

LSC Use Only Proposal No:	UWUCC Use Only Proposal No: 13-181a
LSC Action-Date:	UWUCC Action-Date: AP-4/8/14 Senate Action Date: APP-4/29/14

## Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

Contact Person(s) Frederick Adkins	Email Address fadkins@iup.edu
Proposing Department/Unit Mathematics Department	Phone 724-357-2608

Check all appropriate lines and complete all information. Use a separate cover sheet for each course proposal and/or program proposal.

## 1. Course Proposals (check all that apply)

New Course                       Course Prefix Change                       Course Deletion  
 Course Revision                       Course Number and/or Title Change                       Catalog Description Change

Current course prefix, number and full title: \_\_\_\_\_

Proposed course prefix, number and full title, if changing: \_\_\_\_\_

## 2. Liberal Studies Course Designations, as appropriate

This course is also proposed as a Liberal Studies Course (please mark the appropriate categories below)  
 Learning Skills     Knowledge Area     Global and Multicultural Awareness     Writing Intensive (include W cover sheet)  
 Liberal Studies Elective (please mark the designation(s) that applies – must meet at least one)  
 Global Citizenship                       Information Literacy                       Oral Communication  
 Quantitative Reasoning                       Scientific Literacy                       Technological Literacy

## 3. Other Designations, as appropriate




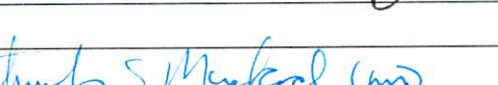
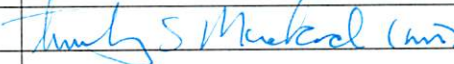

Honors College Course                       Other: (e.g. Women's Studies, Pan African)

## 4. Program Proposals

Catalog Description Change     Program Revision     Program Title Change     New Track  
 New Degree Program     New Minor Program     Liberal Studies Requirement Changes     Other

Current program name: Minor in Mathematics

Proposed program name, if changing: \_\_\_\_\_

5. Approvals	Signature	Date
Department Curriculum Committee Chair(s)		2-18-14
Department Chairperson(s)		3/3/14
College Curriculum Committee Chair		3/10/14
College Dean		3/11/14
Director of Liberal Studies (as needed)		
Director of Honors College (as needed)		
Provost (as needed)		3/14/14
Additional signature (with title) as appropriate		
UWUCC Co-Chairs		4/23/14

Received

APR 23 2014

Liberal Studies

Received

MAR 13 2014

Liberal Studies

**Part II. Description of Curriculum Change**

**1. Catalog description**

**Minor in Mathematics**

The minor consists of a minimum of 18 credits in mathematics. The minor prepares students for advanced study in areas such as economics, computer science, physics, and other natural sciences. Anyone required to take a year of calculus should consider a mathematics minor.

A cumulative GPA of at least 2.0 in MATH courses is required for a minor in mathematics. The department will not certify a minor for a transfer student unless at least two of the courses counting for the minor have been completed in the Mathematics Department.

**Minor—Mathematics 18**

**Required Courses:**

MATH 121 or 125 and MATH 122 or 126 6-8 credits

**Controlled Electives:** (1) 10-12 credits

Select the additional 10-12 credits from either MATH 219, MATH 250 or any required courses for math majors.

(1) The following courses are excluded: MATH 100, 101, 105, 110, 115, 214, 217, 417, 418, and courses for the Middle-Level Education 4-8/Mathematics Specialization.

**2. Summary of changes**

**1. Table comparing old and new programs**

**Current Program**

**Proposed Program**

<b>Current Program</b>	<b>Proposed Program</b>
<p><b>Minor—Mathematics</b> <span style="float: right;"><b>17</b></span></p> <p><b>Required Courses:</b> MATH 121 or 125 and MATH 122 or 126 <span style="float: right;">6-8 credits</span></p> <p><b>Controlled Electives:</b> (1) <span style="float: right;">9-11 credits</span> Other courses for Mathematics majors, MATH 219 and 250 may be included</p> <p>(1) The following courses are excluded: MATH 100, 101, 105, 110, 115, 214, 217, 417, 418, and courses for the Middle-Level Education 4-8/ Mathematics Specialization.</p>	<p><b>Minor—Mathematics</b> <span style="float: right;"><b>18</b></span></p> <p><b>Required Courses:</b> MATH 121 or 125 and MATH 122 or 126 <span style="float: right;">6-8 credits</span></p> <p><b>Controlled Electives:</b> (1) <span style="float: right;">10-12 credits</span> Select the additional 10-12 credits from either MATH 219, MATH 250 or any required courses for math majors.</p> <p>(1) The following courses are excluded: MATH 100, 101, 105, 110, 115, 214, 217, 417, 418, and courses for the Middle-Level Education 4-8/Mathematics Specialization.</p>

2. List of all associated course changes

No changes were done in related courses.

