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Number: 01-62e
Submission Date:
Action-Date: UWUCC App-4/16/02
Senate App 5/7/02

CURRICULUM PROPOSAL COVER SHEET
University-Wide Undergraduate Curriculum Committee

I. CONTACT

Contact Person Gerald Buriok Phone 7 2608

Department Mathematics

II. PROPOSAL TYPE (Check All Appropriate Lines)

X COURSE MATH 219 Discrete Mathematics
Suggested 20 character title

____ New Course* _____
Course Number and Full Title

X Course Revision MATH 219 Discrete Mathematics
Course Number and Full Title

____ Liberal Studies Approval+ for new or existing course _____
Course Number and Full Title

____ Course Deletion _____
Course Number and Full Title

____ Number and/or Title Change _____
Old Number and/or Full Old Title

_____
New Number and/or Full New Title

X Course or Catalog Description Change MATH 219 Discrete Mathematics
Course Number and Full Title

PROGRAM: Major Minor Track

____ Program Revision* _____
Program Name

____ Program Deletion* _____
Program Name

Part II. Description of Curriculum Change

1. New syllabus of record. (Attached.)

2.Summary of proposed revisions.

The proposed change is in the prerequisite, replacing "MATH 123, 127, or 122" with "MATH 122 or 123."

a. Proposed new catalog description:

[redacted]

Prerequisite: COSC 110 and MATH 122 or MATH 123

[redacted]

New Syllabus of Record

I. Catalog Description

MATH 219 Discrete Mathematics

3 semester hours
3 lecture hours
0 lab hours
(3c-0l-3sh)

Prerequisites: COSC 110 and MATH 123, or MATH 122

Topics include set algebra, mappings, relations, semigroups, groups, directed and undirected graphs, Boolean algebra, and propositional logic, with examples and applications of these various areas of computer science. Emphasis is placed on developing an intuitive understanding of basic structures rather than formal theories and influence of these topics on theory and practice of computing.

II. Course Objectives

E. Semigroups and Groups (6-7 hours)

2. Semigroups
3. Products and Quotients of Semigroups
4. Groups
5. Products and Quotients of Groups

F. Finite-State Machines and Languages (5-6 hours)

1. Finite-State Machines
2. Semigroups, Machines, and Languages
3. Machines and Regular Languages

Depending on orientation and time, one may include the following topics.

G. Order Relations and Structures (6-7 hours)

1. Partially Ordered Sets
2. Extremal Elements of Partially Ordered Sets
3. Lattices
4. Boolean Algebra
5. Implementation of Boolean Functions

H. Groups and Coding

1. Coding of Binary Information and Error Detecting

Rosen, Kenneth. Discrete Mathematics /Applications. (4th ed), New York, WCB/McGraw Hill, 1999.

Grimaldi, Ralph. Discrete and Combinatorial Mathematics, (4th ed.), New York, Addison Wesley Longman Inc, 1998.

MA 219

Mathematics Department
Indiana University of Pennsylvania
Indiana, PA 15705

Course Number: MA 219

Title: Discrete Mathematics

Credits: 3 semester hours

Prerequisites: CO 110 and MA 123, MA 127, or MA 122

Textbook: Discrete Mathematical Structures for Computer Science
by Kolman and Busby
Prentice Hall

Revised: 9/92

Catalog Description:

Topics include set algebra, mappings, relations, semigroups, groups, directed and undirected graphs, Boolean algebra, and propositional logic, with examples and applications of these various areas of computer science. Emphasis is placed on developing an intuitive understanding of basic structures rather

V. Semigroups and Groups (6-7 hours)
- A. Binary Operations
- B. Semigroups
- C. Products and Quotients of Semigroups
- D. Groups
- E. Products and Quotients of Groups

VI. Finite-State Machines and Languages (5-6 hours)
- A. Finite-State Machines
- B. Semigroups, Machines, and Languages
- C. Machines and Regular Languages
- D. Simplification of Machines

Depending on orientation and time, one may include the following topics:

VII. Order Relations and Structures (6-7 hours)

[redacted]

- C. Lattices
- D. Boolean Algebra
- E. Implementation of Boolean Functions

VIII. Groups and Coding

A. Coding of Binary Information and Error Detection (3-4 hours)

- B. Decoding and Error Correction

[redacted]

Mathematics Department Curriculum Changes

Response Form

✓ The Mathematics Department has informed me of the proposed changes listed below, and I support these changes.

The Mathematics Department has informed me of the proposed changes listed

Computer Science
Department

Gary L Bertenthal / Jan 18, 2001
Chairperson / Date

1. Delete MATH 127 from prerequisite list for MATH 219.