May 17, 2012

Interim 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 admission and program requirements for the options within the Bachelor of Arts degree and the Bachelor of Science degree in Mathematics as well as a new continuation policy. A copy of the changes is attached.

I am writing to inform you that the Department of Mathematics is authorized to specify these requirements beginning autumn quarter 2012.

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)
        Dr. Deborah H. Wiegand (with enclosure)
        Ms. Virjean Edwards (with enclosure MATH-20120214)

UNIVERSITY OF WASHINGTON
CREATING AND CHANGING UNDERGRADUATE
ACADEMIC PROGRAMS

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After college/school/campus review, send a signed original and 3 copies 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** 2-14-12 |

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 Mathematics within the Bachelor of Science and Arts
- ☒ Revised Program Requirements for the Major in Mathematics within the Bachelor of Science e Arts
- ☐ Revised Requirements for the Option in _____ within the major in _____.
- ☐ Revised Requirements for the Minor in _____.

Other Changes
- ☐ Change name of program from _____ to _____.
- ■ New or Revised Continuation Policy for Mathematics _____
- ☐ Eliminate program in _____.

| Proposed Effective Date: **Quarter:** ■ Autumn ☐ Winter ☐ Spring ☐ Summer **Year:** 20 12 |

| Contact Person: Brooke Miller | Phone: 3-0388 | Email: miller@math.washington.edu | Box: 354350 |

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*).

Please see attached document.

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:

UoW 1503 (10/08)

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.

Please see attached document.

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.
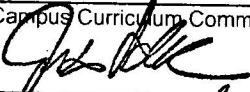
Please see attached document.

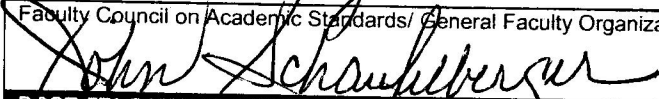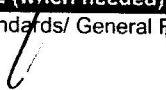|	Date:
Chair/Program Director:	2/15/12
College/School/Campus Curriculum Committee:	4/16/2012
Dean/Vice Chancellor:	4/16/2012
Faculty Council on Academic Standards/ General Faculty Organization/Faculty Assembly Chair:	MAY 11, 2012

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

UoW 1503 (10/08) REVERSE

Rationale for New Admission and Continuation Criteria

The Department of Mathematics offers degrees in five different programs; two Bachelor of Science majors and three Bachelor of Arts majors. Over the last decade, the number of mathematics majors has steadily increased from 232 in 2004 to a current number of 532 (February 2012). In 2009, in an effort to simplify access to the major, we reduced the number of courses required to declare a major in mathematics: we currently only require a year of freshman calculus. After extensive analysis of our current population of majors, we arrived at two conclusions. First, students who barely meet the current grade requirements (a 2.0 in each quarter of first year calculus) often struggle through the program or drop out, which can be a frustrating experience for everyone involved. Secondly, the presence of a sensible continuation policy would allow us to provide timely feedback to those having difficulty at various points in the program and improve their experience. Additionally, our proposed policies have the added benefit of clarifying departmental expectations of both potential and current math majors. Our proposed admission/continuation policy depends on which of our five degree options is being pursued and is discussed in detail below. To support these changes, we have studied the correlation between grades in various courses and subsequent upper division course performance. Early on, we learned that it is impossible to find one single course or group of courses that will guarantee future success in the program. This is particularly true at the earliest stages of the major. However, a study of first year calculus GPA vs. cumulative GPA in upper division math courses does lend support to the proposal. In the discussion below, a "first year calculus course" refers to any calculus course equivalent to Math 124/5/6 at the University of Washington.

BS Comprehensive

This is our most demanding undergraduate degree track. For admission, we would require a 2.0 in Math 124, 125 and 126 or Math 134, 135 and 136 (first year calculus) and a 2.5 average GPA in these courses. In turn, our proposed continuation policy would mesh seamlessly, using the same grade criteria: students making normal departmental progress must maintain a minimum cumulative major GPA of 2.5 and a minimum 2.0 for individual courses required for the major.

