LSA BIOPHYSICS
UNIVERSITY OF MICHIGAN

Biophysics Major Requirements

Introductory Courses (not required, but highly recommended):

Biophysics 116 (Intro to Medical Imaging)
Biophysics 120 (Mysteries of the Double Helix)
Biophysics 130 (DNA Origami)
Biophysics 131 (Python Programming for the Sciences)

BIOLOGICAL PHYSICS TRACK

Prerequisites:

MATH 115 and 116
MATH 215 and 216; or CHEM 262
CHEM 210/211 and 215
PHYSICS 135/136 and 235/236 **or** 139/239 **or** 140/141 and 240/241 **or** PHYSICS 150/151 and 250/251 **or** 160/161 and 260/261
BIO 172 or 174 or 191 or 192 or 195

Core:

BIOPHYS 370 (Phys & Chemical Properties)
BIOPHYS 417 (Dynamical Processes)
BIOPHYS 450 (Intro to Biophys Lab)
BIOPHYS 495 (Senior Seminar)

Outside Core:

CHEM 351 or MCDB 310 or BIOLCHEM 415

Elective*:

Three of:

BIOPHYS 401 (Special Topics in Biophysics)
BIOPHYS 420 (Struc Bio: Arch of Life)
BIOPHYS 421 (Struc Bio: Biophys Controvrsies)
BIOPHYS 422 (Exp Methods in Struc Bio)
BIOPHYS 430 (Medical Physics)
BIOPHYS 433 (Biocomplexity)
BIOPHYS 435 (Biophysical Modeling)
BIOPHYS 440 (Biophysics of Diseases)
BIOPHYS 445 (Intro to Info Theory for Nat Sci)
BIOPHYS 454 (Macromolec Struct & Dynamics)
BIOPHYS 463 (Math. Modeling in Biology)
BIOPHYS 520 (Biophys Chem: Methods & Techniques)
BIOPHYS 521 (Biophys Chem: Theories)

STRUCTURAL BIOLOGY TRACK

Prerequisites:

MATH 115 and 116
MATH 215 and 216; or CHEM 262
CHEM 210/211 and 215
PHYSICS 135/136 and 235/236 **or** 139/239 **or** 140/141 and 240/241 **or** PHYSICS 150/151 and 250/251 **or** 160/161 and 260/261
BIO 172 or 174 or 191 or 192 or 195

Core:

BIOPHYS 370 (Phys & Chemical Properties)
BIOPHYS 420 (Structural Biology: Arch. Of Life)
BIOPHYS 421 (Structural Biology: Biophysical Controversies)
BIOPHYS 450 (Intro to Biophys Lab)
BIOPHYS 495 (Senior Seminar)

Outside Core:

CHEM 351 or MCDB 310 or BIOLCHEM 415

Elective*:

One of:

BIOPHYS 401 (Special Topics in Biophysics)
BIOPHYS 417 (Dynamical Processes)
BIOPHYS 422 (Exp Methods in Struc Bio)
BIOPHYS 430 (Medical Physics)
BIOPHYS 435 (Biophysical Modeling)
BIOPHYS 440 (Biophysics of Diseases)
BIOPHYS 445 (Intro to Info Theory for Nat Sci)
BIOPHYS 454 (Macromolec Struct & Dynamics)
BIOPHYS 463 (Math. Modeling in Biology)
BIOPHYS 520 (Biophys Chem: Methods & Techniques)
BIOPHYS 521 (Biophys Chem: Theories)

UofM Biophysics- Chemistry Building, Room 4028 930 N. University Ann Arbor, MI 48109-1055 P: 734.764.1146 F: 734.764.3323 http://lsa.umich.edu/biophysics

**Other 400-level Physics, Chemistry or Biology courses may be accepted, per approval of the Undergraduate Chair*

Cognate*:
One of:
- MATH 404
- MATH 471
- PHYSICS 406
- PHYSICS 453
- CHEM 451
- MCDB 427
- MCDB 428

Research:
At least **two credits** of BIOPHYS 399. Students wishing to do research in a laboratory outside the Program must identify a co-sponsor.

Cognate*:
One of:
- CHEM 451
- MCDB 427
- MCDB 428
- BIOLCHEM 530
- BIOLCHEM 550

Research:
At least **two credits** of BIOPHYS 399. Students wishing to do research in a laboratory outside the Program must identify a co-sponsor.

**Other 400-level Physics, Chemistry or Biology courses may be accepted, per approval of the Undergraduate Chair*

Honors Concentration: In addition to completing all the Biophysics concentration requirements (in either track), a concentration GPA of at least 3.4, the completion of an honors thesis (BIOPHYS 499) with a grade B or better, and a **second or third Biophysics elective** (depending on which track) are required. Approved honors electives are all Biophysics and cognate electives above; and CHEM 453, MCDB 422 and PHYSICS 402. Other 400-level electives may be accepted, per approval of the Undergraduate Chair.

Minor in Biophysics:
At least 15 credits from the following courses are required:
- PHYSICS 340 or CHEM 210
- BIOLOGY 305 or MCDB 310 or CHEM 351
- BIOPHYS 370 or 417
- BIOPHYS 290 or 440
- BIOPHYS 450

- Only ONE COURSE may be double-counted towards both the student's major and minor
- For more information on double-counting rules, please refer to the LSA Course Guide or speak with an advisor.