# ACADEMIC RHODE MAP
# BA MATHEMATICS MAJOR

RHODE ISLAND COLLEGE

**GENERAL EDUCATION**: A complete listing of General Education courses can be found at the Office of Academic Support (OASIS) **401** 456-8083 or online at http://www.ric.edu/recordsoffice/Pages/College-Catalog.aspx; look at catalog for year you enrolled. For Gen Ed courses, aside from Second Language requirement, which varies depending on where you are placed, you need ONE course from each category. Second Language 101/102 options are: American Sign, Arabic, French, German, Italian, Japanese, Korean, Latin, Portuguese, or Spanish. For other ways to satisfy the second language requirement look under the Gen Ed. section of the catalog. Any courses marked (F) offered Fall only; (Sp) Spring; (Su) Summer. All courses marked with an asterisk * have a prerequisite. For info. about Math Placement exam visit: http://www.ric.edu/orientation/Pages/Math-Placement.aspx. Courses with (WID) are Writing in the Discipline courses and will be writing intensive.

| Academic Major Checklist | Course | Academic Major Checklist | Course |
|---|---|---|---|
| MATH 212 Calculus I* | | MATH 416 Ordinary Differential Equations (Sp)* or MATH 417 Introduction to Numerical Analysis (Sp)* | |
| MATH 213 Calculus II* | | MATH 432 Introduction to Abstract Algebra (Sp)* | |
| MATH 300 Bridge to Advanced Mathematics (Sp)* (WID) | | MATH 441 Introduction to Probability (F)* | |
| MATH 314 Calculus III* | | MATH 461 Seminar in Mathematics (Sp)* (WID) | |
| MATH 315 Linear Algebra (F)* | | Choose TWO from: MATH 416 Ordinary Differential Equations (Sp)* or MATH 417 Introduction to Numerical Analysis (Sp)*; MATH 418 Introduction to Operations (Sp even yrs)*; MATH 431 Number Theory*; MATH 436 Discrete Mathematics (Sp)*; or MATH 445 Advanced Statistical Methods (Sp)* | |
| MATH 411 Calculus IV (F odd yrs)* | | | |
| Choose Category A OR Category B | | | |
| Category A: | | Category B: | |
| ONE from CHEM 405 Physical Chemistry I (F)*; CSCI 312 Computer Organization and Architecture I*; CSCI 422 Introduction to Computation Theory (Sp odd yrs)*; CSCI 423 Analysis of Algorithms (Sp)*; ECON 313 Managerial Economics; ECON 314 Intermediate Microeconomic Theory and Applications*; ECON 315 Intermediate Macroeconomic Theory and Applications (Sp)*; MGT 249 Business Statistics II*; MKT 333 Market Research*; or PHIL 305 Intermediate Logic (Sp even yrs) | | PHYS 101 Physics for Science and Mathematics I* AND CSCI 211 Computer Programming and Design* OR PHYS 102 Physics for Science and Mathematics II* | |

**Please note: Students must consult with their assigned advisor before they will be able to register for courses, and all MATH courses require students to have completed their College Math Competency, or have an acceptable score on the Mathematics placement exam.**

This map is a semester-by-semester plan to help you toward graduation in four years. Not everyone graduates in four years as it depends on how many courses you can take, and how you do in those courses. This map is not your only route; it is a suggestion. While there are many courses in your major that have prerequisites that will need you to take them in a special order, there is some flexibility in this map. All courses that have prerequisites are marked with an asterisk* in the checklists above and in the map.

The column to the left on the other side of this page suggests the ideal courses for you to take each semester. There are times when those courses may be full or unavailable the semester you plan to take them, in which case consider another course from a different semester with which you can switch. The column on the right has "Checkpoints" for each semester that show where you should be by the end of that semester. You should work from this map as you plan each semester's schedule with your advisor. You should plan to see your advisor in late September for the Spring Semester and in February for the Fall. The Map is designed primarily for freshmen coming to college for the first time, but transfer students may also use the Rhode Map with the understanding that they have most likely completed several requirements through transfer of credit, and will be starting further into the program. Maps assume a Fall start.

**GRADUATION REQUIREMENTS:** The following requirements must be completed by undergraduate degree candidates at Rhode Island College in order to graduate:

- General Education program, including a second language requirement and RIC 100 or equivalent
- College Math Competency (which is separate from the Gen Ed math requirement)
- College Writing Competency (satisfied by FYW with a minimum grade of C)
- Academic Major—see check chart below.
- A minimum of 120 credit hours, with a minimum of 45 credit hours taken at RIC. Of the 45 credit hours, a minimum of 15 credit hours must be in the major (12 of which must be at the 300- or 400-level).
- A minimum overall grade point average of 2.0
- A minimum grade point average of 2.0 in your major

Approved by Department of Mathematical Sciences Date 6/4/2020

Approved by Undergraduate Curriculum Committee: Date 6/5/2020 Revised:

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| SEMESTER 1 | CR | | SEMESTER 1 CHECKPOINTS ✓ |
|---|---|---|---|
| First Year Writing (FYW 100) or First Year Seminar (FYS 100). | 4 | | ☐ FYW 100P is a 6 credit option. To decide which FYW to take, see Directed Self-Placement test at www.ric.edu/firstyearwriting |
| RIC 100 Introduction to Rhode Island College | 1 | | ☐ Exempt if taking COLL 101, COLL 150, or HONR 150 |
| MATH 212 Calculus I* | 4 | | ☐ Prereq for MATH 212 is MATH 209 or appropriate score on the mathematics placement exam. May need to take MATH 209 here. Then push Math 213 Calculus II and Math 314 Calculus III back one semester<br>☐ MATH 212 satisfies Gen Ed Math (M) |
| Gen Ed Distribution course | 4 | | |
| Gen Ed--Second Lang 101 (based on placement, a course higher than 101/102 may be taken). If language requirement already satisfied: Any Gen Ed Distribution course. | 4 | | ☐ Language placement test with Dept. of Modern Languages (optional)<br>☐ Complete Second Lang 101 (if needed) |
| Requirements and GPA | | | ☐ Aim for at least 16 earned credits (While 12 is fulltime, 16 credits are preferred to stay on track to graduate in 4 years)<br>☐ Math Competency completed<br>☐ Minimum 2.0 GPA |
| # CREDITS EARNED | 17 | | ☐ Make appointment with advisor to discuss your schedule for next semester in Sept. |

| SEMESTER 2 | CR | | SEMESTER 2 CHECKPOINTS ✓ |
|---|---|---|---|
| FYW 100 or FYS 100 | 4 | | ☐ Complete FYS and FYW, for FYW, grade C or better |
| MATH 213 Calculus II* | 4 | | ☐ Prereq. is MATH 212<br>☐ MATH 213 satisfies Gen Ed Advanced Quantitative/Scientific Reasoning (AQSR) |
| Gen Ed Distribution course | 4 | | ☐ Consider Gen Ed Natural Science (NS) |
| Gen Ed--Second Lang 102* (if needed), Gen Ed, elective, or course toward minor/major | 3-4 | | ☐ Complete Second Language 102* (if needed) |
| Requirements and GPA | | | ☐ Aim for minimum of 32 earned credits<br>☐ Minimum 2.0 GPA |
| # CREDITS EARNED | 15-16 | | ☐ Make appointment with advisor to discuss your schedule for next semester in Feb. |

| SEMESTER 3 | CR | | SEMESTER 3 CHECKPOINTS ✓ |
|---|---|---|---|
| PHYS 101 Physics for Science or Mathematics I* (if choosing category B) or a category A selection* if you have the prerequisites or consent, or Gen Ed, elective, or course toward minor/major | 3-4 | | ☐ Prereq, for PHYS 101 is MATH 120 or appropriate score on mathematics placement exam<br>☐ PHYS 101 satisfies Gen Ed Natural Science (NS) |
| MATH 314 Calculus III* | 4 | | ☐ Prereq. is MATH 213 |
| Gen Ed. (if needed), elective, or course toward minor/major | 3-4 | | |
| Elective, or course toward minor/major | 3-4 | | |
| Requirements and GPA | | | ☐ Aim for minimum of 48 earned credits,<br>☐ Minimum of 2.0 GPA overall and in major |
| # CREDITS EARNED | 13-16 | | ☐ Make appointment with advisor to discuss your schedule for next semester and discuss possible minor or double major in Sept. |

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| SEMESTER 4 | CR | | SEMESTER 4 CHECKPOINTS ✓ |
|---|---|---|---|
| (If choosing category B) CSCI 211 Computer Programming and Design* OR PHYS 102 Physics for Science or Mathematics II* or Gen Ed. (if needed), elective, or course toward minor/major | 3-4 | | ☐ Prereq. for CSCI 211 is CSCI 157 or consent<br>☐ Prereq. for PHYS 102 is PHYS 101<br>☐ Category B completed if chosen option |
| Math 431 Number Theory or Math 436 Discrete Mathematics (Sp)* or other elective, or course toward minor/major | 3-4 | | ☐ Recommended from the required electives list<br>☐ Prereq. for MATH 431 is MATH 212<br>☐ Prereq. for MATH 436 is MATH 212 |
| MATH 300 Bridge to Advanced Mathematics (Sp)*(WID) | 4 | | ☐ Prereq. is MATH 213 |
| Gen Ed. (if needed), elective, or course toward minor/major | 3-4 | | |
| Requirements and GPA | | | ☐ Aim for minimum of 64 earned credits<br>☐ Minimum of 2.0 GPA overall and in major |
| # CREDITS EARNED | 13-16 | | ☐ Make appointment with advisor to discuss your schedule for next semester in Feb. |

| SEMESTER 5 | CR | | SEMESTER 5 CHECKPOINTS ✓ |
|---|---|---|---|
| MATH 411 Calculus IV (F odd yrs)* elective, or course toward a minor | 3-4 | | ☐ Prereq. is MATH 314 |
| MATH 315 Linear Algebra (F)* | 4 | | ☐ Prereq. is MATH 300 with a minimum grade of C |
| Gen Ed. (if needed), elective, or course toward minor/major | 3-4 | | |
| Category A selection if you have the prerequisites or consent, Gen Ed. (if needed), elective, or course toward minor/major | 3-4 | | ☐ Prereqs. vary—see catalog |
| Requirements and GPA | | | ☐ Aim for minimum of 80 earned credits<br>☐ Minimum of 2.0 GPA overall and in major |
| # CREDITS EARNED | 13-16 | | ☐ Make appointment with advisor to discuss your schedule for next semester in Sept. |

| SEMESTER 6 | CR | | SEMESTER 6 CHECKPOINTS ✓ |
|---|---|---|---|
| Choose 1 Connections course (Gen Ed-C) | 4 | | ☐ Prereqs are 45 completed credits and FYW and FYS. |
| MATH 416 Ordinary Differential Equations (Sp)* or MATH 417 Introduction to Numerical Analysis (Sp)* | 4 | | ☐ Prereq. for MATH 416 is MATH 314 concurrent or completed<br>☐ Prereq. for MATH 417 is MATH 213 and ONE Computer Science (CSCI) course, or consent<br>☐ Completed either MATH 416 or 417 |
| MATH 432 Introduction to Abstract Algebra (Sp)* | 4 | | ☐ Prereq is MATH 315<br>☐ This course could also be taken in Semester 8 if you want to take something else here |
| If chosen: Category A selection* if you have the prerequisites or consent, elective, or course toward major/minor | 3-4 | | ☐ If pursuing minor or second major make sure you have registered for this with the relevant department prior to audit |
| Requirements and GPA | | | ☐ Aim for minimum of 96 earned credits<br>☐ Minimum of 2.0 GPA overall and in major<br>☐ Apply for degree audit online through MyRIC |
| # CREDITS EARNED | 15-16 | | ☐ Make appointment with advisor to discuss your schedule for next semester in Feb. |

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| *SEMESTER 7* | CR | | *SEMESTER 7 CHECKPOINTS ✓* |
|---|---|---|---|
| MATH 411 Calculus IV (F odd yrs)* elective, or course toward minor/major | 3-4 | | ☐ Prereq. is MATH 314<br>☐ MATH 411 Completed |
| MATH 441 Introduction to Probability (F)* | 4 | | ☐ Prereq. is MATH 314 |
| If chosen: Category A selection* if you have the prerequisites or consent, or elective | 3-4 | | ☐ Category A completed (if chosen option) |
| Elective, or course toward minor/major | 3-4 | | |
| Requirements and GPA | | | ☐ Aim for minimum of 108 earned credits<br>☐ Minimum of 2.0 GPA<br>☐ Minimum GPA of 2.0 in major<br>☐ All ten GE courses and second lang. req. completed |
| # CREDITS EARNED | 13-16 | | ☐ Make appointment with advisor to discuss your schedule for next semester in Sept. |

| *SEMESTER 8* | CR | | *SEMESTER 8 CHECKPOINTS ✓* |
|---|---|---|---|
| ONE from MATH 416 Ordinary Differential Equations (Sp)* or MATH 417 Introduction to Numerical Analysis (Sp)*; MATH 418 Introduction to Operations (Sp even yrs)*; MATH 431 Number Theory*; MATH 436 Discrete Mathematics (Sp)*; or MATH 445 Advanced Statistical Methods (Sp)* | 3-4 | | ☐ Prereqs. vary—see catalog<br>☐ Completed TWO courses from this list (MATH 416 or 417 cannot be double-counted) |
| MATH 461 Seminar in Mathematics (Sp)* (WID) | 3 | | ☐ Prereqs are MATH 441 and prior or concurrent enrolment in MATH 432 |
| Elective, or course toward minor/major | 3-4 | | |
| Elective, or course toward minor/major | 3-4 | | |
| Requirements and GPA | | | ☐ Need minimum of 120 earned credits<br>☐ Minimum of 2.0 GPA<br>☐ Minimum GPA of 2.0 in major |
| # CREDITS EARNED | 12-15 | | Attend Gradfest and Commencement |

**For more information, check the MATHEMATICS Department website**:
http://www.ric.edu/mathComputerScience/Pages/default.aspx

Please note that all of the course options in Category A have prerequisites that are not included in the MATH program, so if this option is chosen you will need to use elective credits, or in some cases a specific Gen Ed course from one or more of your distributions, to be able to enroll. You might also check with your advisor as to the possibility of enrolling with consent.

**Also note: Students cannot count toward the major more than TWO courses with grades below C-**

**NOTE: The minimum total credit count for this major is 48 credits (depending on choices), although 8 of those may be offset against Gen Ed. courses (AQSR and M), which leaves 32 more credits of Gen Ed. and possibly 9 more depending on secondary language needs and RIC 100. The minimum credit count will be 80 credits (without secondary language/RIC 100), which would leave 40 credits, that could be used toward a second major, or a minor, or as electives.**