

Bachelor of Science (BS)
Degree Code 270*
Concentration Code 270C

Program of Study for Physics Majors
PHYSICS
SECONDARY EDUCATION LICENSURE

I. GENERAL EDUCATION CURRICULUM 44
 Physics 1150 & 1151 or 1103 & 1104 fulfill Science Inquiry. MAT 1110 fulfills the Quantitative Literacy requirement.

II. PROFESSIONAL EDUCATION REQUIREMENTS 24

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

- 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*)
- SPE 3300* ____ (3) Creating Inclusive Learning Communities (*Pre: CI 2300, FDN 2400, PSY 3010*)
- C I 3400* ____ (2) Policies and Practice in Educational Assessment (*Pre: CI 2300, FDN 2400, PSY 3010*)
- C I 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.*)

PROFICIENCIES:
 Reading ____
 English ____

*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 (not including 12 s.h. counted in Area I, above) 57

2.0 major GPA is required for graduation. Major GPA calculation will include all courses taken in the major department, plus any other courses under III. Minimum of 18 semester hours of 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*) 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 ____ (4) 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)..... 2

Total hours required for graduation 127