Failure to maintain these GPA and grade standards would result in a student first being issued a warning letter suggesting that they meet with an advisor in the Student Services Office. Students who are on warning status who fail to meet satisfactory progress after one quarter will be placed on probation, and a hold will be placed on their registration. To remove the hold, students must meet with an advisor in the Student Services Office. Students who fail to meet satisfactory progress or meet with an advisor after being placed on probation for one quarter may be dismissed from the major. To avoid dismissal, students need to meet with an advisor and work to bring their cumulative major GPA up to the 2.5 minimum after one quarter. However, because certain courses are not offered every quarter, bringing up a minimum grade to the 2.0 level would involve a case-by-case plan agreed upon with an advisor.

Students who experience extraordinary circumstances may petition for one or more additional probationary quarters. Examination of Graph 1 indicates the calculus GPA vs. cumulative math course GPA (courses beyond

calculus) for our BS Comprehensive majors. As you can see, our criteria would not have affected the admission of any of our current BS comprehensive majors and only 1/40=2.5% would trigger the continuation policy proposed.

BA Teacher Preparation

For admission, we would require a 2.0 in Math 124, 125 and 126 or Math 134, 135 and 136 (first year calculus) and a 2.5 average GPA in these courses. In turn, our proposed continuation policy would mesh seamlessly, using the same grade criteria: students making normal departmental progress must maintain a minimum cumulative major GPA of 2.5 and a minimum 2.0 for individual courses required for the major.

Failure to maintain these GPA and grade standards would result in a student first being issued a warning letter suggesting that they meet with an advisor in the Student Services Office. Students who are on warning status who fail to meet satisfactory progress after one quarter will be placed on probation, and a hold will be placed on their registration. To remove the hold, students must meet with an advisor in the Student Services Office. Students who fail to meet satisfactory progress or meet with an advisor after being placed on probation for one quarter may be dismissed from the major. To avoid dismissal, students need to meet with an advisor and work to bring their cumulative major GPA up to the 2.5 minimum after one quarter. However, because certain courses are not offered every quarter, bringing up a minimum grade to the 2.0 level would involve a case-by-case plan agreed upon with an advisor.

Students who experience extraordinary circumstances may petition for one or more additional probationary quarters. Examination of Graph 2 indicates the calculus GPA vs. cumulative math course GPA (courses beyond calculus) for our BA Teacher Preparation majors. As you can see, our criteria would not have affected the admission of any of our current BA Teacher Preparation majors and all such students are meeting the continuation policy standards.

BS Standard

For admission, we would require a 2.0 in Math 124, 125 and 126 or Math 134, 135 and 136 (first year calculus) and a 2.0 average GPA in these courses. In turn, our proposed continuation policy would mesh seamlessly, using the same grade criteria: students making normal departmental progress must maintain a minimum cumulative major GPA of 2.0 and a minimum 2.0 for individual courses required for the major.

Failure to maintain these GPA and grade standards would result in a student first being issued a warning letter suggesting that they meet with an advisor in the Student Services Office. Students who are on warning status who fail to meet satisfactory progress after one quarter will be placed on probation, and a hold will be placed on their registration. To remove the hold, students must meet with an advisor in the Student Services Office. Students who fail to meet satisfactory progress or meet with an advisor after being placed on probation for one quarter may be dismissed from the major. To avoid dismissal, students need to meet with an advisor and work to bring their cumulative major GPA up to the 2.0 minimum after one quarter. However, because certain courses are not offered every quarter, bringing up a minimum grade to the 2.0 level would involve a case-by-case plan agreed upon with an advisor.

Students who experience extraordinary circumstances may petition for one or more additional probationary quarters. Examination of Graph 3 indicates the calculus GPA vs. cumulative math course GPA (courses beyond calculus) for our BS Standard majors. As you can see, our criteria would have prevented admission of 15 students; i.e. 15/155=9.7% of the current majors in this track. A total of 3 admitted majors (3/140=2%) would have triggered academic probation.

BA Standard

In terms of the depth and breadth of requirements, this is our least demanding major. For admission, we would require a 2.0 in Math 124, 125 and 126 or Math 134, 135 and 136 (first year calculus) and a 2.2 average GPA in these courses. In turn, our proposed continuation policy would mesh seamlessly, using the same grade criteria: students making normal departmental progress must maintain a minimum cumulative major GPA of 2.2 and a minimum 2.0 for individual courses required for the major.

