

## Physics

The physics program provides in-depth instruction for physics majors with special emphasis in physics education and preparation for graduate school. Small class size encourages informal interaction between faculty and students.

The physics program provides laboratory and research equipment that includes microcomputers, electromagnets, oscilloscopes, lasers, vacuum pumps, multichannel fast Fourier transform analyzer, and telescopes. Access to the Internet and campus computation resources is provided through a variety of Linux- and Windows-based computer labs.

Physics program goals:

- Students will know models for thinking about mechanical, electromagnetic, atomic/quantum, and relativistic systems.
- Students will be able individually and in teams to use numerical, computational, mathematical, and visual tools to analyze and solve problems.
- Students will demonstrate ability to work collaboratively to articulate, design, conduct, and communicate results of experiments.

### **Major in Physics**

14 course credits:

PHY 203 Classical Physics I

PHY 204 Classical Physics II

PHY 207 Modern Physics

PHY 460 Perspectives in Physics

CH 113 Principles of Chemistry I

CH 114 Principles of Chemistry II

CS 120 Introduction to Programming

MA 250 Applied Calculus

MA 251 Foundational Differential Calculus ( $\frac{1}{2}$ )

MA 252 Foundational Integral Calculus ( $\frac{1}{2}$ )

MA 255 Multivariable Calculus

Four PHY elective course credits numbered 300 or above. PHY 399 does not count toward this requirement and only one credit counts from PHY 371, PHY 372 or PHY 455-PHY 456. Students meet the requirements for OCAC/ILAC in Physics by completing the required number of presentations and information searches.

### **DEPARTMENT RECOMMENDATIONS**

Students majoring in physics are encouraged to tailor the major to their interests by taking additional courses in physics, mathematics, computer science, engineering science, and/or chemistry.

### **Minor in Physics**

8 course credits:

PHY 203, PHY 204 Classical Physics I, II or (PHY 101, PHY 102 General Physics I, II)

PHY 207 Modern Physics

MA 250 Applied Calculus

MA 251 Foundational Differential Calculus ( $\frac{1}{2}$ )

MA 252 Foundational Integral Calculus ( $\frac{1}{2}$ )

MA 255 Multivariable Calculus

One PHY elective course credit numbered 300 or above (PHY 399 does not count toward this requirement and only one credit counts from PHY 371, PHY 372 or PHY 455-PHY 456) or CH 316 Chemical Thermodynamics and

Kinetics.

Additional mathematics courses, PHY 460 Perspectives in Physics, and CS 120 Introduction to Computers and Programming recommended.

### **Physics Teaching**

For the physics teaching major and endorsements, see Education Department listings.