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”)

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

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
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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 3
or
UNIV 101 First Year Seminar 1
MATH 392 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 must 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 166 or CISC 168)

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
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?