Bachelor of Science (BS) Non-Teaching 2017-2018 Program of Study for Geology Majors
Degree Code 259* QUANTITATIVE GEOSCIENCE
Concentration Code 259E

I. GENERAL EDUCATION CURRICULUM ........................................................................................................................................ 44
Chemistry 1101/1110 & 1102/1120 fulfill the Science Inquiry. MAT 1110 fulfills Quantitative Literacy.

II. MAJOR REQUIREMENTS (not including 12 hours counted in Area I, above) ........................................................................................................................................ 76
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 II.
Minimum of 18 semester hours of courses taken to fulfill major requirements must be courses offered by Appalachian.

A. Geology (31 semester hours):
Choose one 1000-level geology course:
GLY 1101_____ (4) Introduction to Physical Geology
GLY 1102_____ (4) Introduction to Historical Geology
GLY 1103_____ (4) Environmental Change, Hazards, & Resources
GLY 2250  _____ (4) Evolution of the Earth [Pre: GLY 1101, 1102, 1103, 1104, or 1105]
GLY 2745  _____ (4) Preparation of Geologic Reports [WID] [Pre: RC 2001; GLY 2250]
GLY 3150  _____ (3) Principles of Structural Geology and Tectonics [Pre: GLY 2250, 2745]
GLY 3220  _____ (3) Fundamentals of Mineralogy [Pre/Co: GLY 2745; CHE 1101 & 1110]
GLY 3715  _____ (3) Petrology and Petrography [Pre: CHE 1101 & 1110; GLY 2250, 2745, 3220]
GLY 3800  _____ (3) Sedimentology and Stratigraphy [Pre: GLY 2250 & 2745]
GLY 4210 _____ (1) Geology Seminar [Pre: Senior Standing]
GLY 4835  _____ (6) Summer Field Geology or other approved field course [Pre: GLY 3150, 3715, 3800]

B. Quantitative Geoscience concentration (18 semester hours)
GLY 3131  _____ (3) Environmental Geochemistry [Pre: GLY 2250; CHE 1101 & 1110; MAT 1110]
PHY/GLY 3160  _____ (3) Introduction to Geophysics [Pre: 1 intro GLY; PHY 1103/1150; MAT 1110]
ENV/GLY 3455  _____ (3) Quantitative Data Analysis for Earth & Env Sci [Pre: GLY 2250; MAT 1110; PHY 1150]
GLY 4630  _____ (3) Hydrogeology [Pre: GLY 2250; MAT 1110; PHY 1103 or 1150]
GLY 4705  _____ (3) Engineering Geology [Pre: 6 s.h. GLY ≥ 2000; Jr. standing]

Plus choose 3 s.h. from the following courses:
GLY 3025  _____ (3) Principles of Paleontology [Pre: GLY 2250; 6 sh BIO or ANT ≥ 2000 level]
GLY 3333  _____ (3) Geomorphology [Pre: 6 sh GLY]
GLY 3680  _____ (3) Geoarchaeology [Pre: 4 sh GLY]
GLY 4501 _____ (1-3) Senior Research [Pre: Sr. standing; min GPA 3.25 in GLY]
GLY 4510 _____ (3) Senior Honors Thesis [Pre: GLY 4501; Sr. standing; min GPA 3.25 in GLY]

C. Mathematics/Chemistry/Physics/Statistics (39 hours)
(Taking all 5 math courses will earn the math minor. The extra MAT course will count as a non-GLY course elective below.)
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 of C-]
MAT 2130  _____ (4) Calculus with Analytic Geometry III [Pre: MAT 1120 w/min grade of C-]
MAT 2240  _____ (3) Intro to Linear Algebra [Pre: MAT 1120] OR MAT 3130 _____ (3) Intro to Differential Equations [Pre: MAT 1120]
CHE 1101/1110  _____ (4) Intro Chemistry I & Lab [Pre: MAT 1020 or higher]
CHE 1102/1120  _____ (4) Intro Chemistry II & Lab [Pre: CHE 1101/1110; MAT 1020 or higher]
PHY 1150  _____ (5) Analytical Physics I [Co: MAT 1110]
PHY 1151  _____ (5) Analytical Physics II [Co: MAT 1120]
STT 2810  _____ (3) Introduction to Statistics [Pre: MAT 1010 or higher]

Plus choose at least 3 hours from the following courses:
STT 3820  _____ (3) Statistical Methods I [Pre: STT 2810/2820]
CS 1440  _____ (4) Computer Science I [Pre: MAT 1020/1025 w/minimum grade "C-""]
CS 1445  _____ (4) Intro to Programming w/Interdisciplinary Applications [Pre: MAT 1020/1025 w/minimum grade "C-""]
MAT 2240  _____ (3) Intro to Linear Algebra [Pre: MAT 1120] OR MAT 3130 _____ (3) Intro to Different Eqtns [Pre: MAT 1120]
Elective  _____ (3) Advisor-approved computational or statistical elective

During the senior year the B.S. (non-teaching) student must take and achieve a satisfactory score on a COMPREHENSIVE EXAMINATION covering theoretical and practical aspects in areas of geology. Students who are unsuccessful on portions or all of the examination may retake appropriate portions up to two additional times prior to graduation.

III. MINOR (optional)

IV. ELECTIVES (taken to total 122 hours for the degree) ........................................................................................................................................ 122
2 semester hours of free electives must be outside the major discipline.