

Physics B.S. Curriculum for Students Entering up through 2014

CMU / MCS Science Core

All MCS students must complete these core courses by the end of their Junior year. Computing @ Carnegie Mellon must be completed in the first year.

99-101 / -102 / -103: Computing @ CMU

33-111: Physics I for Science Students
33-131: Matter and Interactions I

33-112: Physics II for Science Students
33-132: Matter and Interactions II

03-121: Modern Biology

09-105: Introduction to Modern Chemistry I

15-110: Principles of Computing
15-112: Fund. of Programming & CS

21-120: Differential and Integral Calculus

21-122: Integration, Diff. Eq., and Approx.

MCS Distribution

All MCS students take both constrained and free electives outside MCS. Permissible electives are listed in the course catalog.

76-101: Interpretation and Argument

Cognition, Choice, and Behavior Elective

Economic, Political, and Social
Institutions Elective

Cultural Analysis Elective

Non-Technical Elective

Non-Technical Elective

Non-Technical Elective

Non-Technical Elective

Physics Core

All Physics majors take these Physics and Mathematics courses to prepare for individualized tracks of study, including four colloquium courses.

33-104: Experimental Physics

33-201: Physics Sophomore Colloquium I

33-202: Physics Sophomore Colloquium II

33-211: Physics III: Modern Essentials

33-228: Electronics I

33-231: Physical Analysis

33-232: Mathematical Methods of Physics

33-234: Quantum Physics

21-259: Calculus in Three Dimensions

33-301: Physics Upperclass Colloquium I

33-302: Physics Upperclass Colloquium II

33-331: Physical Mechanics I

33-338: Int. Electricity and Magnetism I

33-340: Modern Physics Laboratory

33-341: Thermal Physics I

Track

These Physics, Mathematics, Technical, and Free electives determine your track. The following pages have overviews of each track.

Physics Breadth Elective

Qualifying Physics Elective

Qualifying Physics Elective

Qualifying Physics Elective

Mathematics Elective

Technical Elective

Technical Elective

Technical Elective


Free Elective

Free Elective

Free Elective

Note: Free electives are to satisfy the 360 unit requirement.

Key

 : Required Course

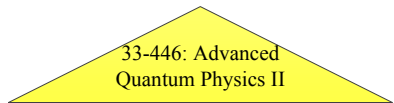
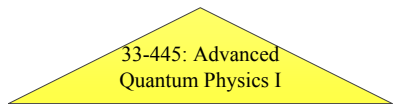
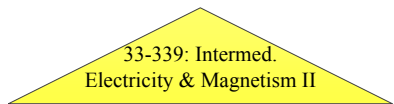
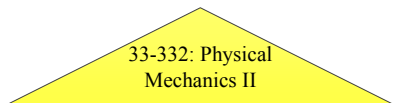
 : Select One Course

 : Any Course

Physics Major Tracks, Page 1

Graduate School Preparation

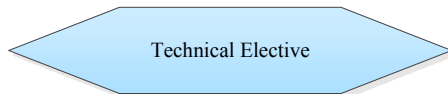
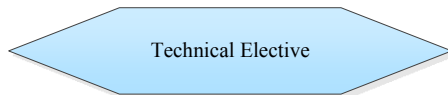
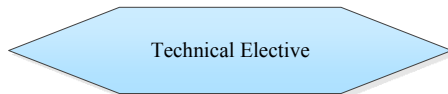
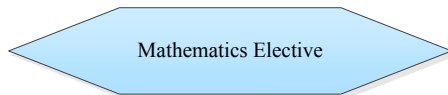
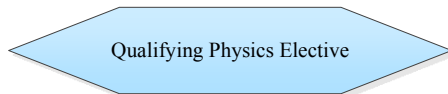
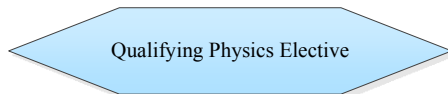
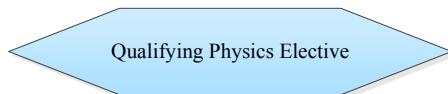
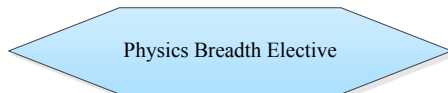
Regardless of track, Physics majors planning to undertake graduate studies are strongly advised to take the following four courses.



