

# Academic Rhode Map for BS Chemistry Major at Rhode Island College

## Concentration in Biochemistry

GENERAL EDUCATION: A complete listing of General Education courses can be found in the online catalog; 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, Portuguese, or Spanish. For other ways to satisfy the second language requirement look under the Gen Ed. section of the catalog. For information about Math Placement exam visit the orientation webpage. Any courses marked (F) offered Fall only; (Sp) Spring only. **Courses marked with an asterisk\* have prerequisites. Courses with a "W" in the prefix are Writing in the Discipline (WID) courses and will be writing intensive.**

Academic Major Checklist	Course	Academic Major Checklist	Course
CHEM 103 General Chemistry I* or CHEM 103H (F)*		CHEM 422 Biochemistry Laboratory (Sp)*	
CHEM 104 General Chemistry II* or CHEM 104H (Sp)*		CHEM 491-493 Research in Chemistry*	
CHEM 205W Organic Chemistry I (F, Sul)* (WID)		<b>Cognates:</b>	
CHEM 206W Organic Chemistry II (Sp, Sull)* (WID)		BIOL 111 Introductory Biology I*	
CHEM 310 Biochemistry (F)* (even yrs)		BIOL 112 Introductory Biology II*	
CHEM 403 Inorganic Chemistry I (F)*		MATH 212 Calculus I*	
CHEM 404W Analytic Chemistry I (Sp)* (even years) (WID) or CHEM 416 Environmental Analytical Chemistry (Sp)* (odd years) (WID)		MATH 213 Calculus II*	
CHEM 405 Physical Chemistry I (F)* and CHEM 407W Physical Chemistry Laboratory I (F)* (WID)		PHYS 101 Physics for Science and Mathematics I*	
CHEM 419 Biochemistry Mechanisms* (Sp)		PHYS 102 Physics for Science and Mathematics II*	
Select ONE from CHEM 406 Physical Chemistry II (Sp)* and CHEM 408 Physical Chemistry Laboratory II (Sp)*;		Select ONE from CHEM 412 Inorganic Chemistry II and CHEM 413 Inorganic Chemistry Laboratory II (Sp)*; CHEM 414 Instrumental Methods of Analysis (Sp)*; CHEM 418 Marine Environmental Chemistry (F)*; or CHEM 425 Advanced Organic Chemistry (F)*	

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 you will need to take in a special order, there is some flexibility in this 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 Milestone (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. Writing in the Discipline requirement is satisfied through major courses
- 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 Chair: Sarah Knowlton Date 6/22/2016

Approved by Undergraduate Curriculum Committee: Date 6/22/2016

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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	FYW 100P is a 6-credit option. There is a Directed Self-Placement questionnaire you can take to aid in this decision; check the RIC First Year Writing website
RIC 100 Introduction to Rhode Island College	1	Exempt if taking COLL 101, COLL 150, or HONR 150
CHEM 103 General Chemistry I (F, Sul)* satisfies Gen Ed Natural Science (NS) Lecture and Lab. (or CHEM 103H Honors)	4	Math Milestone or appropriate score on Math Placement Exam MUST be completed in order to take ALL science courses in this program. If not, will need to take MATH 010 this semester
Gen Ed Distribution course from <b>one</b> of these GE categories: Arts (A); Literature (L); History (H), or Social and Behavioral Sciences (SB)	4	You may need to take MATH 209 here—see “NOTE” at end of the map
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). 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). Minimum 2.0 GPA
# CREDITS EARNED	17	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	Complete FYS and FYW, for FYW, grade C or better
MATH 212 Calculus I*	4	Prereq MATH 209 or appropriate score on Mathematics Placement Exam; satisfies Gen Ed Math (M)
CHEM 104 General Chemistry II (Sp, Su)* Lecture and Lab (Gen Ed ASQR) (or CHEM 104H Honors)	4	Prereq. CHEM 103 with C- or better Gen Ed- Advanced Quantitative/ Scientific Reasoning completed
Gen Ed--Second Lang 102* (if needed), or Gen Ed	4	Complete Second Language 102* (if needed)
Requirements and GPA		Aim for minimum of 32 earned credits, with minimum of 2.0 GPA overall and in the major
# CREDITS EARNED	16	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>
CHEM 205W Organic Chemistry I*(F,Sul)	4	Prereq CHEM 104 with C- or better
MATH 213 Calculus II*	4	Prereq MATH 212
BIOL 111 Introductory Biology*	4	Prereq. completed Math Milestone
Gen Ed Distribution course from <b>one</b> of these GE categories: Arts (A); Literature (L); History (H), or Social and Behavioral Sciences (SB)	4	
Requirements and GPA		Aim for minimum of 48 earned credits, with minimum of 2.0 GPA overall and in the major
# CREDITS EARNED	16	Make appointment with advisor to discuss your schedule for next semester in Sept.