Failure to maintain these GPA and grade standards would result in a student first being issued a warning letter suggesting that they meet with an advisor in the Student Services Office. Students who are on warning status who fail to meet satisfactory progress after one quarter will be placed on probation, and a hold will be placed on their registration. To remove the hold, students must meet with an advisor in the Student Services Office. Students who fail to meet satisfactory progress or meet with an advisor after being placed on probation for one quarter may be dismissed from the major. To avoid dismissal, students need to meet with an advisor and work to bring their cumulative major GPA up to the 2.2 minimum after one quarter. However, because certain courses are not offered every quarter, bringing up a minimum grade to the 2.0 level would involve a case-by-case plan agreed upon with an advisor.

Students who experience extraordinary circumstances may petition for one or more additional probationary quarters. Examination of Graph 4 indicates the calculus GPA vs. cumulative math course GPA (courses beyond calculus) for our BA Standard majors. As you can see, our criteria would have prevented admission of 16 students (16/96=17%). A total of 4 admitted majors (4/80=5%) would have triggered academic probation.

BA Philosophy

For admission, we would require a 2.0 in Math 124, 125 and 126 or Math 134, 135 and 136 (first year calculus) and a 2.2 average GPA in these courses. In turn, our proposed continuation policy would mesh seamlessly, using the same grade criteria: students making normal departmental progress must maintain a minimum cumulative major GPA of 2.2 and a minimum 2.0 for individual courses required for the major.

Failure to maintain these GPA and grade standards would result in a student first being issued a warning letter suggesting that they meet with an advisor in the Student Services Office. Students who are on warning status who fail to meet satisfactory progress after one quarter will be placed on probation, and a hold will be placed on their registration. To remove the hold, students must meet with an advisor in the Student Services Office. Students who fail to meet satisfactory progress or meet with an advisor after being placed on probation for one quarter may be dismissed from the major. To avoid dismissal, students need to meet with an advisor and work to bring their cumulative major GPA up to the 2.0 minimum after one quarter. However, because certain courses are not

