UNIVERSITY *of* WASHINGTON

*Michael K. Young*
*President*

May 21, 2014

Dean Robert C. Stacey
College of Arts and Sciences
Box 353765

Dear Bob:

Based on the recommendation of its Subcommittee on Admissions and Programs, the Faculty Council on Academic Standards has recommended approval of the revised program requirements for the Bachelor of Science degree in Mathematics. A copy of the change is attached.

I am writing to inform you that the Department of Mathematics is authorized to specify these requirements beginning autumn quarter 2014.

The new requirements should be incorporated in printed statements and in individual department websites as soon as possible. The *General Catalog* website will be updated accordingly by the Registrar's Office.

Sincerely yours,

Michael K. Young
President

Enclosure

cc: Ms. Brooke Miller (with enclosure)
Mr. Robert Corbett (with enclosure)
Ms. Virjean Edwards (with enclosure

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MAY 06 2014

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Control # MATH-20140317

UNIVERSITY OF WASHINGTON

# CREATING AND CHANGING UNDERGRADUATE ACADEMIC PROGRAMS

After college/school/campus review, send a signed original and 1 copy to the Curriculum Office/FCAS, Box 355850.

For information about when and how to use this form: http://depts.washington.edu/uwcr/1503instructions.pdf

| **College/Campus** A&S | **Department/Unit** MATHEMATICS | **Date** 3-17-14 |
|---|---|---|

## New Programs

- ☐ Leading to a Bachelor of ___ in ___ degree.
- ☐ Leading to a Bachelor of ___degree with a major in ___.
- ☐ Leading to a ___ Option within the existing major in ___.
- ☐ Leading to a minor in ___

## Changes to Existing Programs

- ☐ New Admission Requirements for the Major in ___ within the Bachelor of ___.
- ☐ Revised Admission Requirements for the Major in _ within the Bachelor of _.
- ☒ Revised Program Requirements for the Major in MATH___ within the Bachelor of SCIENCE.
- ☐ Revised Requirements for the Option in ___within the major in ___.
- ☐ Revised Requirements for the Minor in ___.

## Other Changes

- ☐ Change name of program from ___ to ___.
- ☐ Change delivery method or location of program.
- ☐ New or Revised Continuation Policy for ___.
- ☐ New Honors Requirements for ___.
- ☐ Eliminate program in ___.

Proposed Effective Date: **Quarter:** ☒ Autumn ☐ Winter ☐ Spring ☐ Summer **Year:** 20 14

| Contact Person: | Phone: | Email: | Box: |
|---|---|---|---|

## EXPLANATION OF AND RATIONALE FOR PROPOSED CHANGE

For new program, please include any relevant supporting documentation such as student learning outcomes, projected enrollments, letters of support and departmental handouts. (*Use additional pages if necessary*).

We are no longer requiring Math 326 as a major requirement and so we have modified the degree requirements for both Bachelor of Science programs accordingly.

## OTHER DEPARTMENTS AFFECTED

List all departments/units/ or co-accredited programs affected by your new program or changes to your existing program and acquire the signature of the chair/director of each department/unit listed. Attach additional page(s) if necessary. *See online instructions.

| Department/Unit: | Chair/Program Director: | Date: |
|---|---|---|
| Department/Unit: | Chair/Program Director | Date: |

**CATALOG COPY**

Catalog Copy as currently written. Include only sections/paragraphs that would be changed if your request is approved. Please cross out or otherwise highlight any deletions.

Intermediate Mathematics Core (~~12~~ credits): MATH 308 (3); MATH 326, MATH 327, MATH 328 (3, 3, 3). (MATH 334, MATH 335, MATH 336 may be substituted for MATH 309, MATH 300, MATH 324, MATH 326, MATH 327, and MATH 328.)

Electives (~~12~~ credits): ~~Four~~ additional mathematics courses, including a two-quarter sequence at the 300- or 400-level (teacher-preparation courses not allowed). With approval, two of the four courses may be chosen from appropriate courses offered by the departments of Applied Mathematics, Statistics, and Computer Science, or from certain other departments. Courses from the additional mathematics core sequences not used to fulfill core requirements can be used to fulfill the elective requirement.

**PROPOSED CATALOG COPY**

Reflecting requested changes (Include exact wording as you wish it to be shown in the printed catalog. Please underline or otherwise highlight any additions. If needed, attach a separate, expanded version of the changes that might appear in department publications). **Please note:** all copy will be edited to reflect uniform style in the General Catalog.

