

# Physics B.S. Curriculum for Students Entering from 2015

## MCS First Year Core

These introductory courses must be completed during the first year, with the exception that one of the first two courses may be delayed.

- 03-121: Modern Biology
- 09-105: Introduction to Modern Chemistry I
- 21-120: Differential and Integral Calculus
- 21-122: Integration, Diff. Eq., and Approx.
- 38-101: EUREKA: Discovery & Its Impact
- 76-101: Interpretation and Argument
- 99-101 / -102 / -103: Computing @ CMU

## MCS Upperclass Core

These courses provide non-technical breadth, both in and out of the classroom. Permissible electives are listed in the MCS course catalog.

- 38-110: Engage in Service
- 38-220: Engage in the Arts
- 38-230: Engage in Wellness: Inward
- 38-301: MCS Junior Seminar
- 38-330: Engage in Wellness: Outward
- 38-430: Engage in Wellness: Forward
- Cultural/Global Understanding 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.

- 33-121: Physics I for Science Students  
33-151: Matter and Interactions I
- 33-142: Physics II for Eng. or Physics  
33-152: Matter and Interactions II
- 33-104: Experimental Physics
- 15-110: Principles of Computing  
15-112: Fund. of Computing & CS
- 33-201: Physics Sophomore Colloquium I
- 33-211: Physics III: Modern Essentials
- 33-231: Physical Analysis
- 33-202: Physics Sophomore Colloquium II
- 33-228: Electronics I
- 33-232: Mathematical Methods of Physics
- 33-234: Quantum Physics
- 21-259: Calculus in Three Dimensions
- 33-301: Physics Upperclass Colloquium I
- 33-331: Physical Mechanics I
- 33-338: Int. Electricity and Magnetism I
- 33-341: Thermal Physics I
- 33-302: Physics Upperclass Colloquium II
- 33-340: Modern Physics Laboratory

## 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.

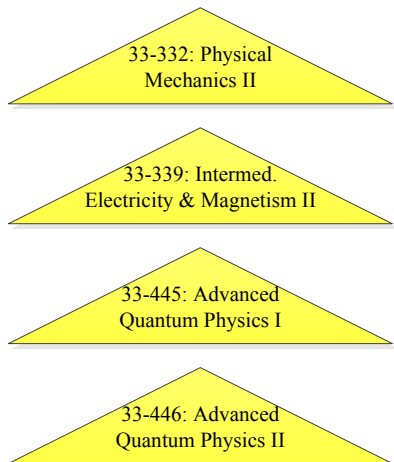
**Key**

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

# Physics Major Tracks, Page 1

## Graduate School Preparation

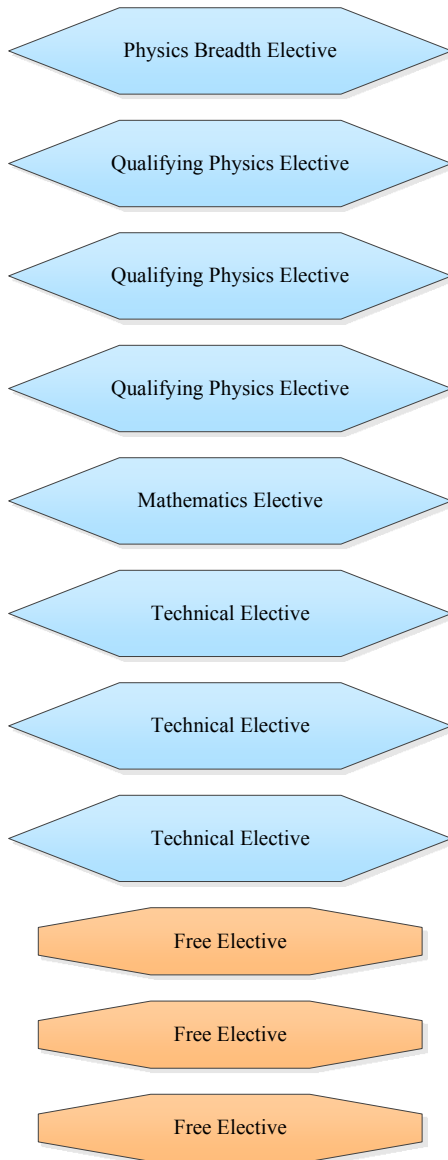
Regardless of track, Physics majors planning to undertake graduate studies are strongly advised to take the following four courses.