offered every quarter, bringing up a minimum grade to the 2.0 level would involve a case-by-case plan agreed upon with an advisor.
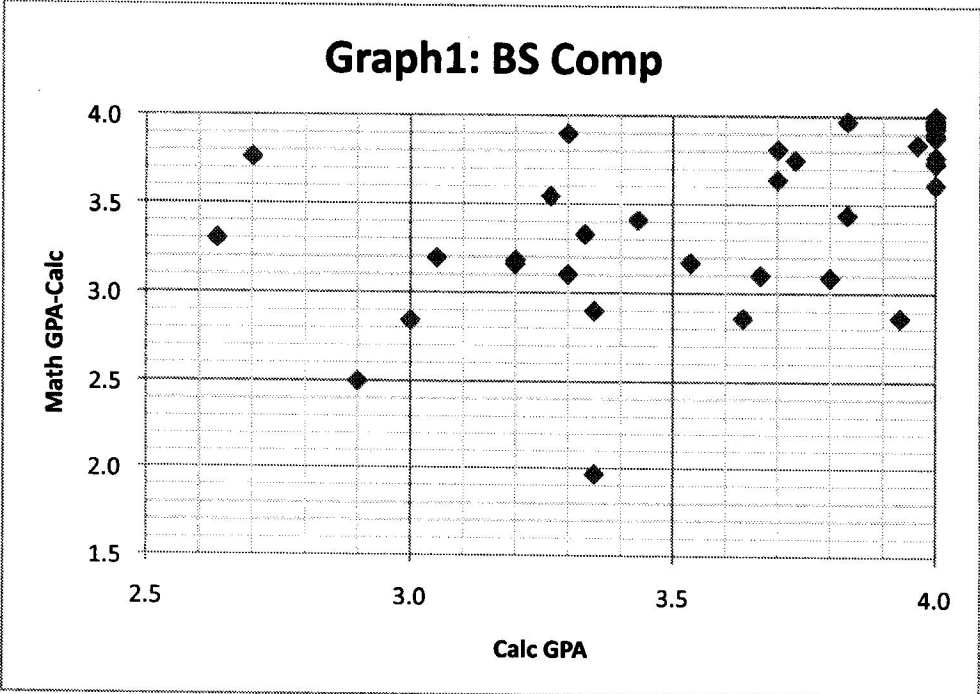
Students who experience extraordinary circumstances may petition for one or more additional probationary quarters. Examination of Graph 5 indicates the calculus GPA vs. cumulative math course GPA (courses beyond calculus) for our BA Philosophy majors. As you can see, our criteria would not have affected admission of any students in this track. A total of 2 admitted majors (2/10=20%) would have triggered academic probation.
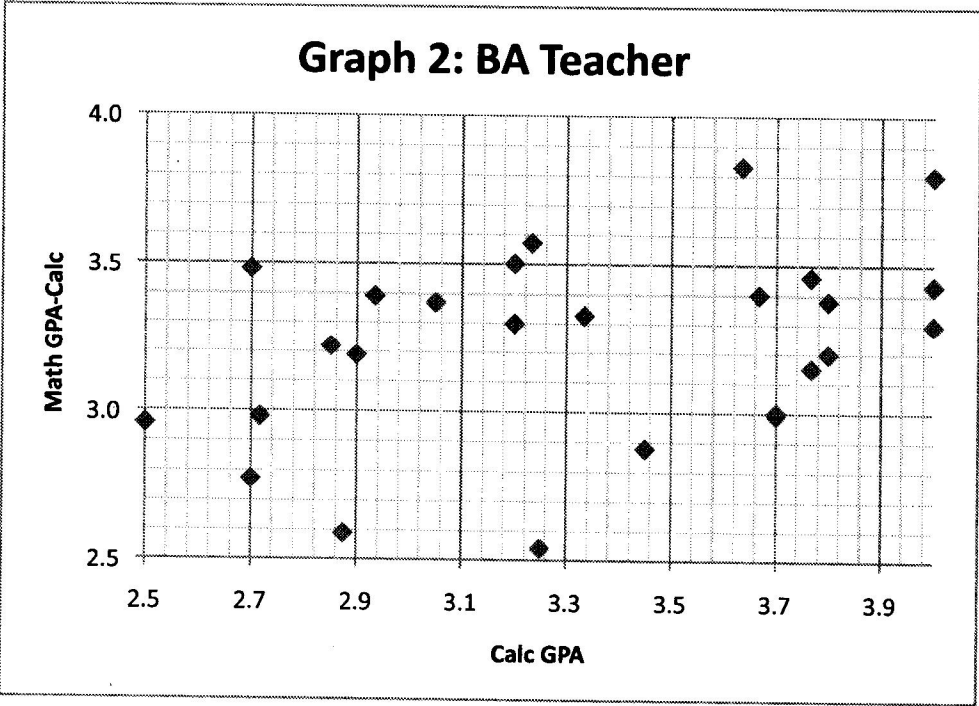
Summary

In summary, we propose an admission and continuation policy for the mathematics major which is tailored to each of our five degree options. It is clear that the proposed admission and continuation criteria would most severely impact the BA standard track, which is not a surprise since that option is populated by our weakest students. Our expectation is that the implementation of this admission/continuation policy will provide the feedback necessary to assist a struggling student as they progress through our program. In turn, these policies will clarify the expectations of the department for all current and future majors. As a final note, we would propose to grandfather in all currently declared majors and propose to implement the new admission and continuation policies in Autumn 2012.

Appendix: Graphs

In the attached graphs, for various populations of math majors, we have plotted cumulative calculus GPA versus cumulative GPA in 300 level and above courses. In the legend, a notation "300" is referring to all such courses, not the single course Math 300.