Intermediate Mathematics Core (~~12~~ credits): MATH 308 (~~3~~); MATH 327, MATH 328 ~~(3, 3, 3)~~. (MATH 334, MATH 335, MATH 336 may be substituted for MATH 309, MATH 300, MATH 324, MATH 327, and MATH 328.)

Electives (15 credits): Five additional mathematics courses, including a two-quarter sequence at the 300- or 400-level (teacher-preparation courses not allowed). With approval, two of the four courses may be chosen from appropriate courses offered by the departments of Applied Mathematics, Statistics, and Computer Science, or from certain other departments. Courses from the additional mathematics core sequences not used to fulfill core requirements can be used to fulfill the elective requirement.

see attached

**APPROVALS**

| | |
|---|---|
| Chair/Program Director: Ronald L. Irving | Date: 4-7-14 |
| College/School/Campus Curriculum Committee: | Date: 4/23/14 |
| Dean/Vice Chancellor: | Date: 5/11/14 |
| Faculty Council on Academic Standards/ General Faculty Organization/Faculty Assembly Chair: Pat Ann Kramer | Date: 5/14/14 |

**POST TRI-CAMPUS APPROVAL (when needed)**

| | |
|---|---|
| Faculty Council on Academic Standards/ General Faculty Organization/Faculty Assembly Chair: | Date: |

***Current:***

## *Major Requirements*

*Standard Option (66 credits):*

1. *Elementary Mathematics Core (21 credits):* MATH 124, MATH 125, MATH 126 ~~(5, 5, 5)~~; MATH 300 ~~(3)~~; MATH 324 ~~(3)~~. (MATH 134, MATH 135, and MATH 136 may be substituted for MATH 124, MATH 125, MATH 126, MATH 307, and MATH 308.)
2. *Intermediate Mathematics Core (~~12~~ credits):* MATH 308 ~~(3)~~; ~~MATH 326~~, MATH 327, MATH 328 ~~(3)~~. (MATH 334, MATH 335, MATH 336 may be substituted for MATH 309, MATH 300, MATH 324, ~~MATH 326,~~ MATH 327, and MATH 328.)
3. *Advanced Mathematics Core (21 credits):* At least seven courses from the following, from at least three different areas, and including at least two two-quarter sequences:
    - *Algebra:* MATH 402, MATH 403, MATH 404 ~~(3)~~.
    - *Analysis:* MATH 424, MATH 425, MATH 426 ~~(3)~~.
    - *Geometry:* MATH 441, MATH 442, MATH 443 ~~(3).~~
    - *Other Analysis:* MATH 307, MATH 309 ~~(3)~~; MATH 427, MATH 428 ~~(3).~~
    - *Probability:* MATH 394, MATH 395, MATH 396 ~~(3)~~; MATH 491, MATH 492 ~~(3).~~
    - *Other Mathematics:* MATH 381 ~~(3)~~; MATH 407, MATH 408, MATH 409 ~~(3)~~; MATH 461, MATH 462 ~~(3)~~; MATH 464, MATH 465, MATH 466 ~~(3)~~.
4. *Electives (~~12~~ credits):* ~~Four~~ additional mathematics courses, including a two-quarter sequence at the 300- or 400-level (teacher-preparation courses not allowed). With approval, two of the four courses may be chosen from appropriate courses offered by the departments of Applied Mathematics, Statistics, and Computer Science, or from certain other departments. Courses from the additional mathematics core sequences not used to fulfill core requirements can be used to fulfill the elective requirement.
5. A minimum grade of 2.0 in all courses presented to satisfy the mathematics major requirements. A minimum cumulative GPA of 2.00 or higher in all mathematics courses at the University, including course repeats.
6. At least 18 credits of graded mathematics courses numbered 300 or higher taken in residence at the University.

*Comprehensive Option (69 credits):*

Emphasizes the fundamental subjects of algebra, analysis, and geometry and is designed to provide a deep understanding of these basic areas of modern mathematics. Lays a good foundation for more advanced study. For this option, the grade, elementary core, and elective requirements remain unchanged, with the same substitutions permitted from the accelerated/Honors sequences. (Items 1, 2, 3, and 6 shown for the standard option, above.)

