

## ***INTERDEPARTMENTAL MEMO:***

**TO: MCS Committee on Undergraduate Affairs**  
**FROM: Department of Biological Sciences**  
**DATE: 25 September 2002**  
**SUBJECT: Biological Sciences Curriculum Issues for Review**

The Department of Biological Sciences has unanimously approved the following curriculum changes and is seeking College Council approval at the October meeting. We are submitting these to CUA for review.

### **1. Increasing the unit value of our graduate courses to 12 units:**

Two major considerations dictated our consideration of changing our 700 and 800 level courses to 12 unit courses.

- a. As we have been developing our courses, several (those listed with an asterisk below) are dual listed with undergraduate and graduate numbers. To satisfy the dual listing, the graduate level of the course was differentiated from the undergraduate listing by a requirement of additional project work and/or additional class meetings. When this was instituted, no additional units were assigned to the graduate course number for the extra work. Thus, to have the courses better reflect the work expected, we are requesting a change of 700 level of these courses to 12 units. In addition, the instructors of each of the other 700 and 800 level courses in the Department were polled as to whether the work expected of students both in and out of class would be better reflected by assigning 12 units to those courses. The faculty unanimously agreed that the changes were warranted.

The list of courses impacted is given below:

- i. 03-711\* Computational Genomics and Molecular Biology
- ii. 03-730 Advanced Genetics
- iii. 03-738 \* Physical Biochemistry
- iv. 03-741 Advanced Cell Biology
- v. 03-742\* Molecular Biology of Eukaryotes
- vi. 03-751 Advanced Developmental Biology
- vii. 03-740 Advanced Biochemistry
- viii. 03-871 Structural Biophysics

- b. A second consideration taken was the interface between our graduate courses and other graduate programs in the University. As we develop our graduate courses and have them taken by students from other departments it has become an issue as to the number of units assigned to each course. For many departments, graduate courses are 12 units. For students from those departments that have a certain number of units required for graduation, taking our 9 unit courses created a problem for timely completion of their degrees.

### **2. New Course Proposal: 03-390, Molecular and Cellular Immunology - 9 units**

Last year, Amit Srivastava and Gordon Rule taught a course on Immunology on a trial basis. The course was very successful and preliminary estimates are that approximately 25 students, juniors and seniors, are interested in taking the course this year. The course was taught as a pilot under our Independent Study course, 03-410. We are proposing the establishment of the course as a new course. The attached detailed description is put forward for approval. The Department unanimously approved this proposal.

**New Course Proposal:**

**Title:** *Molecular and Cellular Immunology*

**Number:** 03-390

**Credits:** 9 units, 3 lecture hours/week.

**Textbook:** Immunology. J. Kubly. W.H. Freeman and Company

**Instructors:** Gordon Rule & Amit Srivastava

**Course Description:** Molecular and Cellular Immunology will cover a number of major topics in the discipline, including:

- Innate and acquired immunity
- Antibody structure and function
- Genetics of immune diversity
- B- and T-cell development
- Cytokines
- Immunodeficiency diseases
- Transplantation immunology
- Tumor immunology
- Biotechnology

**Prerequisites:** Biochemistry I (03-231 or 03-232) and Cell Biology (03-240), or permission of instructor.

**Justification for Creation of this Course:** This course was offered in the spring of 2002 on a trial basis as 03-410 (Independent Study). The enrollment of 18 was appropriate for an upper level biology elective. For example, Developmental Biology (03-350) and Molecular Biology of Prokaryotes (03-441) both had enrollments of 18 students in that semester. FCEs for the first offering of the course were strong, with an average Course Rating of 4.78.

Immunology is clearly an important branch of modern biochemistry and cell biology with obvious applications to basic and applied medical science. Currently no such course exists at Carnegie Mellon University. There appears to be sufficient demand for the course and it would expand the number of upper year electives for our growing class of biology majors.