To: Dean George Watson,
    College of Arts and Sciences
    University of Delaware

From: Yuk-J Leung
      Department of Mathematical Sciences
      527 Ewing Hall

Date: May 5, 2010

Subject: Minor degree program revisions

Dear Dean Watson:

The faculty in the Department of Mathematical Sciences has voted on a
proposal of allowing UNIV 101 as a viable substitute for MATH 268.
Incoming freshmen in mathematics should be allowed to pick either
UNIV 101 or MATH 268 to fulfill their FYE requirement. This move
would allow our majors greater freedom to choose other required
courses.

Also, we are adding CISC 106 as an extra choice for mathematics
majors to fulfill their computer science requirement. This move has
been endorsed by David Saunders, the Chair of Computer Science
Department.

All these are minor revisions on the degree programs that I am
submitting for your approval. There are five program proposals
attached: BAAS, BAXMS, BSAS, BSXMS and BS in MAEC.

Sincerely,

Y.J.LEUNG

Yuk-J Leung
Interim Undergraduate Studies Chair
Math Sci

yleung@math.udel.edu

From: Department of Mathematical Sciences
Date: May 4, 2010

Subject: **Minor revision of various undergraduate degree programs in Mathematical Sciences**

We are seeking your approval on two minor revisions of our undergraduate curricula.

A. We propose that our freshman mathematics majors be allowed to take UNIV 101 as an alternate to MATH 268 to fulfill their First Year Experience (FYE) requirement. We are still offering MATH 268 each Fall. However we cannot offer too many sections to accommodate their other classes.

We have discussed this issue with Cindi Shenkle, the Assistant Dean in the College of Arts and Science. At the moment, we have not received any negative feedback.

March 19, 2010 e-mail exchange

```
Hi, Y.J.,
Maybe Avron will be able to let us know if he foresees a problem with having enough
seats but if that were the case then maybe the one section could be a bit bigger.
Hopefully UNIV 101 would have enough seats, though, for additional students.
Thank you again.
Best,
Cindi
```

B. We propose that all mathematics majors be allowed to select the course CISC 106 as an alternate to CISC 108 or CISC 181. The main reason is to allow them have an extra choice to fulfill their computer science requirement.

Attached below is the Dr. Saunder's comment on this course on December 1, 2009.

```
Both CISC106 and CISC108 are appropriate initial CS courses for a Math major.
Either serves as prerequisite to CISC181 and then CISC220.

CISC108 is the initial course CS majors take and is recommended for Math majors
unless they particularly need the focus on programming in the context of Matlab
which is found in CISC106.  106 is taken by all of the Engr freshmen.

CISC 105 is defunct.  The CIS department is not involved in any Wilmington
offering.  I could not find reference to it in a winter, summer, or "professional
and continuing education" course booklet.  If you can send me a link to where it is
mentioned, I'd appreciate that.

Best, -Dave
```

B. David Saunders, Professor and Chair
Department of Computer and Information Sciences
University of Delaware
302-831-6238

Thank you for your attention to these matters.

Y. J. LEUNG

Yuk-J Leung
Interim Undergraduate Chair
Department of Mathematics Sciences

527 Ewing
e-mail: yleung@math.udel.edu

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: _Yuk-J Leung_____ phone number___X-1881_____

Department: Mathematical Sciences   email: yleung@math.udel.edu

Action: **Minor revision of major requirements**

_____

(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___10F_____

(use format 04F, 05W)

Current degree___BS in Mathematics _____

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

Proposed change leads to the degree of: BS in Mathematics

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

Proposed name:_____N/A_____

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

Revising or Deleting:

> **Undergraduate major / Concentration:_Mathematics BSAS**
>
> (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")

We added UNIV 101 as an alternate to MATH 268, a required course for FYE.

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

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 department does not have enough instructors to offer too many sections of MATH 268 to incoming math majors.

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.)

The alternate course UNIV 101 is printed in blue ink.

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

Department Chairperson _____ Date __5/5/10___

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 10/23/2007 /khs

Proposed Change on BS in Mathematics

Note on: Side by Side Comparison
everything is identical except UNIV 101 is added as an alternate course for FYE

DEGREE: BACHELOR OF SCIENCE
MAJOR: MATHEMATICAL SCIENCES

CURRICULUM	CREDITS

UNIVERSITY REQUIREMENTS

ENGL 110 Critical Reading and Writing (minimum grade C-)	3
First Year Experience (FYE)	0-4
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	History of Mathematics	
or		
MATH 512	Contemporary Applications of Mathematics	

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.

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:	6
Group B:	6
Group C:	6

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 -FYE	1
or		
UNIV 101	First year Experience I	
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 science8
(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

2009-2010 UD Catalog -->
2009-2010 Undergraduate Programs -->
College of Arts and Sciences -->
Mathematical Sciences -->
BACHELOR OF SCIENCE - MATHEMATICAL SCIENCES

Academic Year: 2009-2010 ▼

DEGREE: BACHELOR OF SCIENCE
MAJOR: MATHEMATICAL SCIENCES

CURRICULUM	CREDITS

UNIVERSITY REQUIREMENTS

ENGL 110	Critical Reading and Writing	3
(minimum grade C-)		

First Year Experience (FYE) 0-4

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.

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:	6
Group B:	6
Group C:	6

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	1
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 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

The University reserves the right to change its policies, rules, regulations, requirements for graduation, course offerings and any other contents of this catalog at any time.