1. *Elementary Mathematics Core (21 credits):* MATH 124, MATH 125, MATH 126 (5, 5, 5); MATH 300 ~~(3)~~; MATH 324 ~~(3)~~. (MATH 134, MATH 135, and MATH 136 may be substituted for MATH 124, MATH 125, MATH 126, MATH 307, and MATH 308.)
2. *Intermediate Mathematics Core (~~12~~ credits):* MATH 308 ~~(3)~~; ~~MATH 326~~, MATH 327, MATH 328 ~~(3)~~. (MATH 334, MATH 335, MATH 336 may be substituted for MATH 309, MATH 300, MATH 324, ~~MATH 326,~~ MATH 327, and MATH 328.)
3. *Advanced Mathematics Core (24 credits):* At least eight courses from the following, including at least two in each of the first three areas. If only six courses are chosen from the first three areas, then the two courses chosen from the fourth area must form a two-quarter sequence:
    - *Algebra:* MATH 402, MATH 403, MATH 404 ~~(3)~~.
    - *Analysis:* MATH 424, MATH 425, MATH 426 ~~(3)~~.
    - *Geometry:* MATH 441, MATH 442, MATH 443 ~~(3)~~.
    - *Other Analysis:* MATH 307, MATH 309 ~~(3)~~; MATH 427, MATH 428 ~~(3)~~.
4. *Electives (~~12~~ credits):* ~~Four~~ additional mathematics courses, including a two-quarter sequence at the 300- or 400-level (teacher-preparation courses not allowed). With approval, two of the four courses may be chosen from appropriate courses offered by the departments of Applied Mathematics, Statistics, and Computer Science, or from certain other departments. Courses from the additional mathematics core sequences not used to fulfill core requirements can be used to fulfill the elective requirement.
5. A minimum grade of 2.0 in all courses presented to satisfy the mathematics major requirements. A minimum cumulative GPA of 2.50 or higher in all mathematics courses at the University, including course repeats.

At least 18 credits of graded mathematics courses numbered 300 or higher taken in residence at the University.

Proposed:

### *Major Requirements*

*Standard Option (66 credits):*

1. *Elementary Mathematics Core (21 credits):* MATH 124, MATH 125, MATH 126; MATH 300; MATH 324. (MATH 134, MATH 135, and MATH 136 may be substituted for MATH 124, MATH 125, MATH 126, MATH 307, and MATH 308.)
2. *Intermediate Mathematics Core (**9** credits):* MATH 308; MATH 327, MATH 328. (MATH 334, MATH 335, MATH 336 may be substituted for 300, MATH 309, MATH 324, MATH 327, and MATH 328.)
3. *Advanced Mathematics Core (21 credits):* At least seven courses from the following, from at least three different areas, and including at least two two-quarter sequences:
    - *Algebra:* MATH 402, MATH 403, MATH 404
    - *Analysis:* MATH 424, MATH 425, MATH 426
    - *Geometry:* MATH 441, MATH 442, MATH 443
    - *Other Analysis:* MATH 307, MATH 309; MATH 427, MATH 428
    - *Probability:* MATH 394, MATH 395, MATH 396 ~~(3)~~; MATH 491, MATH 492
    - *Other Mathematics:* MATH 381 ~~(3)~~; MATH 407, MATH 408, MATH 409; MATH 461, MATH 462; MATH 464, MATH 465, MATH 466
4. *Electives (**15** credits):* **Five** additional mathematics courses, including a two-quarter sequence at the 300- or 400-level (teacher-preparation courses not allowed). With approval, two of the four courses may be chosen from appropriate courses offered by the departments of Applied Mathematics, Statistics, and Computer Science, or from certain other departments. Courses from the additional mathematics core sequences not used to fulfill core requirements can be used to fulfill the elective requirement.
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    - *Algebra:* MATH 402, MATH 403, MATH 404
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    - *Geometry:* MATH 441, MATH 442, MATH 443
    - *Other Analysis:* MATH 307, MATH 309; MATH 427, MATH 428
4. *Electives (**15** credits):* **Five** additional mathematics courses, including a two-quarter sequence at the 300- or 400-level (teacher-preparation courses not allowed). With approval, two of the four courses may be chosen from appropriate courses offered by the departments of Applied Mathematics, Statistics, and Computer Science, or from certain other departments. Courses from the additional mathematics core sequences not used to fulfill core requirements can be used to fulfill the elective requirement.
5. A minimum grade of 2.0 in all courses presented to satisfy the mathematics major requirements. A minimum cumulative GPA of 2.50 or higher in all mathematics courses at the University, including course repeats.

At least 18 credits of graded mathematics courses numbered 300 or higher taken in residence at the University.