Note: These courses may be used as Qualifying Physics, Technical, or Free Electives.

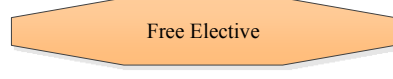
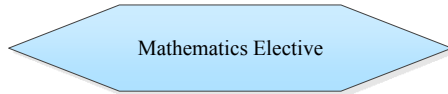
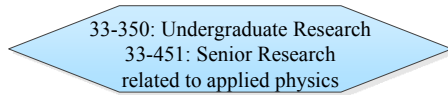
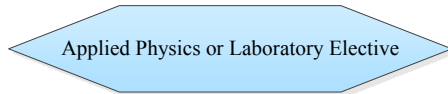
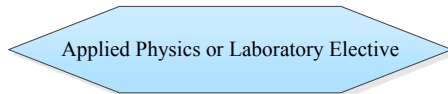
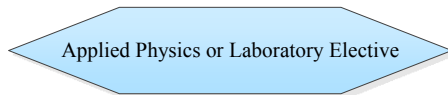
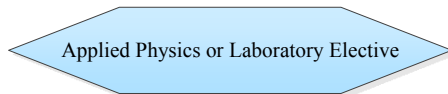
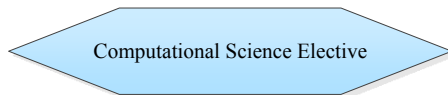
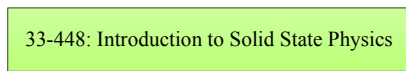
No Track

Physics students wanting maximum freedom can opt not to select a track. While there is significant flexibility, there are breadth requirements.



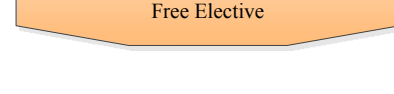
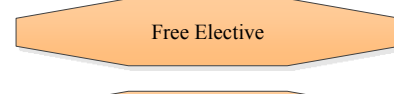
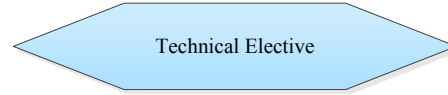
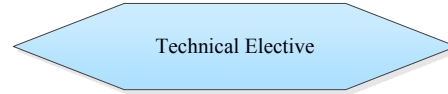
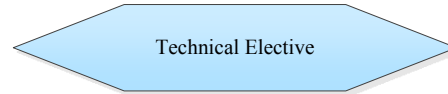
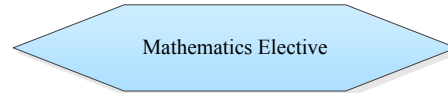
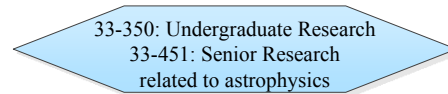
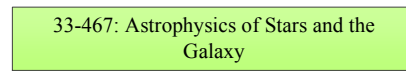
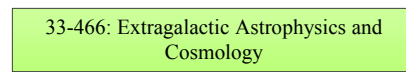
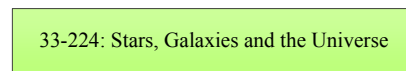
Applied Physics Track

Students aiming for a career path in industrial or governmental laboratories can take this track to enhance computing and laboratory skills.



Astrophysics Track

Students planning careers or postgraduate work in astronomy or astrophysics can follow this track to gain a strong background in the field.



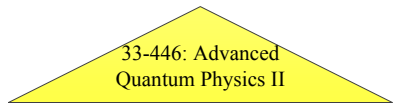
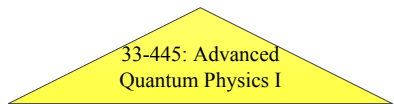
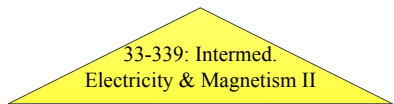
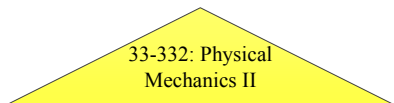
Key