Graph1: BS Comp

N=40

Graph 2: BA Teacher

N=29

Graph 3: BS Standard

Math GPA-Calc vs Calc GPA

- ◆ Calc<2.2
- ■ Calc>2.2 300<2.2
- ▲ Calc>2.2 300>2.2
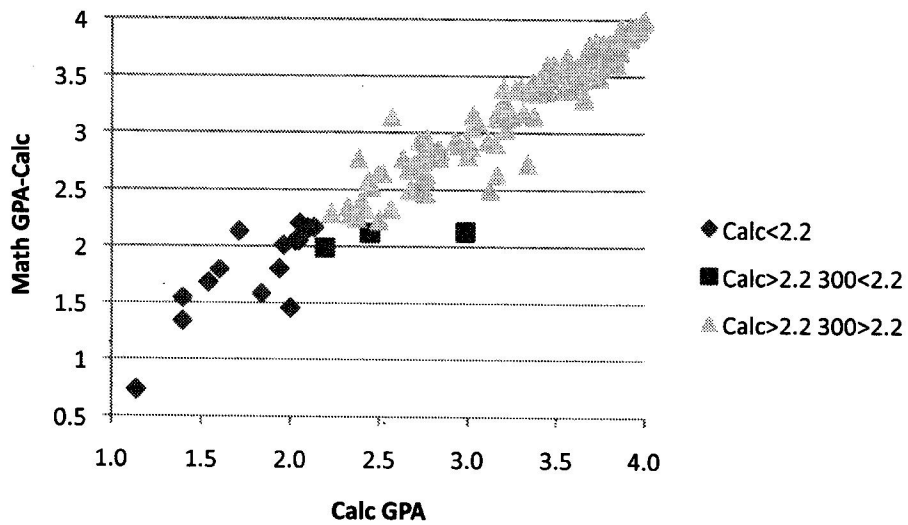
N=15, 3, 137

Graph 4: BA Standard

Math GPA-Calc vs Calc GPA

- ◆ Calc<2.2
- ■ Calc>2.2 300<2.2
- ▲ Calc>2.2 300>2.2
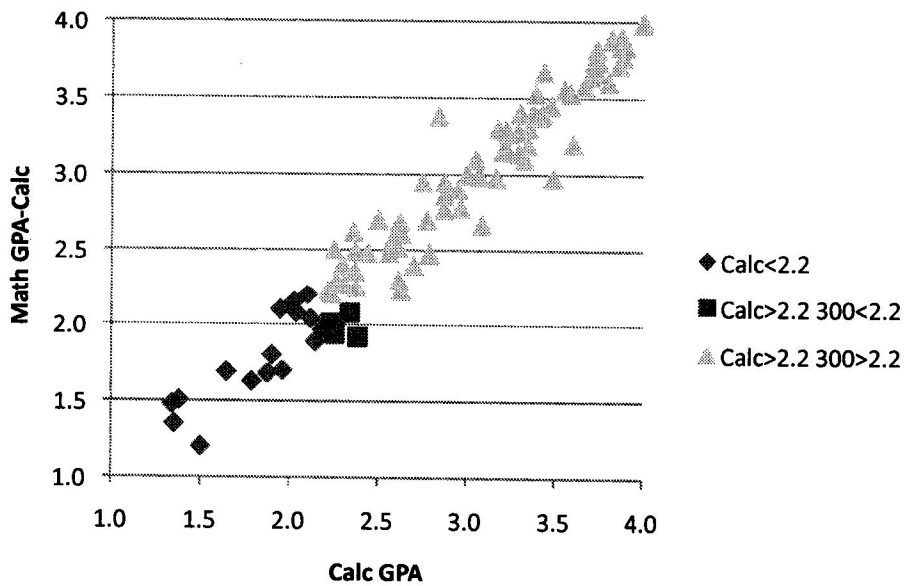
N=16, 4, 76

