UNIVERSITY FACULTY SENATE FORMS

Academic Program Approval

This form is a routing document for the approval of new and revised academic programs. Proposing department should complete this form. For more information, call the Faculty Senate Office at 831-2921.

Submitted by: _Louis Rossi_____phone number__831-1880_____

Department: _Mathematical Sciences_____email address_rossi@math.udel.edu

Date: 24 October 2012_____

Action: **Revise major _____**
(Example: add major/minor/concentration, delete major/minor/concentration, revise major/minor/concentration, academic unit name change, request for permanent status, policy change, etc.)

Effective term__13F_____
(use format 04F, 05W)

Current degree__BS_____
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed change leads to the degree of: __BS_____
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed name:__ _____
Proposed new name for revised or new major / minor / concentration / academic unit (if applicable)

Revising or Deleting:

Undergraduate major / Concentration:_BS Mathematical Sciences _
(Example: Applied Music – Instrumental degree BMAS)

Undergraduate minor:_____
(Example: African Studies, Business Administration, English, Leadership, etc.)

Graduate Program Policy statement change:_____
(**Must attach** your Graduate Program Policy Statement)

Graduate Program of Study:_____
(Example: Animal Science: MS Animal Science: PHD Economics: MA Economics: PHD)

Graduate minor / concentration:_____

Note: all graduate studies proposals must include an electronic copy of the Graduate Program Policy Document, highlighting the changes made to the original policy document.

List new courses required for the new or revised curriculum. How do they support the overall program objectives of the major/minor/concentrations)?
(Be aware that approval of the curriculum is dependent upon these courses successfully passing through the Course Challenge list. If there are no new courses enter "None")

None.

Explain, when appropriate, how this new/revised curriculum supports the 10 goals of undergraduate education: http://www.ugs.udel.edu/gened/

Goal 1: Students in the major will attain effective skills in quantitative reasoning and information technology skills through their normal coursework in MATH and ECON..

Goal 3: Students will work and learn both independently and collaboratively as they complete the curriculum.

Identify other units affected by the proposed changes:
(Attach permission from the affected units. If no other unit is affected, enter "None")

None.

Describe the rationale for the proposed program change(s):
(Explain your reasons for creating, revising, or deleting the curriculum or program.)

The change in the computer science requirement reflects changes in the computer science curriculum. CISC 108 is designed for computer science majors. CISC 106 is better suited to math majors who wish to implement mathematical algorithms in a structured programming language. Furthermore, CISC 106 or CISC 108 is required for CISC 181, so we believe this needs to be listed in the curriculum requirements.

Program Requirements:
(Show the new or revised curriculum as it should appear in the Course Catalog. If this is a revision, be sure to indicate the changes being made to the current curriculum and **include a side-by-side comparison** of the credit distribution before and after the proposed change.)

Proposed revisions:

Add "CISC 106 General Computer Science for Engineers" to program requirements."

Delete "(Students with no previous experience in a programming language should start with CISC 106 or CISC 108)"

ROUTING AND AUTHORIZATION: (Please do not remove supporting documentation.)

