July 24, 2017

To:    Dean Van Galen, Chancellor
       116 North Hall
       University of Wisconsin – River Falls

From:  Mialisa Moline, Chair [Signature]
       Faculty Senate
       University of Wisconsin – River Falls

Re:    UWRF Faculty Senate Motion 2017-18/6

The following motion was approved with amendments in red, with 18 in favor, 0 opposed, and 0 abstention by the Faculty Senate on June 7, 2017:

A motion from the Academic Programs and Policy Committee (Ian Williams, 2016-17, Chair) to approve the attached program change proposal for the Mathematics program.

☑ Approved

☐ Disapproved

__________________________________________  7/3/17
Dean Van Galen, Chancellor                      Date
### Undergraduate Program Change

<table>
<thead>
<tr>
<th>Preparer(s)</th>
<th>College</th>
<th>Department</th>
<th>Date</th>
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<tbody>
<tr>
<td>Kathy Tomlinson</td>
<td>CAS</td>
<td>Mathematics</td>
<td>Feb 8, 2017</td>
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<thead>
<tr>
<th>Program Title</th>
<th>Implementation Term</th>
<th>Nature of Proposal</th>
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<tbody>
<tr>
<td>Mathematics</td>
<td>Fall 2018</td>
<td>An existing program</td>
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**Have all courses been approved?** No

**Requested changes (select all that apply):**
- [ ] Name change
- [x] Credits change
- [x] Curriculum change
- [x] Change in major
- [x] Change in minor
- [ ] Change in option/emphasis
- [ ] Other

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**Reviewed and approved by**

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<thead>
<tr>
<th>Department</th>
<th>College Curriculum Committee</th>
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<th>University Curriculum Committee</th>
<th>Acad. Policy &amp; Program Committee</th>
<th>Faculty Senate</th>
<th>Provost/Vice Chancellor</th>
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**Approval date**

- 3/20/2017
- 4/19/2017
- 2017-04-19
- 4/21/2017
- May 1, 2017

**Signature of Chair/Dean**

- [Signature]
- [Signature]
- [Signature]

**Revised:** Fall 2015

**Notice of action**
### Signatures of Additional Departments and Colleges Affected

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Calculus III Program change for Mathematics majors and minors

Old required course, MATH 266: Calculus III, 3 credits

New required course, MATH 268: Calculus III, 4 credits

a) Rationale for the requested change.
By increasing the number of credits in Calculus III students and instructors will get the necessary time to cover all topics in depth, including vector calculus. This will bring our calculus sequence more in line with what other campuses cover in their calculus sequence.

b) Clarify which courses have not been approved.
MATH 268 is currently in the course approval process.

c) Include a listing of course array for the current as well as the proposed program
The programs effected by the credit change are
Mathematics Major—Liberal Arts,
Mathematics Major—Education,
Mathematics Minor—Liberal Arts,
Mathematics Minor—Education Early Adolescence/Adolescence,
Mathematics Minor—Business or Social Science.
The changes are shown with the callout boxes to the highlighted (yellow) lines.
Mathematics Major - Education

Professional Education Courses 39 cr. hrs.
TED 120 Introduction to Education and Instructional Technology 3 cr.
TED 212 Educational Psychology 5 cr.
TED 252 Foundations of Multicultural Education (d) 3 cr.
TED 420 School and Society 3 cr.
TED 438 Techniques in Middle/Sec. Education: Mathematics 3 cr.
TED 464 Content Area Literacy in Middle & Secondary School Mathematics 3 cr.
TED 467 Management Strategies for the Secondary Mathematics Classroom 3 cr.
SPED 330 Exceptional Child 3 cr.
TED 474 Student Teaching-Secondary Only 12 cr.
or TED 473 and TED 474 Student Teaching-Middle/Secondary (6 cr. each)
TED 414 Development of the Transescent 4 cr.

Major Requirements 36 Total Credits

Required Courses: 30 cr. hrs.
MATH 166 Calculus I 4 cr.
MATH 167 Calculus II 4 cr.
MATH 236 Discrete Mathematics 4 cr.
MATH 256 Linear Algebra 3 cr.
MATH 266 Calculus III 4 cr.
MATH 351 Abstract Algebra 3 cr.
MATH 356 Probability 3 cr.
MATH 411 Geometry 3 cr.
MATH 316 Mathematical Modeling 3 cr.
or MATH 326 Applied Statistics 3 cr.
or MATH 357 Mathematical Statistics 3 cr.

