

UNIVERSITY OF CALIFORNIA, RIVERSIDE

Student Learning Outcomes for the B.A./B.S. in Physics and Astronomy

Students completing the B.A./B.S. major will be able to:

i.) Knowledge---Based

1. Graduate will understand core physics concepts in the basic areas of the discipline (classical mechanics, electricity and magnetism, wave phenomena, thermodynamics and statistical mechanics, and quantum mechanics).
2. Graduates will be able to apply core physics knowledge to understand and solve problems on one or more advanced topics of current physics research (high energy physics, nuclear physics, condensed matter physics, biophysics, or astronomy).
3. Graduates will be able to solve problems competently and creatively by identifying the essential parts of a problem and formulating a strategy for solving the problem. This will include ability: to use appropriate mathematical and computer/computation techniques to arrive at a solution, to estimate the reasonableness of models and solutions, to test the correctness of models and solutions, and to interpret their results.
4. Graduates will be able to use computers in data acquisition and as a tool for data analysis.
5. Graduates will be able to use modern library search tools to locate and retrieve scientific information about a topic relating to physics and physics research.

ii.) Performance/Skills---Based

6. Graduates will be able to design and properly perform experiments, and appropriately record and analyze the results. This includes the analysis of data and the formulation of conclusions based on the analysis. They will also demonstrate the ability to properly use laboratory equipment (both standard and modern state---of---the---art instrumentation) and know and follow the appropriate procedures and regulations for the safe handling of materials and equipment.
7. Graduates will be able to communicate the concepts and results of their laboratory experiments through effective a) writing and b) oral communication skills.

iii.) Affective

8. Graduates will be able to successfully identify and pursue their career objectives in advanced education in professional and/or graduate schools, in a scientific career in government or industry, in a teaching career in the school systems, or in a related career following graduation.

Program Website: <http://www.physics.ucr.edu/>