# BACHELOR OF ARTS (BA) DEGREE WITH A MAJOR IN MATHEMATICS

## Program Learning Outcomes for the BA Degree with a Major in Mathematics

Upon completing the BA degree with a major in Mathematics, students will be able to:

1. Achieve both practical and theoretical fluency in calculus and linear algebra.
2. Acquire a background at the undergraduate level in a wide variety of central areas of mathematics.
3. Be acquainted with formal mathematical reasoning, including proofs.

## Requirements for the BA Degree with a Major in Mathematics

For general university requirements, see Graduation Requirements (https://ga.rice.edu/undergraduate-students/academic-policies-procedures/graduation-requirements/). Students pursuing the BA degree with a major in Mathematics must complete:

- A minimum of 12 courses (36 credit hours) to satisfy major requirements.
- A minimum of 120 credit hours to satisfy degree requirements.
- A minimum of 8 courses (24 credit hours) taken at the 300-level or above.
- A minimum major GPA of 2.00 or higher in all coursework that satisfies requirements for the major.

Students who are pursuing 2 majors (i.e., are double majors) are eligible for a course substitution exception in the Elective Requirements. Double majors may substitute approved mathematics-related courses for up to 3 courses (9 credit hours) of the 8 courses (24 credit hours) required at the 300-level or above. Double majors who later drop the other major are required to meet the requirements listed for single majors.

Students receive advanced placement (AP) credit by achieving a score of 4 or 5 on the AP AB-level test or by achieving a score of 4 or 5 on the BC-level test. The credit is articulated as MATH 105 or MATH 105 and MATH 106. Entering students should enroll in the most advanced course commensurate with their background; advice is available from the mathematics faculty during Orientation Week and at other times.

The chair of the MATH department's undergraduate committee may modify requirements to meet the needs of specific advanced students. If a course is repeatable for credit, the course may only be repeated once.

The courses listed below satisfy the requirements for this major. In certain instances, courses not on this official list may be substituted upon approval of the major's academic advisor or, where applicable, the department's Director of Undergraduate Studies. (Course substitutions must be formally applied and entered into Degree Works by the major's Official Certifier (https://registrar.rice.edu/facstaff/degreeworks/officialcertifier/).) Students and their academic advisors should identify and clearly document the courses to be taken.

### Summary

| Code | Title | Credit Hours |
|---|---|---|
| Total Credit Hours Required for the Major in Mathematics | | 36 |
| Total Credit Hours Required for the BA Degree with a Major in Mathematics | | 120 |

### Degree Requirements

| Code | Title | Credit Hours |
|---|---|---|
| **Core Requirements** | | |
| MATH 101 | SINGLE VARIABLE CALCULUS I [1] | 3 |
| or MATH 105 | AP/OTH CREDIT IN CALCULUS I | |
| MATH 102 | SINGLE VARIABLE CALCULUS II [1] | 3 |
| or MATH 106 | AP/OTH CREDIT IN CALCULUS II | |
| *Select 1 from the following:* | | *6* |
| MATH 211 & MATH 212 | ORDINARY DIFFERENTIAL EQUATIONS AND LINEAR ALGEBRA and MULTIVARIABLE CALCULUS [2, 3] | |
| MATH 211 & MATH 222 | ORDINARY DIFFERENTIAL EQUATIONS AND LINEAR ALGEBRA and HONORS CALCULUS IV [2, 3] | |
| MATH 211 & MATH 232 | ORDINARY DIFFERENTIAL EQUATIONS AND LINEAR ALGEBRA and HONORS MULTIVARIABLE CALCULUS [2, 3] | |
| MATH 220 & MATH 212 | HONORS ORDINARY DIFFERENTIAL EQUATIONS and MULTIVARIABLE CALCULUS [2, 3] | |
| MATH 220 & MATH 222 | HONORS ORDINARY DIFFERENTIAL EQUATIONS and HONORS CALCULUS IV [2, 3] | |
| MATH 220 & MATH 232 | HONORS ORDINARY DIFFERENTIAL EQUATIONS and HONORS MULTIVARIABLE CALCULUS [2, 3] | |
| MATH 221 & MATH 222 | HONORS CALCULUS III and HONORS CALCULUS IV [3] | |
| **Elective Requirements** | | |
| *Select 8 elective courses from departmental (MATH) course offerings at the 300-level or above.* [4] | | *24* |
| **Total Credit Hours Required for the Major in Mathematics** | | **36** |
| Additional Credit Hours to Complete Degree Requirements * | | 53 |
| University Graduation Requirements (https://ga.rice.edu/undergraduate-students/academic-policies-procedures/graduation-requirements/) * | | 31 |
| **Total Credit Hours** | | **120** |