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

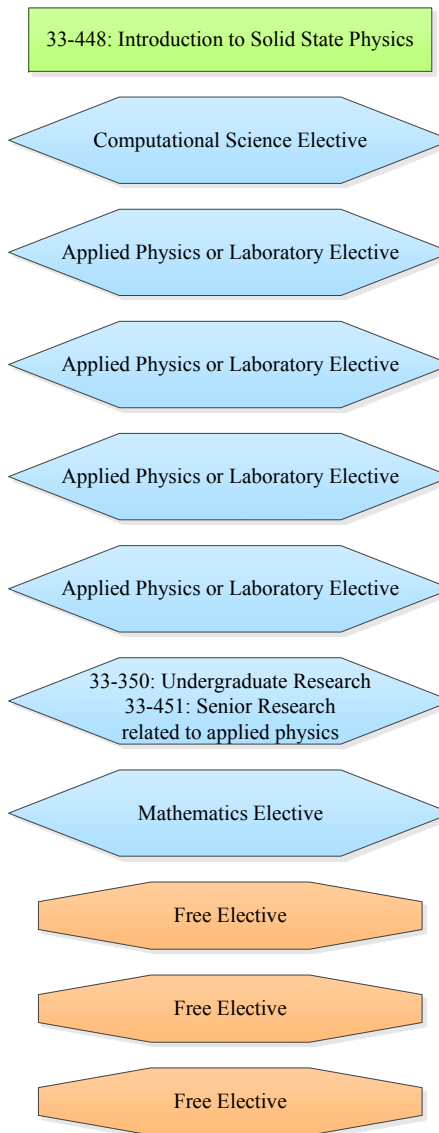
## No Track

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



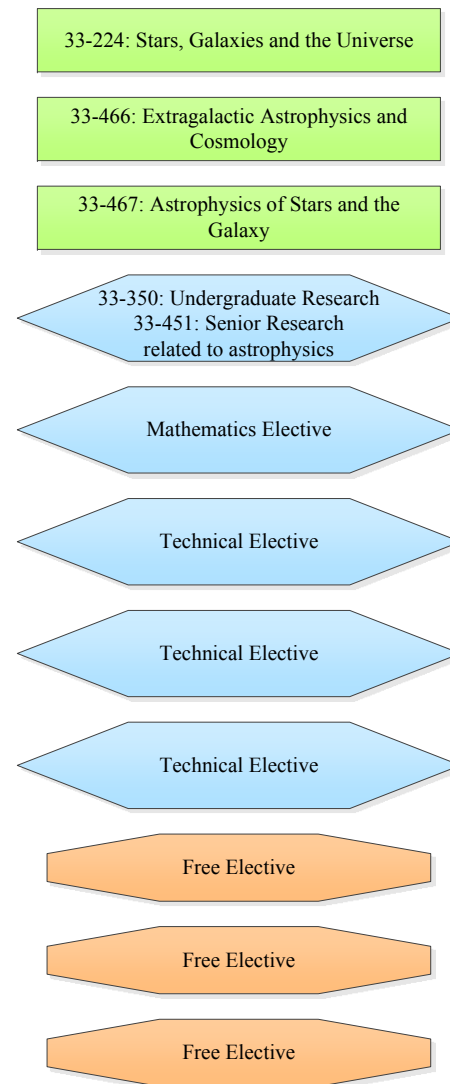
## Applied Physics Track

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.



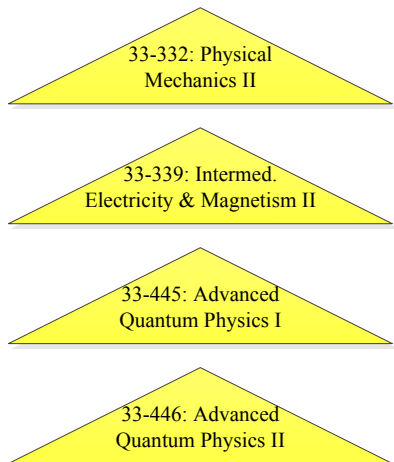
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# Physics Major Tracks, Page 2