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<b>SEMESTER 4</b>	<b>CR</b>	<b>SEMESTER 4 CHECKPOINTS</b>
CHEM 206W Organic Chemistry II* (Sp, Sull) Lecture and Lab (WID)	4	Prereq CHEM 205 or CHEM 205W
BIOL 112 Introductory Biology II*	4	Prereq BIOL 111 with C- or better
Gen Ed Distribution course from <b>one</b> of these GE categories: Arts (A); Literature (L); History (H), or Social and Behavioral Sciences (SB).	4	
Gen Ed., or elective	3-4	
Requirements and GPA		Aim for minimum of 64 earned credits, with minimum of 2.0 GPA overall and in the major
# CREDITS EARNED	15-16	Make appointment with advisor to discuss your schedule for next semester in Feb. Discuss opportunities for research and Independent study with your advisor if you have not already done so.

<b>SEMESTER 5</b>	<b>CR</b>	<b>SEMESTER 5 CHECKPOINTS</b>
CHEM 310 Biochemistry (F)*	4	Prereq CHEM 206 or CHEM 206W
CHEM 403 Inorganic Chemistry I (F)*, or other elective	3-4	Prereq for CHEM 403 is CHEM 206 or CHEM 206W. May also take CHEM 403 in Semester 7
CHEM 491-493 Research in Chemistry*	1	Prereq. consent of Dept. chair
PHYS 101 Physics for Science and Mathematics I* (lecture and lab)	4	Prereq. MATH 120 or appropriate score on Mathematics Placement Exam
Gen Ed., or elective	3-4	
Requirements and GPA		Aim for minimum of 80 earned credits, with minimum of 2.0 GPA overall and in the major
# CREDITS EARNED	15-17	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	Prereqs are 45 completed credits and FYW and FYS.
CHEM 404W Analytical Chemistry I (Sp even years)* (WID) or CHEM 416 Environmental Analytical Chemistry (Sp odd years)* (WID)	3-4	Prereq. for CHEM 404W or CHEM 416W is CHEM 104; need CHEM 404W <u>OR</u> CHEM 416W. Could also take one of these in semester 8 if preferred.
CHEM 422 Biochemistry Laboratory (Sp)*	3	Prereq. CHEM 310 or BIOL 320 or by consent; may also take CHEM 422 in semester 8
CHEM 491-493 Research in Chemistry* (recommended)	1	Prereq. Consent of Dept. chair
PHYS 102 Physics for Science and Mathematics II*	4	Prereq. is PHYS 101
Requirements and GPA		All ten GE courses and second lang. req. completed. Aim for minimum of 96 earned credits, with minimum of 2.0 GPA overall and in the major. 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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<b>SEMESTER 7</b>	<b>CR</b>	<b>SEMESTER 7 CHECKPOINTS</b>
CHEM 403 Inorganic Chemistry I (F)* or 400 level elective	3	Prereq. CHEM 206 or CHEM 206W; may also take CHEM 403 in Semester 5
CHEM 405 Physical Chemistry I (F)*	3	Prereqs. are CHEM 104, MATH 213 and PHYS 102
CHEM 407W Physical Chemistry Laboratory I (F)* (WID)	1	Concurrent with CHEM 405
CHEM 491-493 Research in Chemistry* (recommended)	1	Prereq. consent of Dept. chair
Elective	3-4	
Elective	3-4	
Requirements and GPA		Aim for minimum of 108 earned credits, with minimum of 2.0 GPA overall and in the major. All ten GE courses and second lang. req. completed
# CREDITS EARNED	14-16	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>
CHEM 419 Biochemistry Mechanisms (Sp)*	3	Prereq. CHEM 310
CHEM 400 level elective* or other elective		Prereqs. vary—see catalog. CHEM 400-level elective completed
CHEM 491-493 Research in Chemistry* (recommended)	1	Prereq. consent of Dept. chair
Elective	3-4	Completed CHEM 419
Elective	4	Completed CHEM 404W or CHEM 416W
Requirements and GPA		Need minimum of 120 earned credits, with minimum of 2.0 GPA overall and in the major
# CREDITS EARNED	14-16	Attend Gradfest and Commencement

For more information, check the Physical Sciences Department website:  
<https://www.ric.edu/departments-directory/departments-physical-sciences>

**Note:** MATH 209 Pre-Calculus Mathematics is a prerequisite for MATH 212, Mathematics Department can test to see if this can be waived or if you need to take this, in which case you should take it in your first semester in place of a Gen Ed. option

**Note:** MATH 314 Calculus III is a prerequisite for CHEM 406.

**Note:** Prior to enrolling in any Chemistry course students must have completed the college Mathematics Milestone.

**NOTE:** The total credit count for the major is 67-68 credits (depending on choices), and 40 credits for Gen. Ed. However, 12 Gen Ed. credits for M, NS and AQSR will double-count, making the total 95-96 credits, leaving room for 24-25 credits that may need to include two secondary language courses and RIC 100, but could go toward a minor or electives.