Bachelor of Science (BS)  Program of Study for Physics Majors
Degree Code 270*  PHYSICS
Concentration Code 270C  SECONDARY EDUCATION LICENSURE

I. GENERAL EDUCATION CURRICULUM

Physics 1150 & 1151 or 1103 & 1104 fulfill Science Inquiry. MAT 1110 fulfills the Quantitative Literacy requirement.

II. PROFESSIONAL EDUCATION REQUIREMENTS

A minimum grade of C is required in each professional education course. CI 2300 & FDN 2400 are required prior to admission to Teacher Education.

- CI 2300 (2) Teaching and Learning in the Digital Age (Entry course to teacher education)
- FDN 2400 (2) Critical Perspectives on Teaching and Learning (Pre or Co: CI 2300) (Entry course to teacher education)
- PSY 3010 (3) Psychology Applied to Teaching (Pre or Co: CI 2300)

PROFICIENCIES:

- SPE 3300* (3) Creating Inclusive Learning Communities (Pre: CI 2300, FDN 2400, PSY 3010)  Reading _____
- CI 3400* (2) Policies and Practice in Educational Assessment (Pre: CI 2300, FDN 2400, PSY 3010)  English _____
- CI 4900 (12) Student Teaching [CAP] (All courses in professional core must be completed with grades of C (2.0) or higher prior to student teaching, along with other courses (including methods and reading) identified within the major.

*Admission to Teacher Education required.

NOTE: To be admitted to the Teacher Education Program students must take and satisfy testing requirements for Reading, Writing and Math areas of the PRAXIS (PPST or CBT). The PRAXIS II Area Exams are required for student teaching.

III. MAJOR REQUIREMENTS

Minimum of 18 semester hours must be courses taken to fulfill major requirements must be courses offered by Appalachian.

A. Area of Specialization for teaching physics: (minimum of 32 semester hours)

- PHY 1103 (4) General Physics I (Co: MAT 1020/1025)  OR  PHY 1150 (5) Analytical Physics I (Co: MAT 1110)
- PHY 1104 (4) General Physics II (Pre: PHY 1103)  OR  PHY 1151 (5) Analytical Physics II (Co: MAT 1120)
- PHY 2010 (4) Intermediate Physics I (Pre: PHY 1104/1151; MAT 1120)
- PHY 2020 (4) Intermediate Physics II (Pre: PHY 2010; MAT 2130)
- PHY 2210 (3) Physics Laboratory Techniques and Data Analysis [WID] (Co: RC 2001, PHY 2020)
- PHY 3210 (3) Modern Physics I (Pre: PHY 1151; Co: PHY 2010)
- PHY 3400 (3) Physics Instruction Practicum (Pre: PHY 1104 or 1151)
- PHY 3520 (1) Instructional Assistance (Pre: Jr/Sr standing)
- PHY 4210 (4) Methods of Experimental Physics [CAP] (Pre: PHY 2210)

0-2 hours in PHY & AST electives for minimum of 32 hours in Physics

B. Biology (4 sh)

- BIO 1801 (4) Biological Concepts I (Co: CHE 1101)

C. Geology (4 sh)

- GLY 1101 (4) Introduction to Physical Geology

D. Chemistry (8 sh)

- CHE 1101 (3) Introductory Chemistry I (Co: CHE 1110)  AND  CHE 1110 (1) Intro Chemistry I Lab (Co: CHE 1101)
- CHE 1102 (3) Intro Chem II (Pre: CHE 1101 & 1110; Co: CHE 1120)  AND  CHE 1120 (1) Intro Chemistry II Lab (Co: CHE 1102)

E. Mathematics (12 sh)

- MAT 1110 (4) Calculus with Analytic Geometry I (Pre: MAT 1025 w/min grade C-)
- MAT 1120 (4) Calculus with Analytic Geometry II (Pre: MAT 1110 w/min grade C-)
- MAT 2130 (3) Calculus with Analytic Geometry III (Pre: MAT 1120 w/min grade C-)

F. Other Required Courses (6 sh) (*Minimum “C” grade required)

- PHY 3521 (1) Secondary Science Field Experience (Pre: Jr/Sr standing)
- G S 4403* (3) Teaching Science in Middle and High Schools [WID] (Pre: RC 2001)
- R E 4630* (2) Reading in the Content Areas

G. Additional Required Courses (minimum 3 sh) (Select from the following)

- AST 1001 (4) Introductory Astronomy I – The Solar System
- PHY 4330 (3) Digital Electronics (Pre: Sr. standing)
- MAT 3130 (3) Intro to Differential Equations (Pre: MAT 1120)
- PHY 4730 (3) Analog Systems (Pre: PHY 3210; Sr standing)
- PHY 3140 (3) Environmental Phy (Pre: 1104/1151)
- STT 2810 (3) Basic Statistics (Pre: MAT 1010)
- PHY 4020 (3) Computational Methods in Physics & Engineering (Pre: PHY 2010 & 2020 w/min grade “C”; MAT 2130)

IV. MINOR (optional)

V. ELECTIVES (taken to total 122 hours for the degree)

Total hours required for graduation 127