## Graduate School Preparation

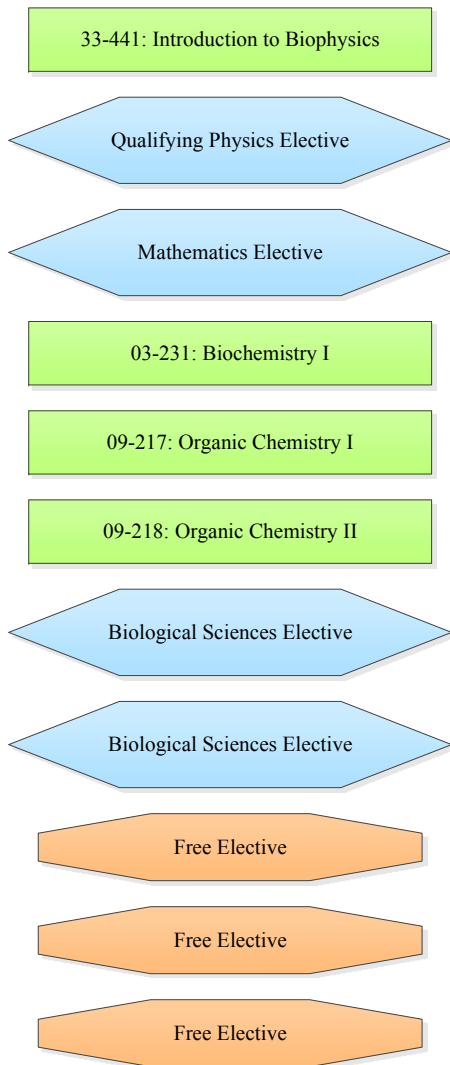
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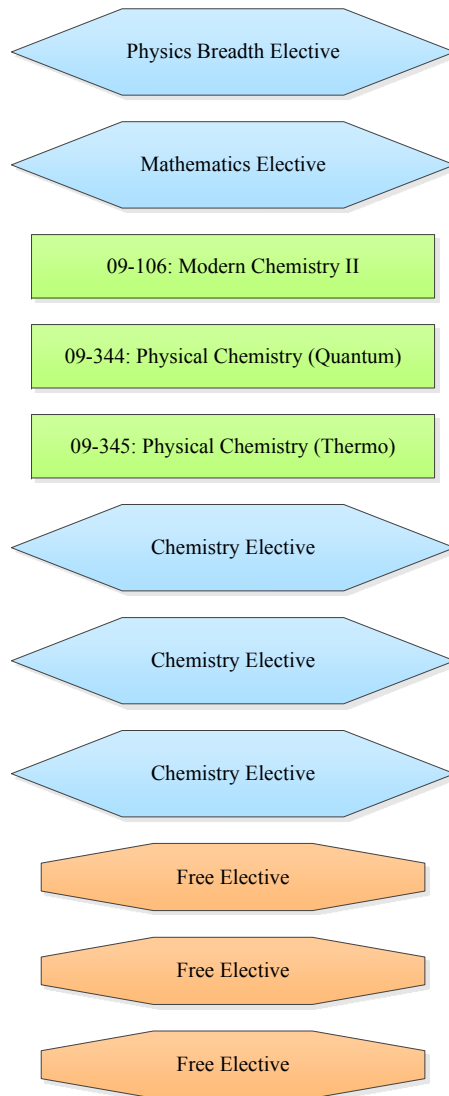
## Biological Physics Track

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



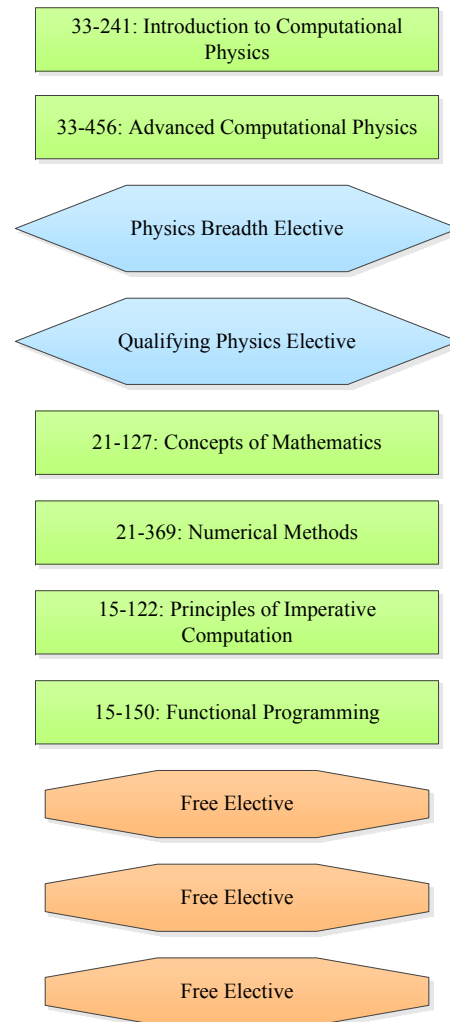
## Chemical Physics

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

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