FIU | Arts, Sciences & Education

BS Mathematical Sciences
Computer Science track- Fall 2022

The major in Mathematics – Computer Science Track gives an opportunity to undergraduate mathematics students interested in computer science to be exposed to the interplay between the two disciplines. It also provides a firm mathematical foundation necessary for graduate studies in computer science.

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 (22-24 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

* COP 2210 required for upper division COP courses

Completion of one lecture with corresponding labs (4-5 credits) with a grade of "C" or better:

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
CHM 1045	General Chemistry I	"C" grade or higher in MAC 1105 or appropriate placement score (if no prior coursework in Math/Chem) Co-requisite: CHM 1045L	F, S, SS	3
CHM 1045L	General Chemistry I Lab	Co-requisite: CHM 1045	F, S, SS	1
CHM 1046	General Chemistry II	Prerequisite: CHM 1045 Co-requisite: CHM 1046L	F, S, SS	3
CHM 1046L	General Chemistry II Lab	Co-requisite: CHM 1046	F, S, SS	1
PHY2048	Physics W/Calculus I	Pre- or Co-requisite: MAC2311 Co-requisite: PHY 2048L	F, S, SS	4
PHY2048L	General Physics Lab I	Co-requisite: PHY 2048	F, S, SS	1
PHY2049	Physics W/Calculus II	Pre- or Co-requisite: MAC2312 Prerequisite: PHY 2048 Co-requisite: PHY 2049L	F, S, SS	4
PHY2049L	General Physics Lab II	Co-requisite: PHY 2049	F, S, SS	1
GLY 1010	Physical Geology	N/A	F, S, SS	3
GLY 1010L	Physical Geology Lab	N/A	F, S, SS	1

Required Courses (40 credits)

Complete all of the following with a grade of "C" or better (31 credits)

Course	Description	Pre-requisites	Term offered	Units
MAA 3200	Intro to Advanced Math	MAD 2104 and MAC 2312	F, S, SS	3

MAD 2104	Discrete Mathematics	MAC 1105 or appropriate placement score	F, S, SS	3
MAS 3105	Linear Algebra	MAC 2312	F, S, SS	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, SS	3
MAP 4104C	Topics in Math Modeling	MAP 2302, MAC 2313, MAS 3105	F	4
MAD 3512	Theory Algorithms	MAD 2104	F, S, SS	3
COP 3337	Programming II	COP 2210 or EEL 2880	F, S, SS	3
COP 3530	Data Structures	COP 3337 and MAD 2104 or COT 3100	F, S, SS	3

One course from the following list with a grade of "C" or better (3 credits)

CDA 3102	Computer Architecture	COP 3337 and MAD 2104 or COT 3100	F, S, SS	3

Or

CDA 3103	Fundamentals of Computer Systems	COP 2210 or equivalent	See advisor	3

Complete one course from the following list 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 "C" or MAC 2311 and permission of the instructor.	F	3
MHF 4401	Methods in the History of Modern Mathematics- GL	MAC 2313 and MAS 3105	S	3

Complete one course from the following list with a grade of "C" or better (3 credits)

Course	Description	Pre-requisites	Term offered	Units
MAP 3253	Mathematical Scientific Computation	MAC 2312, MAS 3105	Consult Advisor	3
MAA 4402	Complex Variables	MAC 2313, and MAP 2302 or MAA 4211	F	3
STA 4322	Mathematical Statistics II	STA 4321	S	3
MAD 3301	Graph Theory	COP 2210 or COP 2250 or COP 2270 or CGS 2420 and either MAS 3105 or MAD 2104	F,S,SS	3

Complete one course from the following list with a grade of "C" or better (3 credits)

Course	Description	Pre-requisites	Term offered	Units
COP 4338	Programming III	co-req. COP 3530	F, S, SS	3
COP 4710	Database Management	COP 3337, co-req COP 3530	F, S, SS	3
CAP 4770	Intro to Data Mining	COP 3530, co-req: COP 4710	F, S, SS	3
COP 4534	Algorithm Techniques	COP 3530	F, S	3
CAP 4710	Principles of Computer Graphics	COP 3337, MAC 2312	S	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