### Footnotes and Additional Information

* **Note:** University Graduation Requirements include 31 credit hours, comprised of Distribution Requirements (Groups I, II, and III), FWIS, and LPAP coursework. In some instances, courses satisfying FWIS or distribution requirements may additionally meet other requirements, such as the Analyzing Diversity (AD) requirement, or some of the student's declared major, minor, or certificate requirements. Additional Credit Hours to Complete Degree Requirements include general electives, coursework completed as upper-level, residency (hours taken at Rice), and/or any other additional academic program requirements.

1 Students may substitute a higher-level MATH course at the 200-level (or above), taken for at least 3 credit hours, for the MATH 101 and/or MATH 102 requirements.

2 Students may substitute MATH 354, MATH 355, MATH 381, or MATH 423 for the MATH 211 or MATH 220 requirement.

3 Students may substitute MATH 322 or MATH 370 for the MATH 212, MATH 222, or MATH 232 requirement.

4 The Elective Requirements for the double major are the same as the single major except that students may substitute approved mathematics-related courses for up to 3 courses (9 credit hours) of the 8 courses (24 credit hours) required at the 300-level or above. At most, students can take 1 course (3 credit hours) for any given course number to use toward the major. Additionally, at most 3 credit hours from courses such as MATH 479 and courses numbered MATH 490 through MATH 499 (research and supervised reading courses) can count towards major requirements.

# Policies for the BA Degree with a Major in Mathematics

## Program Restrictions and Exclusions

Students pursuing the BA Degree with a Major in Mathematics should be aware of the following program restrictions:

- As noted in Majors, Minors, and Certificates (https://ga.rice.edu/undergraduate-students/academic-opportunities/majors-minors-certificates/) under *Declaring Majors, Minors and Certificates*, students may not obtain both a BA and a BS in the same major. Students pursuing the BA Degree with a Major in Mathematics may not additionally pursue the BS Degree with a Major in Mathematics.
- As noted in Majors, Minors, and Certificates (https://ga.rice.edu/undergraduate-students/academic-opportunities/majors-minors-certificates/), students may not major and minor in the same subject.
- Students pursuing the major in Mathematics may not additionally declare the minor in Mathematics.

## Transfer Credit

For Rice University's policy regarding transfer credit, see Transfer Credit (https://ga.rice.edu/undergraduate-students/academic-policies-procedures/transfer-credit/). Some departments and programs have additional restrictions on transfer credit. Requests for transfer credit must be approved for Rice equivalency by the designated transfer credit advisor for the appropriate academic department offering the Rice equivalent course (corresponding to the subject code of the course content). The Office of Academic Advising maintains the university's official list of transfer credit advisors (https://oaa.rice.edu/advising-network/transfer-credit-advisors/) on their website: https://oaa.rice.edu. Students are encouraged to meet with the applicable transfer credit advisor as well as their academic program director when considering transfer credit possibilities.

## Additional Information

For additional information, please see the Mathematics website: https://math.rice.edu/.

# Opportunities for the BA Degree with a Major in Mathematics

## Academic Honors

The university recognizes academic excellence achieved over an undergraduate's academic history at Rice. For information on university honors, please see Latin Honors (https://ga.rice.edu/undergraduate-students/honors-distinctions/university/) (*summa cum laude*, *magna cum laude*, and *cum laude*) and Distinction in Research and Creative Work (https://ga.rice.edu/undergraduate-students/honors-distinctions/university/). Some departments have department-specific Honors awards or designations.

## Additional Information

For additional information, please see the Mathematics website: https://math.rice.edu/.