors through the transition. And the Arts and Sciences Academic Advising Services will advise students on how to transition their GE program. Dual advising is the existing process used in Arts and Sciences and will continue under semesters.
Credit Hour Explanation

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

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

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.

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
At the Biology Minor, 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)
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
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 at least one free elective available to them, for a total of 15 credit hours in the minor. The electives may be any courses in the life sciences offered in the university;
those courses must be appropriate to the student’s interests and must be approved by a biology advisor.
## Biology Minor Program

### Required Supporting Courses

- **Biology (2 courses)**
  - [ ] Biology 1113 (4)
  - [ ] Biology 1114 (4)
- **Chemistry (1 course)**
  - [ ] Chemistry 1210 or 1610 or 1910H (5)

#### Substitution

- [ ] Substitution
- [ ] Waived

### Mathematics

- [ ] 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, Introduction to Biological Chemistry (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, Basic and Practical Microbiology (4)
- [ ] MolGen 4500, General Genetics (3)

### Electives

Total Semester Units

Core, additional required courses, and elective courses must total 15 semester units. Electives must be at the 2000 level or above; at least 6 of the 15 hours must be at the 3000 level or above. Electives may be chosen from course offerings of the Departments of Biochemistry, EEOB, Microbiology, and Molecular Genetics and other departments offering courses in the life sciences. Electives and any substitutions to the list of additional required courses above must be approved by a biology advisor before enrolling in those courses (and may require additional prerequisites). Honors versions of courses substitute freely.

- [ ] Electives

**Advisor (Printed)**

**Advisor (Signature)**

**Date**