Graph 5: BA Philosophy
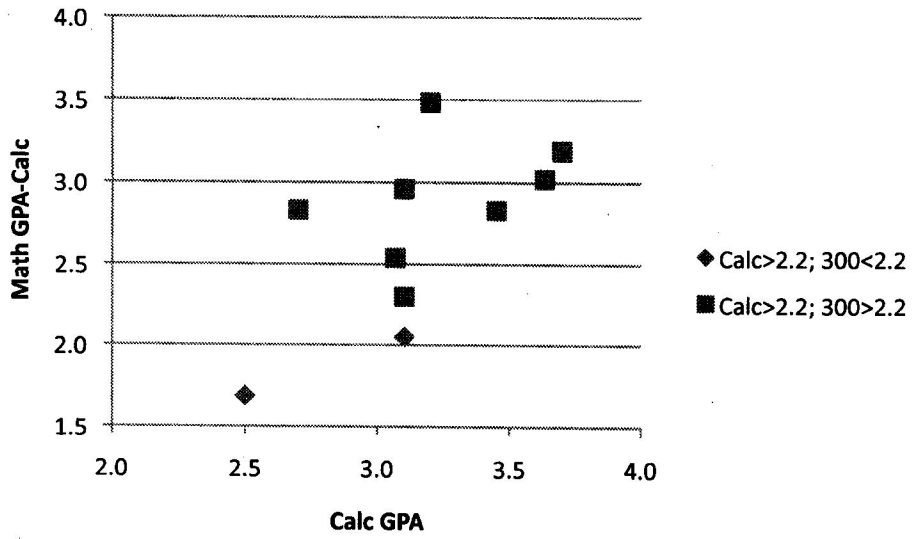
N=2; 8

Current Catalog Copy:

Bachelor of Arts

Suggested First- and Second-Year College Courses: MATH 124, MATH 125, MATH 126, or MATH 134, MATH 135, MATH 136.

Department Admission Requirements

Admission Requirements for Standard Option and Philosophy Option:

A minimum grade of 2.0 in the following courses: MATH 124, MATH 125, MATH 126 (or MATH 134, MATH 135, MATH 136)

Admission Requirements for Teacher Preparation Option:

A minimum grade of ~~2.5~~ in MATH 124, MATH 125, MATH 126 (or MATH 134, MATH 135, MATH 136); ~~a minimum grade of 2.5 in each course offered as part of the major;~~ a minimum overall GPA of 2.50 for all mathematics courses.

Major Requirements

Standard Option (50 credits):

1. *MATH 124, MATH 125, MATH 126 (or MATH 134, MATH 135, MATH 136); MATH 307; MATH 308; MATH 324; and 26 additional credits at the 300 level and above.*

2. *A minimum grade of 2.0 must be obtained in all mathematics courses presented to satisfy the mathematics requirement and in required related courses. A GPA of 2.00 or higher must be obtained in all mathematics courses taken at the UW.*

3. *At least 18 credits of graded mathematics courses numbered 300 or higher must be taken in residence at the UW.*

Philosophy Option (58 credits):

1. *MATH 124, MATH 125, MATH 126 (or MATH 134, MATH 135, MATH 136); MATH 300, MATH 308, MATH 327, MATH 328; five additional mathematics courses at the 300 or 400 level, including at least one two-quarter sequence at the 400 level other than MATH 407, MATH 408, MATH 409, or MATH 421, MATH 422*

2. *PHIL 120 or an upper-level course in logic; PHIL 100, PHIL 160, or PHIL 240; one philosophy course at the 300 level; one philosophy course at the 400 level*

Teacher Preparation Option (52-59 credits):

1. *MATH 124, MATH 125, MATH 126 (or MATH 134, MATH 135, MATH 136); MATH 300; MATH 307; MATH 308; MATH 394, MATH 411, MATH 412, MATH 444, MATH*

445; either STAT 311, MATH 390/STAT 390; or Q SCI 381; 15 credits of approved electives at the 300 level in MATH, AMATH, or STAT, or PHYS 407, PHYS 408, and PHYS 409. At least 6 credits of electives must be from the Mathematics Department.

2. A minimum grade of ~~2.5~~ in all courses presented to satisfy the program requirements, ~~with the exception of PHYS 407, PHYS 408, PHYS 409, which require a grade of 3.0.~~ At least 18 credits of graded mathematics courses numbered 300 or higher taken in residence at the UW.

Bachelor of Science

Suggested First- and Second-Year College Courses: MATH 124, MATH 125, MATH 126, or MATH 134, MATH 135, MATH 136.

Department Admission Requirements

A minimum grade of 2.0 in the following courses: MATH 124, MATH 125, MATH 126 (or MATH 134, MATH 135, MATH 136)

Major Requirements

Standard Option (66 credits):

1. A minimum grade of 2.0 in all courses applied toward the major

2. A minimum GPA of 2.00 in all mathematics courses taken at the University. At least 18 credits from courses at the 300-level or higher, taken in residence at the University.

