Quantitative Sciences Major Checklist: Biology

Name: **ID #:**

Academic Advisor: **Date:**

Core Courses

*Required for all QSS majors on the Biology track **declared Fall 2022 or later***
AP Credit may not be substituted for CHEM 150 / CHEM 202 or for PHYS 151 / PHYS 152

Course number & title			Semester & Year	Grade	Credits
MATH	111†	Calculus I		X	3
QTM	110	Introduction to Scientific Methods			3
MATH	210	Advanced Calculus for Data Sciences			4
MATH	221†	Linear Algebra		X	4
QTM	150	Intro to Statistical Computing I			2
QTM	151	Intro to Statistical Computing II			2
QTM	210	Probability & Statistics			4
QTM	220	Regression Analysis			4
BIOL	141 & 141L	Foundations of Modern Biology I			5
BIOL	142 & 142L	Foundations of Modern Biology II			5
CHEM	150 or 202*	Structure and Properties or Principles of Reactivity			3
PHYS	151 or 152	Physics for Science & Engineering I or II			4

† MATH 111 and MATH 221 are prerequisites to the QSS major and do not count towards major GPA
*Previously numbered CHEM 141 and CHEM 142

Elective Courses

QTM electives include 300- and 400-level lecture and seminar style classes of 3+ credit hours but not QTM 398R, 495A, 495B, 496R, 497R, 498R or 499R. BIOL electives must be selected from the table on the following page and can include the required courses of the track option not chosen.

Course number & title			Semester & Year	Grade	Credits
QTM					
QTM					
QTM					
BIOL					
BIOL					

Choose *<u>either</u>* Track 1 *<u>or</u>* Track 2

Track 1: Neurobiology

Course number & title			Semester & Year	Grade	Credits
BIOL	360	Introduction to Neurobiology			
BIOL	450	Computational Neuroscience			

Track 2: Population Biology, Ecology, & Evolution (PBEE)

Course number & title			Semester & Year	Grade	Credits
BIOL	241	Evolutionary Biology			
BIOL	247	Ecology			

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Expected Graduation: *Semester & Year* ☐

Total credit hours completed: *124 academic credit hours + 2 PE + HLTH100 needed for graduation* ☐

Credits toward QSS: *50+ needed to earn degree* ☐

QSS Biology Track Electives

Acceptable elective courses are listed below

PHYS/BIOL	212	Computational Modeling in the Sciences	BIOL/CHEM	330	Chemistry, Biology, & Molecular Modeling
BIOL	223	Developmental Biology	BIOL	336	Human Physiology
BIOL	241	Ecology	BIOL	360	Introduction to Neurobiology
BIOL	247	Evolution	PHYS	434	Physical Biology
BIOL	250	Cell Biology	CHEM	435	Molecular Simulation Chem Bio
BIOL	264	Human Genetics	BIOL	450	Computational Neuroscience
BIOL	301	Biochemistry	BIOL	455	Immunology & Disease
NBB	302	Behavioral Neuroscience	BIOL	463	Population Biology & Evolution of Disease

Note

Other Biology-related elective classes may be taken in consultation with a **Biology faculty advisor**. Students can also consider other combinations of the 4 elective classes, outside of the Neurobiology and PBEE options described above. This can be planned with guidance from **track advisors**.

Biology Faculty Advisors for QSS Students

- Rustom Antia
- Dieter Jaeger
- Ilya Nemenman
- Jaap de Roode
- Gordon Berman
- Bruce Levin
- Astrid Prince Jaap de Roode
- Sam Sober
- Ronald Calabrese
- Robert Liu
- Leslie Real