

Course Requirement Checklist

PhD in Quantitative & Computational Biosciences

Students Starting Academic Year: **2024-2025**

Foundations Courses (10 credits):				
	GS-GS-6600	Foundations A: Molecules to Systems	6	
	GS-GS-6400	Foundations B: Biostatistics	4	
Program Core Courses (13 credits):				
	GS-QC-6202	Computational Project Design & Grant Writing	2	
	GS-QC-6303	Advanced Computer Programing for Biosciences	3	
	GS-QC-6401	Quantitative & Computational Methods for Biosciences 1	4	
	GS-QC-6402	Quantitative & Computational Methods for Biosciences 2	4	
Didactic Elective Courses (at least 7 credits):				
Responsible Conduct of Research Courses (4 credits):				
	GS-GS-5101	Responsible Conduct of Research 1	1	
	GS-GS-5102	Responsible Conduct of Research 2	1	
	GS-GS-5103	Responsible Conduct of Research 3	1	
	GS-GS-5104	Responsible Conduct of Research 4	1	
Professional Development Course (1 credit):				
	GS-GS-5105	Scientific Writing	1	
Seminar/Journal Literature Courses:				
	GS-QC-5110	Advanced Topics in QCB	1	2 total cr.
<i>Required in terms 1 and 2 of the first year of study.</i>				
	GS-QC-5105	Seminar in Quantitative Biosciences	1	
<i>Required in terms 1-4 every year from matriculation through attainment of Permission-To-Write.</i>				
	GS-QC-5100	Student Research Seminar	1	
<i>Required in term 4 every year from matriculation through attainment of Permission-To-Write.</i>				
Research Hours:				
In each term, students enroll in the number of credits [beyond other coursework] needed to be enrolled full-time (minimum 3 per term)				
	GS-QC-5030	Research Rotation	Var.	
<i>Taken each term when a mentor is not appointed (minimum 3 terms)</i>				
	GS-QC-5040	Special Projects	Var.	
<i>Taken each term after a mentor is appointed, and before candidacy is achieved.</i>				
	GS-QC-5050	Dissertation	Var.	
<i>Taken each term after a mentor is appointed, and after candidacy is achieved.</i>				

Graduate Degree Plan

PhD in Quantitative & Computational Biosciences

Students Starting Academic Year: **2024-2025**

General Degree Requirements:

- Completion of at least 180 term hours
- At least 30 of those term hours must be in Didactic courses
- Completion of at least three terms of Research Rotation before appointing a major advisor
- Students must maintain satisfactory academic progress as detailed in the Student Handbook

Year One Requirements:

Term 1:	GS-GS-6600	Foundations A: Molecules to Systems	3 (Didactic) <i>(two-term course)</i>	Total to Date
	GS-GS-6400	Foundations B: Biostatistics	2 (Didactic) <i>(two-term course)</i>	
	GS-GS-5101	Responsible Conduct of Research 1	1	
	GS-QC-5105	Seminar in Quantitative Biosciences	1	
	GS-QC-5110	Advanced Topics in QCB	1	
	GS-QC-6303	Advanced Computer Programming for Biosciences**	3 (Didactic)	
		Research Rotation/Elective Courses	3	
Total:			14 (8)	14 (8)
<i>**Students who are required to take GS-QC-6301 as a prerequisite to GS-QC-6303 will take GS-QC-6303 in year two.</i>				
Term 2:	GS-GS-6600	Foundations A: Molecules to Systems	3 (Didactic) <i>(two-term course)</i>	Total to Date
	GS-GS-6400	Foundations B: Biostatistics	2 (Didactic) <i>(two-term course)</i>	
	GS-QC-6401	Quantitative & Computational Methods in Biosciences 1	4 (Didactic)	
	GS-QC-5105	Advanced Topics in QCB	1	
	GS-QC-5110	Seminar in Quantitative Biosciences	1	
	GS-QC-5030	Research Rotation	3	
Total:			14 (9)	28 (17)
Term 3:	GS-QC-6402	Quantitative & Computational Methods in Biosciences 2	4 (Didactic)	Total to Date
	GS-GS-5105	Scientific Writing	1	
	GS-QC-5105	Seminar in Quantitative Biosciences	1	
		Research Rotation/Elective Courses	6	
Total:			12 (4)	40 (21)
Term 4:	GS-QC-6202	Computational Project Design & Grant Writing	2 (Didactic)	Total to Date
	GS-QC-5100	Student Research Seminar	1	
	GS-QC-5105	Seminar in Quantitative Biosciences	1	
		Research Hours/Elective Courses	8	
Total:			12 (2)	52 (23)
Term 5:		Research Hours/Elective Courses	12	Total to Date
	Total:			12

Year Two Requirements:				
Term 1:	GS-QC-5105	Seminar in Quantitative Biosciences	1	Total to Date
		Research Hours/Elective Courses	11	
	Total:		12	
Term 2:	GS-GS-5102	Responsible Conduct of Research 2	1	Total to Date
	GS-QC-5105	Seminar in Quantitative Biosciences	1	
		Research Hours/Elective Courses	10	
Total:		12	88 (23)	
Term 3:	GS-QC-5105	Seminar in Quantitative Biosciences	1	Total to Date
		Research Hours/Elective Courses	11	
	Total:		12	
<i>Student's Thesis Advisory Committee must be appointed by the end of Term 3 in the student's second year of enrollment.</i>				
Term 4:	GS-QC-5100	Student Research Seminar	1	Total to Date
	GS-QC-5105	Seminar in Quantitative Biosciences	1	
		Research Hours/Elective Courses	10	
	Total:		12	
Term 5:		Research Hours/Elective Courses	12	Total to Date
	Total:		12	124 (23)
<i>Seven additional didactic hours are required for a total of thirty (30)</i>				
Qualifying Exam Requirement:				
<ul style="list-style-type: none"> • Must be taken by the end of the second year of enrollment. • Student must complete all prerequisite activities defined by their program before taking the exam 				
Course Requirements beyond Year Two:				
Year Three, Term 3:	GS-GS-5103	Responsible Conduct of Research 3	1	
Year Four, Term 3:	GS-GS-5104	Responsible Conduct of Research 4	1	
Recurring Requirements until Graduation:				
Terms 1-4:	GS-QC-5105	Seminar in Quantitative Biosciences		As required
Term 4:	GS-QC-5100	Student Research Seminar		As required
Terms 1-5:	GS-QC-5050	Dissertation		As required*
<i>*Students shall enroll in the number of credits of Dissertation needed to be enrolled full-time (12 credits) each term through graduation.</i>				
Research Course Work:				
GS-QC-5010 Readings				
GS-QC-5030 Research Rotation				
GS-QC-5040 Special Projects				
GS-QC-5050 Dissertation				
Additional Quantitative & Computational Biosciences program courses offered*:				
GS-QC-6201 Applications to Biology of Computation				
GS-QC-6301 Practical Introduction to Python Programming for Scientists				
GS-QC-6302 Computer-Aided Discovery Methods				
<i>*Students may select electives from open course options in all graduate programs. Courses may be viewed in the Graduate School Bulletin Additionally, students may request to attend a limited number of courses offered by partner TMC institutions. Contact qcb-grad@bcm.edu for details.</i>				