Course Requirement Checklist

PhD in Quantitative & Computational Biosciences

Students Starting Academic Year: **2026-2027**

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-5100	Student Research Seminar	1	
		Required every year from matriculation through attainment of Permission-To-Write.		
	GS-QC-5105	Seminar in Quantitative Biosciences	1	*6 total cr.*
		Required in terms 2 and 4 during the first three years of study.		
	GS-QC-5110	Advanced Topics in QCB	1	*2 total cr.*
		Required in terms 1 and 2 of the first year of study.		
	GS-QC-5115	Journal Club in QCB	1	*6 total cr.*
		Required in terms 1 and 3 during the first three years of study.		
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.	
		Taken each term when a mentor is not appointed (minimum 3 terms)		
	GS-QC-5040	Special Projects	Var.	
		Taken each term after a mentor is appointed, and before candidacy is achieved.		
	GS-QC-5050	Dissertation	Var.	
		Taken each term after a mentor is appointed, and after candidacy is achieved.		

Graduate Degree Plan
PhD in Quantitative & Computational Biosciences

Students Starting Academic Year: **2026-2027**

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) *(two-term course)*	
	GS-GS-6400	Foundations B: Biostatistics	2 (Didactic) *(two-term course)*	
	GS-GS-5101	Responsible Conduct of Research 1	1	
	GS-QC-5110	Advanced Topics in QCB	1	
	GS-QC-5115	Seminar in Quantitative Biosciences	1	
	GS-QC-6303	Advanced Computer Programming for Biosciences**	3 (Didactic)	
	GS-QC-5030	Research Rotation	3	Total to Date
		Total:	14 (8)	14 (8)

***Students who are required to take GS-QC-6301 as a prerequisite to GS-QC-6303 will take GS-QC-6303 in year two.*

Term 2:	GS-GS-6600	Foundations A: Molecules to Systems	3 (Didactic) *(two-term course)*	
	GS-GS-6400	Foundations B: Biostatistics	2 (Didactic) *(two-term course)*	
	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 to Date
		Total:	14 (9)	28 (17)
Term 3:	GS-QC-6402	Quantitative & Computational Methods in Biosciences 2	4 (Didactic)	
	GS-QC-5100	Student Research Seminar	(1) *(two-term course)*	
	GS-GS-5105	Scientific Writing	1	
	GS-QC-5115	Journal Club in QCB	1	
		Research Rotation/Elective Courses	6	Total to Date
		Total:	12 (4)	40 (21)
Term 4:	GS-QC-6202	Computational Project Design & Grant Writing	2 (Didactic)	
	GS-QC-5100	Student Research Seminar	1 *(two-term course)*	
	GS-QC-5105	Seminar in Quantitative Biosciences	1	
		Research Hours/Elective Courses	8	Total to Date
		Total:	12 (2)	52 (23)
Term 5:		Research Hours/Elective Courses	12	Total to Date
		Total:	12	64 (23)

Year Two Requirements:

Term 1:	GS-QC-5115	Journal Club in QCB	1	
		Research Hours/Elective Courses	11	Total to Date
		Total:	12	76 (23)
Term 2:	GS-GS-5102	Responsible Conduct of Research 2	1	
	GS-QC-5105	Seminar in Quantitative Biosciences	1	
		Research Hours/Elective Courses	10	Total to Date
		Total:	12	88 (23)
Term 3:	GS-QC-5100	Student Research Seminar	(1) *(two-term course)*	
	GS-QC-5115	Journal Club in QCB	1	
		Research Hours/Elective Courses	11	Total to Date
		Total:	12	100 (23)

Student's Thesis Advisory Committee must be appointed by the end of Term 3 in the student's second year of enrollment.

Term 4:	GS-QC-5100	Student Research Seminar	1 *(two-term course)*	
	GS-QC-5105	Seminar in Quantitative Biosciences	1	
		Research Hours/Elective Courses	10	Total to Date
		Total:	12	112 (23)
Term 5:		Research Hours/Elective Courses	12	Total to Date
		Total:	12	124 (23)

Seven additional didactic hours are required for a total of thirty (30)

Qualifying Exam Requirement:

- 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 1:	GS-QC-5115	Journal Club in QCB	1
Year Three, Term 2:	GS-QC-5105	Seminar in Quantitative Biosciences	1
Year Three, Term 3:	GS-GS-5103 GS-QC-5115	Responsible Conduct of Research 3 Journal Club in QCB	1 1
Year Three, Term 4:	GS-QC-5105	Seminar in Quantitative Biosciences	1
Year Four, Term 3:	GS-GS-5104	Responsible Conduct of Research 4	1

Recurring Requirements until Graduation:

Terms 3-4:	GS-QC-5100	Student Research Seminar	As required

**Students shall enroll in the number of credits of Dissertation needed to be enrolled full-time (12 credits) each term through graduation.*

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

**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.