

**CHARLES E. SCHMIDT COLLEGE OF SCIENCE****Student Learning Outcomes Assessment**

CONTENT KNOWLEDGE (Declarative Knowledge): Graduates in Physics will understand basic concepts, theories, and experimental findings in four core areas of physics: particle and wave mechanics, electricity and magnetism, thermodynamics and modern physics.

CONTENT KNOWLEDGE (Research Skills): Graduates in Physics will demonstrate an understanding of scientific methodology and will apply their knowledge to laboratory assignments that demonstrate each student's understanding of the nature of scientific explorations.

The required course Survey in Modern Physics (PHY 3101C) contains all core areas and will be used for assessment of each student's knowledge of the subfields of physics. Different exams during the semester cover different target areas will be used in combination with assignments for assessment of declarative knowledge. Research skills are taught and assessed in the laboratory courses Physical Electronics (PHY 3722C) and Undergraduate Laboratory (PHY 4811L, required for BS in Physics majors only) where advanced undergraduates have hands-on experience with experimental settings and computer simulations.

CRITICAL THINKING (Analytical Skills, Practical Skills): Graduates in Physics will be able to (1) properly interpret experimental data (2) understand about threats to the validity and reliability of observations, (3) are aware of the limitations of measurement scales and (4) are capable using experimental and quasi-experimental designs to test hypotheses.

In each of the following courses, students will complete homework problems, tests and laboratory assignments that require abstract critical thinking and sound scientific methodology in utilizing the fundamental laws of physics to diverse and applied situations.

PHY 3101C: Survey in Modern Physics

PHY 2048 and PHY 2048L: General Physics I and Lab

PHY 2049 and PHY 2049L: General Physics II and Lab

COMMUNICATION (Written Communication): Graduates in Physics will be able to produce writing that is well-organized, grammatically correct and properly formatted, and in accordance with the guidelines and styles described in the Department's Physics Laboratory Manuals.

COMMUNICATION (Graphic Communication): Graduates in Physics will be able to produce and interpret charts, graphs and tables that effectively and accurately display data, relationships between relevant quantities and underlying principles.

Students will be required to complete laboratory courses (PHY 2048L, PHY 2049L, PHY 3722C and PHY 4811L) in which they will complete laboratory reports that require written and graphical components as appropriate to the

assignment. In each of the following laboratory courses, students will write and be assessed on that their laboratory reports are in accordance with the guidelines and styles described in the Department's Physics Laboratory Manuals:

PHY 3722C: Physical Electronics

PHY 4811L: Undergraduate Laboratory (required for BS in Physics majors only)

PHY 2048L: General Physics Lab I, PHY 2049L: General Physics Lab II

COMPLETE DEGREE REQUIREMENTS APPEAR IN FAU'S UNIVERSITY CATALOG