

Library Resource Form Required

Submission Deadlines: Fall - October 11, 2005 Spring - February 14, 2006

TITLE Changes in the Requirements for the Master of Arts in Mathematics

Sponsor(s) K. Amer and M-S Li e-mail: amer@rowan.edu
e-mail: sun@rowan.edu
e-mail:

DEPARTMENT Mathematics
College Liberal Arts and Sciences

If LAS -check: History/Humanities Social/Behavioral Sciences
 Math/Science

DESCRIBE: UNDERGRADUATE GRADUATE

- New Degree Program New concentration, specialization, track
- New Major New Minor
- New Certificate of Graduate Study Program (COGS & COGA)
- Major changes of degree requirements/major/minor or certificate program
- Change to College name, School, Department, or Degree

Signatures Required: rep

Department Chair:
Department CURRICULUM
Academic DEAN:

COLLEGE CURRICULUM

Signature: College Ct

Signature: SENATE

Comments:

Signature: Executive Vice President/Provost:

Signature: REGISTRAR

Date:

Notification Forward:

- SCC CHAIR Academic Dean
- IR Department Chair
- CAP VP/Student Affairs
- Registrar Other-

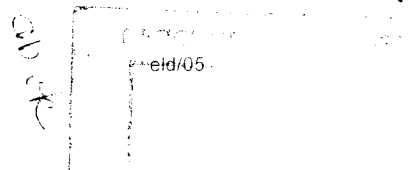
_____ of the Senate
Date: 2/3/06
Date: 2/3/06
Date: 2-7-06
2/3/06
7/06

Date: 5/12/06

Approved: _____
Not Approved: _____

Date: 5/25/06 Course Description Received & Approved
Hegis Taxonomy & Course # _____

6/15/06
transmitted to



THIS FORM MUST BE COMPLETED FOR ALL CURRICULUM PROPOSALS

The purpose of this form is to provide a channel of communication between the Campbell Library staff and faculty when changing and designing new courses/programs. The information will be used to assess the resources available in the library, and to identify resources the library should acquire to support the course/program. The information will also provide the rationale for institutional support for library acquisitions. This form should be completed in a coordinated effort between: the course sponsor(s) and the academic department liaison librarian.

Note: Sponsor(s) complete parts A & B
If assistance is required to complete, please notify the librarian liaison.
Forward this form to the librarian who will complete parts C, D & E

When form is completed, attach to the original curriculum proposal before submitting to the Senate office.

A. College: Liberal Arts & Sciences Department: Math

Proposed by: K. Amer & M-S Li Date: Jan. 26, 2006

COURSE TITLE: Changes in the Requirements for the Master of Arts in Mathematics

Anticipated Date for Course/Program Offering: Fall, 2007

B. List specific resources that should be acquired to support this course.

None because the proposal does NOT involve introduction of new courses or changes in existing courses.

C. Describe the resources available in the library to support this course/program, including reference, monographic, electronic databases, audio-visual materials, etc. A summary statement is sufficient.

All existing materials for the graduate study of Math in the Library.

D. List key periodicals available in the library to support this course/program.

Annals of Mathematics, Annals of Probability, Proceedings of AMS, Notices of AMS, American Mathematical Monthly

E. Librarian comments & recommendations:

No changes in library support are needed.

LIBRARIAN LIAISON: Denise Brush

Signature: Denise A. Brush

Changes in the Requirements for the Master of Arts in Mathematics

Dr. Khaled Amer and Dr. Ming-Sun Li

This proposal contains the following changes in the requirements for the degree M.A. in Mathematics:

- Abstract Algebra I, replacing Foundations of Mathematics and Point Set Topology, is to become a required course.
- Abstract Algebra II will be included in Bank A, replacing Probability and Statistics.
- The minimum credit hours required from Bank A will be reduced to 3 so that students can have more courses of their choice.
- Foundations of Mathematics, Point Set Topology, Probability and Statistics, and Engineering Applications of Analysis will be added to Bank B.

1. Details.

- a. Changes Requested:
 - i. Change in course requirements from:

Students will complete a minimum of 30 semester hours of graduate credits in mathematics. Twelve semester hours will provide a core experience for all graduate students, including two courses in analysis, an advanced course in linear algebra, and a choice of topology or a course in the foundations of mathematics.

Students will also complete 6—9 s.h. from Bank A, 6—9 s.h. from Bank B, and a minimum of 3 s.h. in Seminar and Research. Students should enroll in the required core courses first. The Mathematics Seminar is required and should be taken after most of the course work is completed. The comprehensive exam is usually taken during the Mathematics Seminar.

I. Required Core12 .S.H.

1701.502	Linear Algebra and Matrix Theory
1701.510	Real Analysis
1701.512	Complex Analysis,
1701.526	Point Set Topology, or
1701.500	Foundations of Mathematics

II. Bank A6—9 S.H.

1701.505	Probability & Statistics
1701.511	Real Analysis II
1701.513	Complex Analysis II
1701.524	Abstract Algebra I

iii. Bank B6—9 S.H.

