

Proposal Form

Educational Policy and Curriculum Committee

PLEASE COMPLETE ITEMS 1 THROUGH 5:

1. Fill in the name and number of the course, the name of the policy, or the curriculum/major proposed for modification.

Course: CmSc/Math 180 Discrete Mathematics

Change in Prerequisite, Description, Cornerstone Designation

* submit copies of the current and proposed requirements for the major

2. Addition _____ Deletion _____ Change X _____
3. Does this proposal impact other majors or minors? Yes** _____ No X _____
4. Does this proposal impact the Cornerstone program? Yes** X _____ No _____
5. Does this proposal impact teacher licensure? Yes** _____ No X _____

** If yes, obtain appropriate signatures (signifying review) below.

Attach a statement that addresses each of items 6 through 11:

6. Nomenclature of course(s) (Department, Number, Title, Credit Hours)
7. Catalog description of course(s) (including prerequisites), curriculum or policy
(For changes, please submit a description of the existing course, policy, or curriculum.)
8. Relationship to major, other disciplines and frequency of offering
9. Proposed configuration [traditional (MWF 50 min. or TTh 75 min.) or other]
10. (a) A complete statement of the proposal's rationale to assist consideration by the EPCC
(b) A 5-line summary of the rationale to be presented to the full faculty
11. Cost estimates and staff estimates

APPROVED BY:

Signature of proposer

Date

Signature of Division Chair

Signature of Department Chair

REVIEWED BY:

Signature of Academic Dean

Signature of Education Department Chair**

Signature of Department Chair in affected major**

Signature of Cornerstone Director**

**if applicable

Upon completion of this form, print a copy to be circulated for signatures. In addition, send a copy of the proposal as an email attachment to mclean@simpson.edu (for 2006-2007 school year)

6. Change in Prerequisite, Description, Cornerstone Designation for CmSc/Math 180 Discrete Mathematics**7. Old Catalog description**

This course covers selected topics in discrete mathematics that are essential to the study of computer science as well as other science disciplines. The course focuses on developing problem-solving and reasoning skills. Topics include sets, relations and functions, basic logic and Boolean algebra, proof methods, recursion and induction, counting and basic probability, graphs and trees. Cornerstone 2B. Same as Math 180. Three hours

Prerequisite: Math 130 College Algebra or equivalent preparation

New Catalog Description

This course covers selected topics in discrete mathematics that are essential to the study of computer science. Topics include logic and proofs, sets, relations and functions, algorithms and counting of operations, recursion and recurrence relations, graphs and trees. The course has a programming component to illustrate the discussed topics. Same as Math 180. Three hours.

Prerequisite: Math 130 College Algebra or equivalent preparation

Co-requisite: CMSC 150 Fundamentals of Computing I or permission of instructor.

Comment on the changes

The changes preserve the old content of the course and add new content, namely “algorithms and counting of operations”. The topic “algorithms and counting of operations” is required by the majority of CS departments in the US colleges and universities. A co-requisite has been added and the cornerstone designation has been dropped.

8. This course is required of all CmSc/CIS majors. It is and will continue to be offered in the Spring semester of each academic year and will also be offered regularly in the DAL program.
9. CmSc\Math 180 will be offered on a MWF basis as part of the traditional program or one evening a week in the semester mode as part of the DAL program.

10. Rationale

- a. **Reasons for including “algorithms and counting of operations”:** The new description of the course reflects better its orientation to meet the needs of the CS/CIS students. As stated in the ACM recommendations for Computing Curricula, discrete structures is foundational material for computer science. Acquiring sound knowledge in discrete structures is of crucial importance for the success of the CS/CIS students. The algorithmic perspective on the course topics and the programming component will help CS/CIS students to understand better the mathematical foundations of computing. (ACM is the primary professional organization for computer scientists and regularly makes curriculum recommendations.)
- b. **Reasons for including co-requisite CMSC150 Fundamentals of computing I:** The programming component requires that the students taking this course have been exposed to introductory programming. Programming concepts introduced in CmSc 150 will be used to illustrate topics in CmSc 180 and programming assignments will be made to reinforce the topics covered.
- c. **Reasons for removing Cornerstone 2B designation.** Since the content of the course will be primarily intended for CS/CIS students (for whom the course is required) and since the course has specific prerequisites, it is not appropriate to be listed as a Cornerstone 2B course.

11. No changes from the current offering.