Directed Electives: 6 cr. hrs.
Select at least two mathematics courses numbered higher than 300, excluding MATH 305, 371, 379 and 436

Required Supporting Courses: 5 cr. hrs.
MATH 435 History of Mathematics (writing intensive) 2 cr.
MATH 305 Integrating Technology in Teaching Secondary Mathematics 3 cr.
Mathematics Minor

Mathematics Minor - Liberal Arts

Mathematics Minor - Liberal Arts: 24 Total Credits

Required Courses: 18 cr. hrs.
MATH 166 Calculus I 4 cr.
MATH 167 Calculus II 4 cr.
MATH 236 Discrete Mathematics 4 cr.
MATH 256 Linear Algebra 3 cr.
MATH 266 Calculus III 3 cr.

Directed Electives: 6 cr. hrs.
Select at least two mathematics courses numbered 300 or higher excluding MATH 305 and 436

Required Supporting Courses: 3 cr. hrs.
Select one from
MATH 205 Mathematical Programming 3 cr.
or PHYS 211 Scientific Programming 3 cr.
or CSIS 162 Programming II 3 cr.

25 Total Credits
Mathematics Minor - Education
Early Adolescence - Adolescence

Mathematics Minor - Education: 24 Total Credits

Required Courses: 21 cr. hrs.
- **MATH 166** Calculus I 4 cr.
- **MATH 167** Calculus II 4 cr.
- **MATH 236** Discrete Mathematics 4 cr.
- **MATH 256** Linear Algebra 3 cr.
- **MATH 326** Applied Statistics 3 cr.
- **MATH 411** Geometry 3 cr.

Directed Electives: 3 cr. hrs.

Select one mathematics course numbered 265 or higher excluding MATH 279, 305, 371, 379 and 436

**Required Supporting Courses: 5 cr. hrs.**
- **MATH 305** Integrating Technology in Teaching Mathematics 3 cr.
- **MATH 436** History of Mathematics 2 cr.

Professional Courses (in addition to the major) 6 cr. hrs.
- **TED 438** Techniques in Middle/Sec. Education: Mathematics 3 cr.
- **TED 414** Development of the Transescent 3 cr.
Mathematics Minor - Business or Social Science

Mathematics Minor - Business or Social Science: 24 Total Credits

Required Courses: 18 cr. hrs.

MATH 166 Calculus I 4 cr.
MATH 167 Calculus II 4 cr.
MATH 236 Discrete Mathematics 4 cr.
MATH 256 Linear Algebra 3 cr.
MATH 226 Fundamental of Statistics 3 cr.
or MATH 326 Applied Statistics

Directed Electives: 6 cr. hrs.

Select two mathematics courses numbered 300 or higher, excluding

MATH 305, MATH 326 and MATH 436

MATH 279,
Hi Kathy:
The physics department discussed this at our March 24, 2017 meeting and supports the change of Math 266 to 4 credits.

Jim

Jim Madsen
Professor, Chair
Physics Department
UWRF
410 South Third Street
River Falls, WI 54022
715-425-4390 Office
715-425-0652 FAX

From: Kathy Tomlinson
Sent: Tuesday, March 21, 2017 8:46 AM
To: James Madsen <james.madsen@uwrf.edu>
Subject: Support for MATH 268: Calculus III

Hi Jim,

I have attached the course proposal for MATH 268: Calculus III. This 4-credit course will replace MATH 266: Calculus III (3 credits). Note that the primary change is the addition of vector calculus topics, including Green’s Theorem and Stokes’ Theorem. This is a required course for all mathematics majors and for our liberal arts mathematics minor.

Would you please reply with a statement of the Physics Department’s support?

Kathy

Kathy Tomlinson, Ph. D.
Mathematics Dept. Chair
715-425-3326
North Hall 207B
410 S. Third St.
River Falls, WI 54022

https://outlook.office.com/owa?show=MessageItem&Id=AAAAADQxwZPhYJyLyLTJNtInDBkZ5SinWY1LTA2ZDA4ZTNYjA4YgBAAAAA...
Hi Kathy,

The computer science department is in support of this proposal.

Thanks,

"hossein"

Hossein Najafi, Ph.D.
Computer Science and Information Systems Department, Professor and Chair
University of Wisconsin, River Falls
410 S. 3rd St.
River Falls, WI 54022
715-425-4656

From: Kathy Tomlinson <kathy.tomlinson@uwrf.edu>
Date: Tuesday, March 21, 2017 at 8:47 AM
To: Hossein Najafi <hossein.najafi@uwrf.edu>
Subject: Support for MATH 268: Calculus III

Hi Hossein,

I have attached the course proposal for MATH 268: Calculus III. This 4-credit course will replace MATH 266: Calculus III (3 credits). Note that the primary change is the addition of vector calculus topics, including Green's Theorem and Stokes' Theorem. This is a required course for all mathematics majors and for our liberal arts mathematics minor.

Would you please reply with a statement of the Computer Science Department's support?

Kathy

Kathy Tomlinson, Ph. D.
Mathematics Dept. Chair
715-425-3326
North Hall 2079
410 S. Third St.
River Falls, WI 54022