Department Chairperson _____Date_____

Dean of College_____Date_____

Chairperson, College Curriculum Committee_____Date_____

Chairperson, Senate Com. on UG or GR Studies_____Date_____

Chairperson, Senate Coordinating Com._____Date_____

Secretary, Faculty Senate_____Date_____

Date of Senate Resolution_____Date to be Effective_____

Registrar _____Program Code_____Date_____

Vice Provost for Academic Affairs & International Programs_____Date_____

Provost _____Date_____

Board of Trustee Notification_____Date_____

Revised 02/09/2009 /khs

DEGREE: BACHELOR OF SCIENCE
MAJOR: MATHEMATICAL SCIENCES

CURRICULUM		CREDITS
UNIVERSITY REQUIREMENTS		
ENGL 110 (minimum grade C-)	Critical Reading and Writing	3
First Year Experience (FYE)		0-4
University Breadth Requirement (minimum grade C-)		12
Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements.		
Discovery Learning Experience (DLE)		3
Multi-cultural Courses		3
COLLEGE REQUIREMENTS		
Writing: (minimum grade C-)		3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours, and chosen from one of the following:		
ENGL 312	Written Communications in Business	3
or		
ENGL 410	Technical Writing	
or		
MATH 308		
or		
MATH 512		
Foreign Language:		0-12
Completion of the intermediate-level course (107 or 112) in a given language. Number of credits needed and initial placement will depend on number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language may attempt to fulfill the requirement in that language by taking an exemption examination.		
College of Arts and Sciences Breadth Requirements: (minimum grade C-)		
The College Breadth Requirements are in addition to the University Breadth Requirement. Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy these College of Arts and Sciences Breadth Requirements		
A total of eighteen credits from Groups A, B and C is required with a minimum of six credits in each group. The six credits from each group could be from the same area.		
Group A: Creative Arts and Humanities		6
Group B: History and Cultural Change		6
Group C: Social and Behavioral Sciences		6

DEGREE: BACHELOR OF SCIENCE
MAJOR: MATHEMATICAL SCIENCES Proposed revision

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MAJOR REQUIREMENTS
A grade of C- or better is required for major courses and related work. Students lacking adequate preparation for MATH 242 should begin with MATH 241.

Part A

MATH 210	Discrete Mathematics I	3
MATH 242	Analytic Geometry and Calculus B	4
MATH 243	Analytic Geometry and Calculus C	4
MATH 245	An Introduction to Proof	3
MATH 268	Perspectives on Mathematics	
or	or	1
UNIV 101	First Year Seminar	
MATH 302	Ordinary Differential Equations	3
MATH 349	Elementary Linear Algebra	3
MATH 350	Probability Theory and Simulation Methods	3
MATH 512	Contemporary Applications of Mathematics	3

Part B

Choose three out of the following six courses		9
MATH 315	Discrete Mathematics II	
MATH 401	Introduction to Real Analysis	
MATH 426	Numerical Analysis and Algorithmic Computation	
MATH 450	Mathematical Statistics	
MATH 451	Abstract Algebra I	
MATH 535	Introduction to Partial Differential Equations	

Part C

Fifteen additional credits in mathematics or in related disciplines at the 300 level or above 15
At least six of these additional credits have to be from Mathematical Sciences. MATH 308, MATH 379, MATH 380, and MATH 382 are not applicable. A maximum of nine credits in this Part C may be chosen from an approved list of courses in Computer Science, Economics, Physics or Statistics. The approved list of courses will be determined by the department Undergraduate Studies Committee and will be posted on the department website.

Two-semester sequence of laboratory science		8
(Courses designed for non-majors in a discipline are not appropriate.)		
CISC 181	Introduction to Computer Science II	3
and		
CISC 220	Data Structures	3

(Students with no previous experience in a programming language should start with CISC 106 or CISC 108)

Any substitution must be approved by the department Undergraduate Studies Committee.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF **124**

MAJOR REQUIREMENTS
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Checklist for Curriculum Proposals

_X_. 1. Are all **signatures on the hard copy of the proposal?**

_X_. 2. Is the **effective date** correct?

_X_. 3. Is the **rationale** for the proposal consistent with the changes proposed?

_X_. 4. Does the proposed **number of credits** match the stated number?

_X_. 5. Have affected units been identified and contacted? Are required **support letters** attached?

n/a. 6. Is a **resolution** necessary? If so, is it attached?

(Necessary for: establishing a major; disestablishing a major; a name change to any program with permanent status; a name change to a department or college; a transfer or creation of any department; request for permanent status).

_X_. 7. Are all **courses (required or referenced)** in the UDSIS Inventory or in the approval process?

_X_. 8. Are all **university requirements** correctly specified?

_X_. A. Breadth requirements.

_X_. B. Multicultural requirement.

_X_. C. Writing requirement.

_X_. D. DLE requirement.

_X_. 9. Are all **college requirements** correctly specified?

_X_. 9. Is a **side-by-side comparison** provided?