1701.503	Number Theory
1701.504	Mathematical Logic
1701.507	Differential Geometry
1703.511	Operations Research I
1703.512	Operations Research II
1701.520	Topics-Applied Mathematics
1701.521	Non-Linear Differential Equations

1701.522	History of Mathematics
1701.525	Modern Geometry
1701.527	Abstract Algebra II
1701.529	Numerical Analysis
1703.550	Topics-Discrete Mathematics

iv. Seminar and Research3—6 S.H.

1701.533	Graduate Seminar in Mathematics (Required)
1701.550	Independent Study

Total30—33 S.H.

To:

Students will complete a minimum of 30 semester hours of graduate credits in mathematics. Twelve semester hours will provide a core experience for all graduate students, including one course in linear algebra, one course in abstract algebra, and two courses in analysis.

Students will also complete 3—9 s.h. from Bank A, 6—12 s.h. from Bank B, and a minimum of 3 s.h. in Seminar and Research. Students should enroll in the required core courses first. The Mathematics Seminar is required and should be taken after most of the course work is completed. The comprehensive exam is usually taken during the Mathematics Seminar.

I. Required Core12 S.H.

1701.502	Linear Algebra & Matrix Theory
1701.510	Real Analysis I
1701.512	Complex Analysis I
1701.524	<u>Abstract Algebra I</u>

III. Bank A3—9 S.H.

1701.511	Real Analysis II
1701.513	Complex Analysis II
1701.527	<u>Abstract Algebra II</u>

III. Bank B6—12 S.H.

1701.500	<u>Foundations of Mathematics</u>
1701.503	Number Theory
1701.504	Mathematical Logic
1701.505	<u>Probability & Statistics</u>
1701.507	Differential Geometry
1703.511	Operations Research I
1703.513	Operations Research II
1701.515	<u>Engineering Applications of Analysis</u>
1701.520	Topics in Applied Mathematics
1701.521	Non-Linear Differential Equations
1701.522	History of Mathematics

1701.525	Modern Geometry
1701.526	<u>Point Set Topology</u>
1701.529	Numerical Analysis
1703.550	Topics in Discrete Mathematics

iv. Seminar and Research3—6 S.H.

1701.533	Graduate Seminar in Mathematics (Required)
1701.550	Independent Study

Total30—33 S.H.

b. Sponsors: Drs. Khaled Amer and Ming-Sun Li

2. Rationale:

Abstract Algebra is one of the three core areas of pure mathematics. It deals with axiomatically defined algebraic structures, such as groups, rings, and fields. Materials covered in Abstract Algebra and techniques for developing the materials constitute a necessary part of advanced mathematics. Meanwhile, the axiomatic approach helps students acquire a better overall understanding of mathematics. Because of its importance in the study of mathematics, Abstract Algebra is a required course for most of the graduate programs in the U.S. By making Abstract Algebra I as a required course and adding Abstract algebra II to Bank A, we ensure that students will have deeper knowledge of algebra.

The other proposed changes are in part the graduate committee's response to the outside review conducted last year. We agree with the outside reviewer Dr. David Sprout that fine-tuning the balance between curriculum depth and program flexibility can bring broader interest in our graduate program. Bank A was designed for curriculum depth and Bank B for breadth. This proposal designates more existing courses to Bank B, and allows students to select up to 4 courses from Bank B. As a result, the minimum number of required credits from Bank A is reduced to 3 from 6.

3. Consultation:

Consultation is not needed. These are changes in the program of M.A. in Mathematics. No other departments will be affected by the proposed changes.

4. Library Resources:

The proposal does not introduce any new courses and neither makes changes in existing courses. No additional library resources are needed for implementation of the proposed changes.

5. Time of Implementation:

Fall, 2007

ROWAN UNIVERSITY SENATE
COLLEGE CURRICULUM COMMITTEE WORKSHEET

PART I: INFORMATION								
COLLEGE NAME (circle one)	BUS	COM	ED	ENG	FPA	LAS-HUM	LAS-M/S X	LAS-SBS
Date of Hearing	3 March 2006							
Type of Hearing (circle one)	OPEN X	CLOSED						
SCC Proposal #	05 – 06 – 834							
Proposal Title	Changes in the Requirements for the MA in Math							
Sponsor(s) in Attendance	Amer, Li							
PART II: COMMON PROBLEMS REVIEWED						Sponsor's Initials	College Chairperson's Initials	
Consultation letters attached							N/A	
Library form completed by librarian (not sponsor)							DRK	
Prerequisites consistent (initial page and catalog description)							N/A	
Course title consistent throughout proposal							DRK	
Catalog description – on separate page – complete with HEGIS, credits, and prereqs (with HEGIS)							N/A	
All courses throughout proposal identified with correct title and HEGIS numbers							DRK	

PART III: COMMITTEE DECISION

- X Pass with NO CHANGES
- Passed – Return to Sponsor for MINOR CHANGES
- Tabled w/SUGGESTED MINOR CHANGES
- NOT APPROVED

HEARING SUMMARY:
