

# 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>

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)*		MATH 441 Introduction to Probability (F)*	
MATH 314 Calculus III*		MATH 461 Seminar in Mathematics (Sp)*	
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)*			
<b>Choose Category A OR Category B</b>			
<b>Category A:</b>		<b>Category B:</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 above MATH 120 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 Mathematics and Computer Science Date 8/9/2016

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<b>SEMESTER 1</b>	<b>CR</b>	<b>SEMESTER 1 CHECKPOINTS ✓</b>
First Year Writing (FYW 100) or First Year Seminar (FYS 100).	4	<input type="checkbox"/> FYW 100P is a 6 credit option. To decide which FYW to take, see Directed Self-Placement test at <a href="http://www.ric.edu/firstyearwriting">www.ric.edu/firstyearwriting</a>
RIC 100 Introduction to Rhode Island College	1	<input type="checkbox"/> Exempt if taking COLL 101, COLL 150, or HONR 150
MATH 212 Calculus I*	4	<input type="checkbox"/> 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 <input type="checkbox"/> 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	<input type="checkbox"/> Language placement test with Dept. of Modern Languages (optional) <input type="checkbox"/> Complete Second Lang 101 (if needed)
Requirements and GPA		<input type="checkbox"/> Aim for at least 16 earned credits (While 12 is fulltime, 16 credits are preferred to stay on track to graduate in 4 years) <input type="checkbox"/> Math Competency completed <input type="checkbox"/> Minimum 2.0 GPA
# CREDITS EARNED	17	<input type="checkbox"/> Make appointment with advisor to discuss your schedule for next semester in Sept.

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

<b>SEMESTER 3</b>	<b>CR</b>	<b>SEMESTER 3 CHECKPOINTS ✓</b>
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	<input type="checkbox"/> Prereq, for PHYS 101 is MATH 120 or appropriate score on mathematics placement exam <input type="checkbox"/> PHYS 101 satisfies Gen Ed Natural Science (NS)
MATH 314 Calculus III*	4	<input type="checkbox"/> 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		<input type="checkbox"/> Aim for minimum of 48 earned credits, <input type="checkbox"/> Minimum of 2.0 GPA overall and in major
# CREDITS EARNED	13-16	<input type="checkbox"/> Make appointment with advisor to discuss your schedule for next semester and discuss possible minor or double major in Sept.

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<b>SEMESTER 4</b>	<b>CR</b>	<b>SEMESTER 4 CHECKPOINTS ✓</b>
(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	<input type="checkbox"/> Prereq. for CSCI 211 is CSCI 157 or consent <input type="checkbox"/> Prereq. for PHYS 102 is PHYS 101 <input type="checkbox"/> 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	<input type="checkbox"/> Recommended from the required electives list <input type="checkbox"/> Prereq. for MATH 431 is MATH 212 <input type="checkbox"/> Prereq. for MATH 436 is MATH 212
MATH 300 Bridge to Advanced Mathematics (Sp)*	4	<input type="checkbox"/> Prereq. is MATH 213
Gen Ed. (if needed), elective, or course toward minor/major	3-4	
Requirements and GPA		<input type="checkbox"/> Aim for minimum of 64 earned credits <input type="checkbox"/> Minimum of 2.0 GPA overall and in major
# CREDITS EARNED	13-16	<input type="checkbox"/> Make appointment with advisor to discuss your schedule for next semester in Feb.

<b>SEMESTER 5</b>	<b>CR</b>	<b>SEMESTER 5 CHECKPOINTS ✓</b>
MATH 411 Calculus IV (F odd yrs)* elective, or course toward a minor	3-4	<input type="checkbox"/> Prereq. is MATH 314
MATH 315 Linear Algebra (F)*	4	<input type="checkbox"/> 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	<input type="checkbox"/> Prereqs. vary—see catalog
Requirements and GPA		<input type="checkbox"/> Aim for minimum of 80 earned credits <input type="checkbox"/> Minimum of 2.0 GPA overall and in major
# CREDITS EARNED	13-16	<input type="checkbox"/> Make appointment with advisor to discuss your schedule for next semester in Sept.

<b>SEMESTER 6</b>	<b>CR</b>	<b>SEMESTER 6 CHECKPOINTS ✓</b>
Choose 1 Connections course (Gen Ed-C)	4	<input type="checkbox"/> Prereqs are 45 completed credits and FYW and FYS.
MATH 416 Ordinary Differential Equations (Sp)* or MATH 417 Introduction to Numerical Analysis (Sp)*	4	<input type="checkbox"/> Prereq. for MATH 416 is MATH 314 concurrent or completed <input type="checkbox"/> Prereq. for MATH 417 is MATH 213 and ONE Computer Science (CSCI) course, or consent <input type="checkbox"/> Completed either MATH 416 or 417
MATH 432 Introduction to Abstract Algebra (Sp)*	4	<input type="checkbox"/> Prereq is MATH 315 <input type="checkbox"/> 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	<input type="checkbox"/> If pursuing minor or second major make sure you have registered for this with the relevant department prior to audit
Requirements and GPA		<input type="checkbox"/> Aim for minimum of 96 earned credits <input type="checkbox"/> Minimum of 2.0 GPA overall and in major <input type="checkbox"/> Apply for degree audit online through MyRIC
# CREDITS EARNED	15-16	<input type="checkbox"/> Make appointment with advisor to discuss your schedule for next semester in Feb.



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

<b>SEMESTER 8</b>	<b>CR</b>	<b>SEMESTER 8 CHECKPOINTS ✓</b>
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	<input type="checkbox"/> Prereqs. vary—see catalog <input type="checkbox"/> Completed TWO courses from this list (MATH 416 or 417 cannot be double-counted)
MATH 461 Seminar in Mathematics (Sp)*	3	<input type="checkbox"/> 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		<input type="checkbox"/> Need minimum of 120 earned credits <input type="checkbox"/> Minimum of 2.0 GPA <input type="checkbox"/> 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.**