3. Elementary Mathematics Core (21 credits): MATH 124, MATH 125, MATH 126 (5, 5, 5); MATH 300 (3); MATH 324 (3). (MATH 134, MATH 135, MATH 136 may be substituted for MATH 124, MATH 125, MATH 126, MATH 307, and MATH 308.)

4. 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 310, MATH 324, MATH 326, MATH 327, and MATH 328.)

5. 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, 3, 3).
   - Analysis: MATH 424, MATH 425, MATH 426 (3, 3, 3).
   - Geometry: MATH 441, MATH 442, MATH 443 (3, 3, 3).
   - Other Analysis: MATH 307, MATH 309 (3, 3); MATH 427, MATH 428 (3, 3).
   - Probability: MATH 394, MATH 395, MATH 396 (3, 3, 3); MATH 491, MATH 492 (3, 3).

- o *Other Mathematics: MATH 381 (3); MATH 407, MATH 408, MATH 409 (3, 3, 3); MATH 461, MATH 462 (3, 3); MATH 464, MATH 465, MATH 466 (3, 3, 3).*

6. *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.*

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. It 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. *Advanced Mathematics Core, Comprehensive Option (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:*
   - o *Algebra: MATH 402, MATH 403, MATH 404 (3, 3, 3).*
   - o *Analysis: MATH 424, MATH 425, MATH 426 (3, 3, 3).*
   - o *Geometry: MATH 441, MATH 442, MATH 443 (3, 3, 3).*
   - o *Other Analysis: MATH 307, MATH 309 (3, 3); MATH 427, MATH 428 (3, 3).*

Proposed

Bachelor of Arts

Department Admission Requirements

Admission Requirements for Standard Option and Philosophy Option:

A minimum grade of 2.0 in the following courses: MATH 124, MATH 125, MATH 126 (or MATH 134, MATH 135, and MATH 136); **a minimum cumulative GPA of 2.20 in these courses**

Admission Requirements for Teacher Preparation Option:

A minimum grade of 2.0 in MATH 124, MATH 125, MATH 126 (or MATH 134, MATH 135, and MATH 136); **a minimum cumulative GPA of 2.50 in these courses.**

Major Requirements

Standard Option (50 credits):

1. MATH 124, MATH 125, MATH 126 (or MATH 134, MATH 135, and MATH 136); MATH 307; MATH 308; MATH 324; and 26 additional credits at the 300 level and above.
2. 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.**
3. At least 18 credits of graded mathematics courses numbered 300 or higher must be taken in residence at the University.

Philosophy Option (58 credits):

1. MATH 124, MATH 125, MATH 126 (or MATH 134, MATH 135, and MATH 136); MATH 300, MATH 308, MATH 327, MATH 328; five additional mathematics courses at the 300 or 400 level, including at least one two-quarter sequence at the 400 level other than MATH 407, MATH 408, MATH 409, or MATH 421, MATH 422
2. PHIL 120 or an upper-level course in logic; PHIL 100, PHIL 160, or PHIL 240; one philosophy course at the 300 level; one philosophy course at the 400 level
3. 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.**

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

Teacher Preparation Option (52-59 credits):

1. MATH 124, MATH 125, MATH 126 (or MATH 134, MATH 135, and MATH 136); MATH 300; MATH 307; MATH 308; MATH 394, MATH 411, MATH 412, MATH 444, MATH 445; either STAT 311, MATH 390/STAT 390; or Q SCI 381; 15 credits of approved electives at the 300 level in MATH, AMATH, or STAT, or PHYS 407, PHYS 408, and PHYS 409. At least 6 credits of electives must be from the Mathematics Department.

2. 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.**

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

Bachelor of Science

Department Admission Requirements

Standard option: **A minimum grade of 2.0 in the following courses: MATH 124, MATH 125, MATH 126 (or MATH 134, MATH 135, and MATH 136); a minimum cumulative GPA of 2.20 in these courses.**

Comprehensive option: A minimum grade of 2.0 in the following courses: MATH 124, MATH 125, MATH 126 (or MATH 134, MATH 135, and MATH 136); **a minimum cumulative GPA of 2.50 in these courses.**

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, 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.)

