

Glassboro State College Senate Curriculum Committee

Approval Form

Proposal Title: Minor Changes in Graduate Course Offerings in Mathematics

Sponsor(s) John Sooy Dept.: Math/Computer Science Ext. 6044
Janet Caldwell Math/Computer Science

Check one: Course Specialization Concentration Minor Achievement Certificate
 Certification Program Major Program Minor Change reorganization
(please name deletion or credit/title/catalog change)

Undergraduate Graduate _____ Credit Hours

Step 1 (Department) 2/1/89

Approved John Sooy
Date

Not Approved
John Sooy
Dept. CC Chairperson

Reviewed 2-1-89
Date

John Sooy
Dept. Chairperson

Step 2 (Receipt)

SCC# 88-89-25

Proposal Received 2/1/89
Date

Brenda A. Bolay
SCC Chairperson

Step 3 (School CC)

Reviewed 2/14/89

Approved
 Not Approved

Comments:

Ronald J. Gordon
School Curriculum Chairperson

Step 4 (Academic Dean)

Comments:

Recommend
 Not Recommend
 Conditionally Recommend (see comments)

Reviewed 2-27-89
Date

Merna Dorkow
Signature, Dean of School

Step 5 (SCC)

Open Hearing 3/16/89 Approved by Senate Curriculum Committee 3/16/89
Date Date

Returned to sponsor(s) for the following reasons:

App.

Step 6 (Senate)

Presented to Senate 3/17/89 Approved Not Approved
Date

Notification to Executive Vice-President/Provost 3/31/89
Brenda A. Bolay
Signature, SCC Chairperson

Step 7 (Executive V.P./Provost)

Received 4/3/89
Date

Approved Yes No

If no, reasons are as follows:

Student credit hours N.A.

Faculty load hours N.A.

Equalized credit hours N.A.

Official copy and approval sheet filed 4/27/89
Date

Adrian Tinsley
Signature, Executive Vice-President/Provost

Registrar

Approved course description received _____
Date

same } program change ok
same }

Hegis Taxonomy and Course Number assigned _____

Signature, Registrar

Date

Notification forwarded:

- Senate Curriculum Committee Chairperson
- Department Chairperson(s)
- Academic Dean
- Registrar
- Sponsor(s)

Proposal for Minor Changes in Graduate Course Offerings in Mathematics

1. Details

- a) Changes requested from Present Graduate Program Courses (pg 3) to Revised Graduate Subject Matter Teaching Program - Mathematics (pg 4).
- b) Sponsors: Janet Caldwell and John Sooy.

2. Overview and Rationale

Overview

Graduate courses in mathematics offered at Glassboro State College are at the present time intended primarily to improve the understanding and competency of mathematics teachers. There is no graduate degree in mathematics per se, although students from four different graduate programs in education take courses in mathematics. The intent of the Department's graduate offerings is to provide an opportunity for all students, upon completion of their program, to meet the Level III requirements established by the CUPM Panel on Teacher Training (1983).

The largest number of students served by graduate courses in mathematics comes from the mathematics specialization of the Subject Matter Teaching (SMT) program. Presently, there are 20 practicing secondary school teachers in this program. These students complete 12-24 hours in mathematics, plus an additional six hours in a seminar in mathematics education taught by the department.

A related program is Community College Education (C.C.E.). This program presently includes ten graduate students in mathematics. Students in this program complete 18-24 semester hours of mathematics courses, plus the same six hours of seminar as in the Subject Matter Teaching program. These students are preparing to teach in the community college and generally take more advanced mathematics courses. When enrollments in the two programs are combined, there is a total of 30 matriculated graduate mathematics students.

Two other programs are serviced by graduate mathematics courses. The Secondary School Teaching (SST) program presently includes 19 students in all subject areas. These students are required to complete 3-9 semester hours in their teaching subject area. This program was listed in the previous catalog as a specialization under the SMT program (curriculum specialist) but seems now to have become a program on its own, with Dick Gardiner as advisor. There are presently no more than two mathematics teachers in this program; we are not able to advise and monitor their progress nor the appropriateness of their course selections.

The last program providing enrollments in graduate mathematics courses is the new Master of Science in Teaching (MST). These students will take three semester hours of advanced academic study in the fall of each year. They are expected to grow from an initial eight in mathematics to as many as 30.

Rationale

We are preparing revisions to the SMT and CCE programs to improve the quality of the graduate course offerings, to increase the number of students enrolled in graduate sections, and to allow for the influx of MST students. At the heart of this proposal is the establishment of a required core of five graduate courses. One of these is a new course to be developed, "Foundations of Mathematics." This graduate course will serve students in all four programs and will be offered in the fall each year. This course will probably enroll a minimum of ten students, with enrollments increasing as the MST program grows.

Also required as a core course is "Topics in Discrete Mathematics." This course will follow "Foundations of Mathematics" in alternate years. It is designed to update students' understanding of discrete algorithms and methods, topics only recently introduced to the undergraduate curriculum. This course will be taken by all students in the SMT and CCE programs (approximately ten each year) and may be elected by students in the SST program as a second or third mathematics course.

The third core course to be required is the graduate course "History of Mathematics." This course will be offered in alternate years in the spring semester, with approximately ten students anticipated from the SMT, CCE, and perhaps the SST programs.

Also required of students in the SMT and CCE programs is a two-semester mathematics education seminar taught by the mathematics department. These courses have in the past been offered each year, with enrollments of three or four each semester. In the future, the seminar will be offered in alternating years, so that enrollments of six to eight are expected.

The remaining courses in any student's program will be selected on an individual basis to ensure that each student meets the Level II requirements of the CUPM recommendations, with coursework at the undergraduate or graduate levels in algebra, analysis, and geometry.

3. Results of Consultation

A meeting was held on January 31, 1989, with Shirley O'Day, Dickinson Gardiner, Brenda Bolay, Dick Smith, Tom Gallia, John Sooy, Janet Caldwell, and Fran Masat attending. Suggestions from that meeting have been incorporated.

Present Graduate Program Courses

The present program is taken from page 24 of the Graduate Catalog, 1987-89.

Present Program (1987-1989)

1. Required Courses. 9-15 s.h.

One of:

Linear Alg & Matrix Thy
Abstract Alg I & II

One of:

Advanced Calc I & II
Complex Analysis I & II

One of:

Modern Geometry
Projective Geometry

2. Restricted Electives. 3-9 s.h.

Number Theory
Mathematical Logic
Probability & Stat.
Topology
Independent Study
History of Mathematics
Comp. Sci. I: Pascal
Comp. Sci. II: Assembler
Comp. Sci. III: Data Struc.
Advanced BASIC

3. Seminar and Research: 6 s.h.

Prob. in Math. Ed. I & II

Revised Graduate Subject Matter Teaching Program - Mathematics

Students are expected to have an undergraduate background in Abstract Algebra, Geometry, and Calculus III. If not, up to 6 s.h. of upper level undergraduate course work may be required as part of the graduate program.

All course are three s.h. credit.

Required Core

9 s.h.

1701.500 Foundations of Mathematics
1703.550 Topics in Discrete Mathematics *
1701.522 History of Mathematics

Seminar and Research

6 s.h.

0833.600 Problems in Mathematics Education I
0833.601 Problems in Mathematics Education II

Restricted Electives

3-12 s.h.

1701.510 Advanced Calculus I
1701.511 Advanced Calculus II
1701.513 Complex Analysis I
1701.513 Complex Analysis II
1701.525 Modern Geometry
1701.503 Number Theory
1701.505 Probability and Statistics
1701.526 Point Set Topology
1701.524 Abstract Algebra I
1701.527 Abstract Algebra II
1701.504 Mathematical Logic
Selected Graduate Computer Science Courses

* title and hegis number change applied for: was "Discrete Math for Teachers"