MEMORANDUM

TO: Stephen Halperin  
Dean, College of Computer, Mathematical and Physical Sciences

FROM: Phyllis Peres  
Associate Provost for Academic Planning and Programs

SUBJECT: Proposal to Add a Minor in Computer Science (PCC Log No. 05004)

At its meeting on November 18, 2005, the Senate Committee on Programs, Curricula, and Courses approved your proposal to add a Minor in Computer Science. A copy of the approved proposal is enclosed.

The changes are effective in Spring 2006. All advisors should be notified and the College should ensure that the approved guidelines are followed.

/cwr

Enclosure

cc: James Baeder, Chair, Senate PCC  
Sarah Bauder, Office of Student Financial Aid  
Mary Giles, University Senate  
Barbara Hope, Data Administration  
Kathy McAdams, Undergraduate Studies  
Anne Turkos, Archives  
Linda Yokoi, Records & Registrations  
Deborah Bryant, College of Computer, Mathematical and Physical Sciences  
James Purtilo, Computer Science
DATE SUBMITTED:  

PCC LOG NO. 05004

COLLEGE/SCHOOL: CMPS

DEPARTMENT/PROGRAM: CMSC

PROPOSED ACTION (A separate form for each) ADD X DELETE CHANGE____

DESCRIPTION (Provide a succinct account of the proposed action. Details should be provided in an attachment. Provide old and new sample programs for curriculum changes.)

We propose to add a new minor in computer science.

JUSTIFICATION/REASONS/RESOURCES (Briefly explain the reason for the proposed action. Identify the source of new resources that may be required. Details should be provided in an attachment.)

Computer Science is a discipline which would complement any major on campus. Creation of a minor in computer science will allow students to learn the fundamentals of computer science while still pursuing their own major.

In addition, the enrollment in CMSC courses has dropped drastically in the past several years. We are proposing to use existing CMSC courses both at the lower level and upper level. Seats are available in these courses. We do not anticipate the need for any new resources.

APPROVAL SIGNATURES

1. Department Committee Chair
   Signature: James D. Bullock  
   Date: 4/4/05

2. Department Chair
   Signature:  
   Date: 4/5/05

3. College/School PCC Chair
   Signature:  
   Date: 4/7/05

4. Dean
   Signature:  
   Date: 5/10/05

5. Dean of the Graduate School (if required)
   Signature:  
   Date: 

6. Chair, Senate PCC
   Signature: James D. Bailey
   Date: 11/17/05

7. Chair of Senate
   Signature:  
   Date: 

8. Vice President for Academic Affairs & Provost
   Signature:  
   Date: 11/24/05
Minor Proposal

I Description: The Computer Science Department proposes to create a minor in computer science. This minor will give students an understanding of algorithmic reasoning and problem solving methods involving computers and computation, together with a solid base to help student adapt to future changes in this technology, all within the student’s current major. We intend and anticipate that the minor will complement and enhance the program of study in most other majors.

Currently our courses are restricted to computer science and computer engineering majors until the first day of classes. Students pursuing a minor in computer science will be allowed to register for our courses at any time just as our majors, hence having the effect of making our courses more broadly accessible.

II. Requirements:

All listed courses must be completed with a grade of C or better. MATH140 with a grade of C or better is a pre-requisite for entrance into the curriculum for the minor.

1. CMSC132: Introduction to Object Oriented Programming (or acceptable score on the CMSC exemption exam) 4 credits
2. CMSC212: Introduction to Low Level Programming Concepts (or acceptable score on the CMSC exemption exam) 4 credits
3. CMSC250: Discrete Structures (or acceptable score on the CMSC exemption exam) 4 credits
4. CMSC330: Organization of Programming Languages 3 credits
5. One of (CMSC311: Computer Organization or CMSC351: Algorithms) 3 credits

Total Credits: 15-24 credits

- Note, MATH141 is a co-requisite for CMSC132.
- Students who satisfy all three of 132, 212 and 250 by exemption exam shall take one additional 400 level class from the approved list. This obligation is in addition to all other minor requirements.
- Courses listed under #6 above are those presently accepted by the Department as satisfying CS major requirements. 400 level courses satisfying this minor will track the major list should it change.
- With prior permission of the Undergraduate Director, and at his/her discretion, at most one section (3 credits) of CMSC498, Independent Study, may substitute for one of the two core CS classes in #6 above. This provision is intended to allow students to pursue unexpected opportunities for study of interdisciplinary topics having a substantial computational component complementing the major.
• Course combinations:
  o Students may not use more than one of CMSC460 or CMSC466 toward the minor.
  o Students may not use more than one of CMSC421, CMSC424, CMSC426 or CMSC427 toward
    the minor.
  o Students may not use more than one of CMSC452 or CMSC456 toward the minor.