3. Rationale for Change

Credit hours were increased to a total of 18 from prior 17 as per new Pennsylvania regulations.

**Part III. Implementation. Provide answers to the following questions:**

1. How will the proposed revision affect students already in the existing program?

Students currently completing the mathematics minor under their catalog of entry will finish the minor with the former 17 credit requirement. The change will affect students starting with the Fall 2014 catalog.

2. Are faculty resources adequate? If you are not requesting or have not been authorized to hire additional faculty, demonstrate how this course will fit into the schedule(s) of current faculty.

No changes in faculty are proposed. Since most students currently complete six three-credit courses to exceed the 17 credit requirement, no change in course offering is required to move the requirement to 18 credits.

3. Are other resources adequate? (Space, equipment, supplies, travel funds)

This will not require any additional other resources.

4. Do you expect an increase or decrease in the number of students as a result of these revisions? If so, how will the department adjust?

Since most students currently complete six three-credit courses to exceed the 17 credit requirement, no change in the number of students selecting the minor will be expected in the shift to 18 credits.

**Part IV. Periodic Assessment**

The Mathematics Department will evaluate the mathematics minor as part of its assessment plan already in place for the mathematics major. This includes assessment of retained knowledge through a comprehensive exam that is given periodically. We also monitor student performance, perceptions and attitudes about mathematics with the usual course grades and surveys.

**Part V. Course Proposals**

None.

## Part VI. Letters of Support or Acknowledgement

Support was requested from Biology, Chemistry, Computer Science, Economics, Geoscience and Physics, since these departments have students who typically take the minor. We received responses from all of these departments.

Original message:

**From:** "Frederick A Adkins" <fadkins@iup.edu>  
**Subject:** Support for Curriculum Revision (Minor in Math)  
**Date:** Mon, 17 Feb 2014 17:30:57 -0500

Hello,

The Mathematics Department is modifying the requirements for the minor in mathematics by changing the requirement from 17 credits to 18 credits. This is to be consistent with new Pennsylvania requirements for minors and reflects the reality that most students take six 3-credit courses to complete the degree requirement.

Since students in your department on occasion minor in mathematics we would like a letter of support for the change.

It would be appreciated if you can email me back with an indication of support. Please let me know if you have any questions or concerns.

Sincerely,

Rick Adkins  
Math/Applied Math Curriculum Committee Chair

Responses:

### BIOLOGY

Date: Tue, 18 Feb 2014 08:56:24 -0500  
To: "Frederick A Adkins" <fadkins@iup.edu>  
Cc: "Carl Luciano" <luciano@iup.edu>

Rick-you have our support for this change-CL

Carl Luciano  
Professor and Chair  
Department of Biology

### CHEMISTRY

Date: Tue, 18 Feb 2014 10:52:11 -0500  
To: Frederick A Adkins <fadkins@iup.edu>

The Chemistry Department supports this change to the Minor in mathematics.

George

## COMPUTER SCIENCE

Date: Tue, 18 Feb 2014 07:48:57 -0500  
To: "Frederick A Adkins" <fadkins@iup.edu>

The Computer Science department is in full support of your decision in making the minor credits 18.

-Bill Oblitey

## ECONOMICS

Date: Wed, 19 Feb 2014 08:36:11 -0500  
To: Frederick A Adkins <fadkins@iup.edu>

The Department of Economics supports the modification to the minor in Mathematics.

Nicholas Karatjas

Dr. Nicholas Karatjas, Chair  
Department of Economics

## GEOSCIENCE

Date: Tue, 18 Feb 2014 09:49:06 -0500  
To: Frederick A Adkins <fadkins@iup.edu>

Hi Fred,

Geosciences supports the proposed changes to the Math minor program. It makes perfect sense to increase from 17 to 18 credits and has little if any impact on students. -Steve

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Dr. Steven A. Hovan  
Chairperson, IUP Geoscience Department  
hovan@iup.edu

## PHYSICS

Date: Mon, 17 Feb 2014 17:49:21 -0500  
To: "Frederick A Adkins" <fadkins@iup.edu>,

Hello Rick,  
I support your request.

Devki