SPECIAL - COMPUTER SCIENCE CHANGES MAJOR PROGRAM

In Fall, 2000 a number of changes will occur within the Computer Science Program. Most courses will be converted to four credits and will include a laboratory. The requirements for the major will be changed to reflect the changes in various courses.

There will be two types of laboratories - traditional scheduled laboratories and consulting laboratories. The former will be similar to laboratories associated with most science courses. CMSC 150 already has such a laboratory. The traditional laboratory will meet for about 120 minutes per week. A consulting laboratory will be scheduled after the initial meeting of the class. It may vary in format from week to week and may meet at different times from week to week. Typically a consulting laboratory will be about 100 minutes in length. An instructor may elect to use an additional 50 minute lecture in place of the laboratory.

The major and minor will require fewer courses as the courses require more time and provide more depth.

The Computer Science Major Core

All computer science majors whether seeking a B.S. or B.A. degree must complete the following courses.

- CMSC 150 Introduction to Computing, with a formal laboratory, 4 credits (may be waived if the student can successfully start in CMSC 221)
- CMSC 221 Data Structures, with a formal laboratory, 4 credits
- CMSC 222 Discrete Structures, 3 credits (no change in format or credit)
- CMSC 301 Computer Organization, with a consulting laboratory, 4 credits
- CMSC 315 Algorithms, with a consulting laboratory, 4 credits
- CMSC 323 Design and Implementation of Programming Languages, with a consulting laboratory, 4 credits

Availability of the Core Courses

CMSC 150, 221, 222, 301, and 315 will be offered every semester. CMSC 323 will be available every fall semester.

Additional Courses for the Major

In addition to the core courses a student must take sufficient additional courses in 300-level computer science to earn 10 hours of credit. These may be 3 or 4 credit courses.

This brings the total number of credit hours in computer science courses to 33, counting CMSC 150 which may be skipped by qualified students.

The B.A. and B.S. Requirements

The B.A. and B.S. degree requirements are the same for computer science courses. They differ only in requirements for work in related fields.

B.A. Related-Field Requirements

- Math 211 Calculus I (Math 111 is allowed)
- Math 245 Linear Algebra

B.S. Related-Field Requirements

- Math 212 Calculus II
- Math 245 Linear Algebra

Then one of the following options:

- 2 3-hour, 300-level courses in Mathematics, or
- 2 3-hour courses in one of Physics, Chemistry, or Biology beyond the introductory level. Both courses must be in the same field. The introductory level in Biology is 211-212. Courses considered beyond the introductory level in Physics and Chemistry are numbered 200 and above.

The Computer Science Minor

- CMSC 150 Introduction to Computing, with a formal laboratory, 4 credits (may be waived if the student can successfully start in CMSC 221)
- CMSC 221 Data Structures, with a formal laboratory, 4 credits
- CMSC 222 Discrete Structures, 3 credits (no change in format or credit)
- CMSC 301 Computer Organization, with a consulting laboratory, 4 credits
- One 300-level course (either 3 or 4 credits)
**Revised Upper-Level Electives**

These six courses will all have a consulting laboratory and be given 4 credits.

- CMSC 321 Operating Systems
- CMSC 322 Software Engineering Practicum
- CMSC 325 Databases
- CMSC 332 Computer Networks
- CMSC 333 Parallel Programming (new course)
- CMSC 335 Computer Graphics

**Unchanged Upper-Level Electives**

The following will remain as 3-credit courses.

- CMSC 328 Numerical Analysis (cross-listed as Math 323)
- CMSC 330 Theory of Computation

**Courses Deleted from Regular Offerings**

Two courses will be deleted from the catalog as regular offerings but will be available from time-to-time as special topics classes.

- CMSC 302 Computer Organization and Architecture II
- CMSC 331 Theory of Compilers

**Special Topics**

We will continue to offer special topics courses in either a 3-credit or 4-credit format.

**Implications for Current Majors**

Effective with the 2000-2001 academic year all computer science majors must complete the core classes (either in their old or new formats) plus sufficient 300-level computer science classes to total at least 33 hours. If CMSC 150 was skipped, then the total may be 30 hours. Only 3-credit or 4-credit courses may count.

The related-field requirements are unchanged.

**SUMMARY**

- Many courses in computer science are now 4 credits and have a laboratory of one form or another associated with them.
- Some courses like CMSC 301 and 315 will now be available every semester.

- Whereas it used to take 11 computer science courses to complete the major, it now will take 9 courses.
- The minor is reduced by a single course although the total number of hours remains at 18.

**WHY?**

Computer science involves both theory and practice. Its introductory classes must provide a basic foundation in the use of tools as well as providing fundamental intellectual ideas. Nationally, all quality programs have moved to incorporating a laboratory experience in the computer science courses. The only courses without a laboratory are those that are primarily theoretical and mathematical.

After offering CMSC 150 in Fall, 1999 with a formal laboratory and seeing how much better was the educational experience, we decided to extend the formal lab to CMSC 221 and use consulting labs in most other classes.

The changes bring the Computer Science Program at UR in line with other programs across the country.

**Other News - People Changes**

- **Dr. Joe Kent** has assumed the duties of the Associate Dean of Arts & Sciences as of January, 2000. He will not be teaching during the 2000-2001 session.

- **Dr. Eric Bax** has taken a personal leave of absence to be in California with his new wife. His leave will extend through the 2000-2001 session. They were married over Fall Break. Congratulations to the Baxes.

- If you are curious to the many designations of “Staff” on computer science classes, we are seeking two new permanent faculty in computer science and hope that these searches will be completed in a few weeks. Thanks to the students who have hosted lunches for our visiting job candidates.

- **Dr. Della Fenster** has started a personal leave that will extend through 2000-2001. She will be giving birth to the newest member of her family in April. We wish her well.

- **Dr. Jim Davis** will be in England on leave next year working for Hewlett Packard on applications of coding theory.

- **Dr. Kathy Hoke** will be the new Chair of Mathematics & Computer Science starting in the fall.