  These constraints are motivated by our interest in nurturing some amount of breadth in the minor,
  and parallel constraints already in place for our majors.

III. Faculty Advisor: Undergraduate Director: Dr. James Purtilo. Administrative assistance will be
provided by the undergraduate program coordinator: Kim Ozga

Together they will have the following duties:
- to inform and advise students about the Minor
- to oversee the implementation of the Minor and ensure consistency with university requirements
- to advise students of Minor requirements
- to keep and maintain the Minor Advising Worksheet [Sample attached]
- to issue final departmental approval to confirm completion of requirements
- to forward information about completed Minor requirements (transcript; Minor Advising Form) to the
  Dean of CMPS

IV. Restrictions:

Students majoring in Computer Science and/or Computer Engineering may not obtain a minor in
Computer Science.

A student may not use more than six credits (two courses) to fulfill the requirements of more than one
major or minor.

Courses completed in one minor may not be used to satisfy the requirements in another minor.

No more than six credits (two courses) may be taken at an institution other than the University of
Maryland College Park. At least six upper division credits applied to the minor must be taken at this
university.
Name of Student ______________________________________________________________

Student ID Number__________________________Major _____________________________

Telephone ______________________ E-Mail _____________________________

Estimated Date of Graduation ____________________________

MATH140 with a grade of C or better is a pre-requisite for entrance into the curriculum for the minor.

Courses completed for Minor

<table>
<thead>
<tr>
<th>Required</th>
<th>Date</th>
<th>Grade</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMSC132</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>CMSC212</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>CMSC250</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>CMSC330</td>
<td></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

One of the following:
CMSC311 or CMSC351

Two of the following core courses:
CMSC411, 412, 414, 417, 420, 421, 424, 426, 427, 430, 433, 434, 435, 451, 452, 456, 460, 466

CMSC4____        _________________________________________________________ 3
CMSC4____        _________________________________________________________ 3

** Students may not use both CMSC460 and CMSC466 toward the minor in Computer Science.
** Students may not use more than one of CMSC421, CMSC424, CMSC426 and CMSC427 toward the minor in Computer Science.
** Students may not use both CMSC452 and CMSC456 toward the minor in Computer Science.
** Students who satisfied all of CMSC132, CMSC212 and CMSC330 by exemption exam require one additional 400 level class from the list above.
** With prior application and permission, the student may use CMSC498 to satisfy one core above.

This student has completed the requirements for a Minor in Computer Science

(Signature of Minor Advisor)               (Date)
Catalogue Description for Computer Science Minor:

The Minor

The purpose of the minor in Computer Science is not only to give students a strong foundation in and understanding of algorithmic reasoning, problem solving methods involving computers and computation, and a solid base to help students adapt to future changes in technology, but to complement and enhance any student’s major program of study.

Participation in the minor will allow students to register for classes at the same time as majors currently enrolled in the Computer Science and Computer Engineering programs.

The minor in Computer Science consists of 15-24 credits; all courses must be completed with a grade of C or better. MATH140 is a pre-requisite for entrance into the curriculum for the minor.

Requirements:

1. CMSC132: Introduction to Object Oriented Programming  
   (or acceptable score on the CMSC exemption exam)

2. CMSC212: Introduction to Low Level Programming Concepts  
   (or acceptable score on the CMSC exemption exam)

3. CMSC250: Discrete Structures  
   (or acceptable score on the CMSC exemption exam)

4. CMSC330: Organization of Programming Languages

5. One of (CMSC311: Computer Organization or CMSC351: Algorithms)

   (Note, some of these classes variously have MATH141, MATH240, MATH241 or PSYC100 as prerequisites.)

   • Note, MATH141 is a co-requisite for CMSC132. MATH140 is a co-requisite for CMSC131, which in turn is a pre-requisite for CMSC132.
   • Students who satisfy all three of 132, 212 and 250 by exemption exam shall take one additional 400 level class from the approved list. This obligation is in addition to all other minor requirements.
   • With prior permission of the Undergraduate Director, and at his/her discretion, at most one section (3 credits) of CMSC498, Independent Study, may substitute for one of the two core CS classes in #6 above. This provision is intended to allow students to pursue unexpected opportunities for study of interdisciplinary topics having a substantial computational component complementing the major.
   • Course combinations:
     o Students may not use more than one of CMSC460 or CMSC466 toward the minor.
     o Students may not use more than one of CMSC421, CMSC424, CMSC426 or CMSC427 toward the minor.
     o Students may not use more than one of CMSC452 or CMSC456 toward the minor.