

Physics BA Biophysics Concentration

This program prepares students interested in physics and planning to enter professional schools in medicine, biomedical engineering, and biomechanics as well as entry level biotechnology positions in industry and government. The flexible program offers the opportunity for parallel studies in another discipline. Students satisfying the degree requirements of this program will also have satisfied the course requirement for admission to medical schools. Interested students should consult the Premedical advisor at (305) 348-3084

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 (32 credits)

Complete all of the following with a grade of "C" or better (16 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
PHY 1033	Physics Pathways	N/A	F,S	1

Complete all of the following with a grade of "C" or better (18 credits):

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	Pre-requisite: 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	F, S, SS	4
PHY2048L	General Physics Lab I	N/A	F, S, SS	1
PHY2049	Physics W/Calculus II	Pre- or Co-requisite: MAC2312 Pre-requisite: PHY 2048	F, S, SS	4
PHY2049L	General Physics Lab II	Pre-requisite: PHY 2048L	F, S, SS	1

Additional Lower Division Preparation (17 credits)

CHM 2210	Organic Chemistry I	Pre-requisite: CHM 1046 Co-requisite: CHM 2210L	F, S, SS	4
CHM 2210L	Organic Chemistry I Lab	Co-requisite: CHM 2210	F, S, SS	1
CHM 2211	Organic Chemistry II	Pre-requisite: CHM 2210 Co-requisite: CHM 2211L	F, S, SS	3
CHM 2211L	Organic Chemistry II Lab	Co-requisite: CHM 2211	F, S, SS	1
BSC 2010	General Biology I	Co-requisite: BSC 2010L	F, S, SS	3
BSC 2010L	General Biology Lab I	Co-requisite: BSC 2010	F, S, SS	1
BSC 2011	General Biology I	Co-requisite: BSC 2011L	F, S, SS	3
BSC 2011L	General Biology Lab I	Co-requisite: BSC 2011	F, S, SS	1

Required Courses (43 credits)

Complete all of the following with a grade of “C” or better (16 credits)

Course	Description	Pre-requisites	Term offered	Units
PHY 3106	Modern Physics I	PHY 2049	F, S,	3
PHY 3802L	Intermediate lab	Pre- or Co-requisite: PHY 3106	F, S,	3
PHY 4221	Classical Mechanics I	PHY 2049 , MAC 2313	F	4
PHY 4821L	Advanced Physics Lab	MAC 2313, PHY 3802L	F, S	3
PHZ 4710	Intro to Biophysics	PHY 2049 or PHY 3106 or CHM 3411	F	3

Complete **one** of the following options with a grade of “C” or better (3 credits)

PHY 3513	Thermodynamics	PHY 2049, Pre or Co-requisite MAC 2313	F, S	3
OR				
PHZ 3113	Methods in Theoretical Physics	MAC 2313	S	3

- Complete 4 upper division Physics electives courses with a grade of “C” or better (12 credits)
- Complete 4 upper division Biology and Chemistry elective courses with a grade of “C” or better (12 credits).

Pre-med students are strongly encouraged to take (as elective credits):

Course	Description	Pre-requisites	Term offered	Units
PCB 3063	Genetics	BSC 2010	F, S, SS	3
PCB 3063L	Genetics Lab	Co-Requisite: PCB 3063	F, S, SS	1
PCB 3702	Intermediate Human Physiology	BSC 2010 or BSC 2011	F, S, SS	3
PCB 3702L	Intermediate Human Physiology Lab	Co-Requisite: PCB 3702	F, S, SS	1

BCH 3033	General Biochemistry	CHM 2211 and BSC 2010	F, S, SS	3
BCH 3033L	General Biochemistry Lab	Co-Requisite BCH 3033	F, S, SS	1

OR

CHM 4304	Biological Chemistry I	CHM 2211, CHM 2211L	F, S, SS	3
CHM 4304L	Biological Chemistry I Lab	Co-Requisite CHM 4304	F, S, SS	1

Electives must be chosen in consultation with assigned academic advisor

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)
- 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.

Mathematics Progression Milestone Requirements

Students in the BA in Physics must meet the following mathematics progression milestone:

- Students are required to enroll in a mathematics course in both the Fall and Spring terms and in the Summer term as needed to remain on track with program milestones.
- Students admitted in the Fall or Summer terms must successfully complete MAC1105 with a grade of C or better by the end of their first Spring term.
- Students admitted in the Spring term must successfully complete MAC 1105 with a grade of C or better by the end of their first Fall term.
- No more than two attempts in MAC1105 is permitted.

Students who do not meet this mathematics progression milestone will be redirected to a more appropriate academic program

Success Markers are guideposts that help students remain on track for graduation. The Physics Department has identified important courses in the major that indicate you are on track for successful degree completion.

- 30 credits - PHY 1033, PHY 2048 (4), PHY 2048L (1), MAC 2311 (4)
- 60 credits - CHM 1045 (3), CHM 1045L (1), PHY 2049 (4), PHY 2049L (1), MAC 2312 (4)
- 90 credits - CHM 1046 (3), CHM 1046L (1), PHY 3106 (3), PHY 3802L (3), PHY 4221 (3), MAC 2313 (4)
- 105 credits - PHY 3513 (3)

In cases where students are not making good progress, a change of major may be required.