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:

- o *Algebra:* MATH 402, MATH 403, MATH 404 (3, 3, 3).
- o *Analysis:* MATH 424, MATH 425, MATH 426 (3, 3, 3).
- o *Geometry:* MATH 441, MATH 442, MATH 443 (3, 3, 3).
- o *Other Analysis:* MATH 307, MATH 309 (3, 3); MATH 427, MATH 428 (3, 3).
- o *Probability:* MATH 394, MATH 395, MATH 396 (3, 3, 3); MATH 491, MATH 492 (3, 3).
- o *Other Mathematics:* MATH 381 (3); MATH 407, MATH 408, MATH 409 (3, 3, 3); MATH 461, MATH 462 (3, 3); MATH 464, MATH 465, MATH 466 (3, 3, 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):

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, 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.)

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:

- o *Algebra:* MATH 402, MATH 403, MATH 404 (3, 3, 3).
- o *Analysis:* MATH 424, MATH 425, MATH 426 (3, 3, 3).
- o *Geometry:* MATH 441, MATH 442, MATH 443 (3, 3, 3).

- *Other Analysis:* <u>MATH 307</u>, <u>MATH 309</u> (3, 3); <u>MATH 427</u>, <u>MATH 428</u> (3, 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. **<u>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.</u>**

6. **<u>At least 18 credits of graded mathematics courses numbered 300 or higher taken in residence at the University.</u>**

Criteria for Satisfactory Progress

BS Comprehensive and BA Teacher Preparation students making normal departmental progress must maintain a minimum cumulative major GPA of 2.50 and a minimum grade of 2.0 for individual courses required for the major.

BS Standard, BA Standard and BA Philosophy students making normal departmental progress must maintain a minimum cumulative major GPA of 2.00 and a minimum grade of 2.0 for individual courses required for the major.

1. Students are expected to make satisfactory progress towards graduation with a degree in Mathematics.

   Under normal circumstances, a Mathematics major would be considered making satisfactory progress if she/he is taking at least one math class each quarter and completing program requirements after declaring the major. Lack of academic progress may be evident by low scholarship, course drops, repeats, withdrawals or cancellations.

   2. Students making normal departmental progress must maintain a minimum cumulative major GPA of 2.00 or 2.50 depending on which option they are pursuing and a minimum grade of 2.0 for individual courses required for the major.

   3. Students must maintain good academic standing with the University of Washington. Students must maintain a minimum cumulative GPA of 2.0 to be in good standing with the University. Students falling below a cumulative GPA of 2.0 will be placed on the University's low Scholarship list.

Conditions Warranting Recommendation to Alter a Student's Standing

The performance of undergraduate math majors will be reviewed quarterly. If a student fails to meet the department's criteria for satisfactory progress as outline above, students will first be issued a warning. If satisfactory progress is not met the following quarter, they will be placed on probation and a hold will then be placed on their registration.

Warning

Students will be issued a warning letter by the department at the end of the first quarter in which they do not meet departmental satisfactory progress. They will be advised to meet with an advisor in the Student Services Office to discuss difficulties impacting their performance and to work on resolving problems to avoid probation.

Probation

Students who are on warning status who do not meet satisfactory progress the following quarter will be placed on probation. These students will be notified of their status, and a registration hold will be placed on their student account. To remove the hold, they will need to meet with an advisor in the Student Services Office. Students who fail to meet with an advisor while on probation will not be able to register for subsequent quarters.

Dismissal

In extreme circumstances, students on probation for consecutive quarters may be dismissed from the major. Students who fail to communicate with the Student Services Office while on warning status or probation, and fail to meet satisfactory progress, may be dismissed from the mathematics major.

Mathematics majors who fail to meet departmental requirements for satisfactory progress should meet with an advisor in the Student Services Office. Students *are* encouraged to discuss any issues that are pertinent to their lack of academic progress.

Appealing Probation or Dismissal

Students who are placed on probation or dismissed from the department may request reconsideration of their status by providing new and additional information that they feel is relevant to their case. The request and supporting documents will be reviewed by the Undergraduate Program Director for reconsideration. This appeal must be made within 30 days of the notification of probation or dismissal.