

BS Mathematical Sciences Biology Math track- Fall 2022

The Biology Track gives an opportunity to undergraduate mathematics students interested in biology to be exposed to the interplay between the two disciplines. It also provides a firm mathematical foundation necessary for graduate studies in the life sciences. Courses for this track includes mathematics, statistics, and biology.

Course Availability: This is when courses are typically offered and is subject to change:
F (Fall), S (Spring), SS (Summer) F = Fall, S = Spring, SS = Summer

Common Prerequisites (18-19 credits)

Complete all of the following with a grade of "C" or better (15 credits)

Course	Description	Pre-requisites	Term offered	Units
MAC 2311	Calculus I	Grade of "C" or higher in MAC 1147 or MAC 1140 + MAC 1114 (or placement score without prior coursework)	F, S, SS	4
MAC 2312	Calculus II	MAC 2311	F, S, SS	4
MAC 2313	Multivariable Calculus	MAC 2312	F, S, SS	4
MAP 2302	Differential Equations	MAC 2312	F, S, SS	3

Complete one of the following with a grade of "C" or better (3-4 credits):

COP 2210	Intro to Programming	MAC 1140 or MAC 1147 or MAC 2233 or MAC 2311	F, S, SS	4
COP 2250	Java Programming		F, S, SS	3

Required Courses (48 credits)

Complete all of the following with a grade of "C" or better (39 credits)

Course	Description	Pre-requisites	Term offered	Units
MAS 3105	Linear Algebra	MAC 2312	F, S, SS	3
MAD 2104	Discrete Mathematics	MAC 1105 or appropriate placement score	F, S, SS	3
MAA 3200	Intro to Advanced Math	MAD 2104 and MAC 2312	F, S	3
STA 4321	Mathematical Statistics I	MAC 2313	F	3
MAD 3401	Numerical Analysis	COP 2210 or COP 2250 or COP 2270 or CGS 2420 and MAC 2312	F, S	3
MAP 4104C	Topics in Math Modeling	MAP 2302, MAC 2313, MAS 3105	F	4
MAP 4401	Advanced Differential Eqs	MAP 2302 and MAC 2313	S	3
MAP 4315	Nonlinear Dynamics w Applications to Sciences	MAC 2313 or MAP 2302 or MAS 3105, or permission of the instructor	Consult advisor	3
BSC 2010	General Biology I	Co-requisite: BSC 2010L	F, S, SS	3
BSC 2010L	General Biology I Lab	Co-requisite: BSC 2010	F, S, SS	1
BSC 2011	General Biology II	Co-requisite: BSC 2011L	F, S, SS	3
BSC 2011L	General Biology II Lab	Co-requisite: BSC 2011	F, S, SS	1
PCB 3063	Genetics	BSC 2010	F, S, SS	3
One upper division biology course (3000-4000 level) with the approval of advisor				3

Complete one of the following with a grade of “C” or better (3 credits, Global Learning Discipline Specific):

Course	Description	Pre-requisites	Term offered	Units
IDS 4174	Mathematics and Philosophy in Arts- GL	N/A	F	3
MHF 3404	History of Mathematics- GL	MAC 2312	F	3
MHF 4401	Methods in the History of Modern Mathematics- GL	MAC 2313 and MAS 3105	S	3

Complete one of the following two options (6 credits):

Option 1

Two courses from the following, with a grade of “C” or better (6 credits)

Course	Description	Pre-requisites	Term offered	Units
STA 3163	Statistical Methods I	A course in Statistics or STA 2122 or MAC 2312	F	3
STA 3164	Statistical Methods II	STA 3163	S	3

Option 2

Two courses from the following, with a grade of “C” or better (6 credits)

Course	Description	Pre-requisites	Term offered	Units
STA 4234	Intro to Regression Analysis	STA 3112 or STA 3123 or STA 3164	S	3
STA 4202	Intro Design of Experiments	STA 3163 or STA 3112 or STA 3123 or STA 4322	F	3
STA 4502	Intro to Non-Parametric Mthds	A course in Statistics	F	3

Graduation Requirements:

- University Core Curriculum (UCC)
- Minimum of a 2.0 GPA
- 45 credits of Upper Division hours (3000-4000 level)
- 120 credit hours required for graduation
- Foreign Language requirement (FLENT/FLEX)
- Global Learning (GL) requirement
- Civic Literacy requirement

Students interested in Secondary Teacher Certification should contact the College of Arts, Sciences & Education Center for Advising & Student Success at (305) 348-2978