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- : Select One Course
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Physics Major Tracks, Page 2

Graduate School Preparation

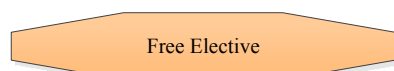
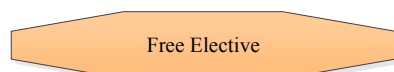
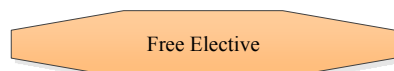
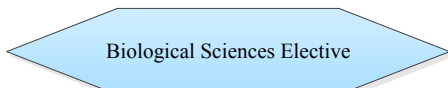
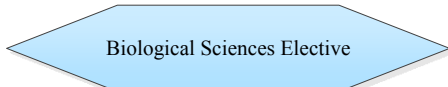
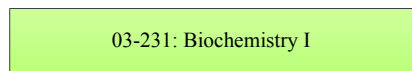
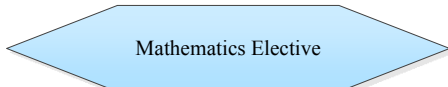
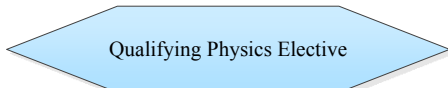
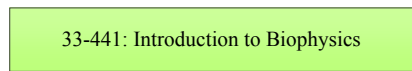
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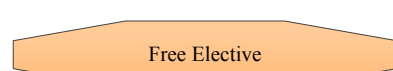
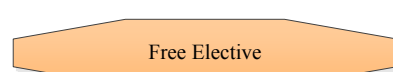
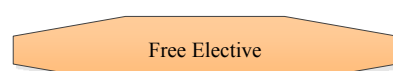
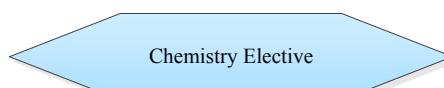
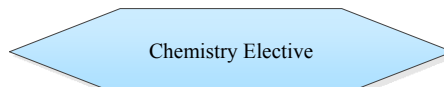
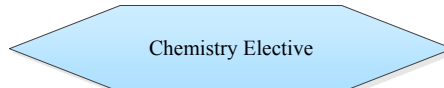
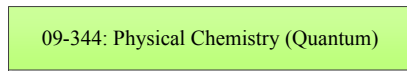
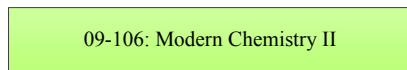
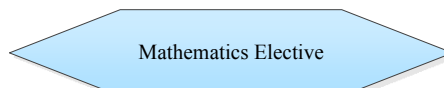
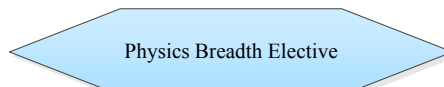
Biological Physics Track

Students preparing for careers in biological or medical physics or graduate work in biophysics can broaden their major with this track.



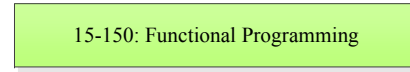
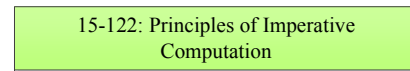
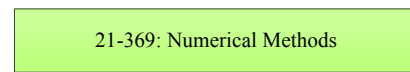
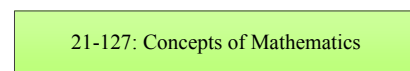
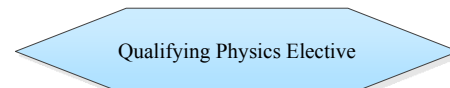
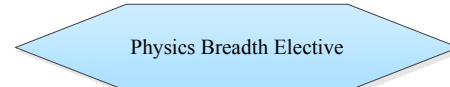
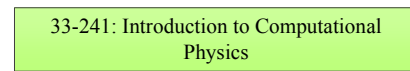
Chemical Physics

Students planning graduate studies with an emphasis on chemical physics or a health profession may be interested in this track.



Computational Physics Track

Students can strengthen their grounding in the foundations and practice of computer use as applied to scientific problems with this track.



Key

- : Required Course
- : Select One Course
- : Recommended Course
- : Any Course