Bachelor of Science (BS) **2014-2015** **Program of Study for Geology Majors**
Degree Code 259* **ENVIRONMENTAL GEOLOGY CONCENTRATION**
Concentration Code 259C

I. GENERAL EDUCATION CURRICULUM 44
CHE 1101/1110 & CHE 1102/1120 fulfill Science Inquiry perspective and MAT 1110 fulfills Quantitative Literacy in general education.

II. MAJOR REQUIREMENTS *(not including 12 hours counted in Area I)* **..... 74-75**
2.0 major GPA is required for graduation. Major GPA calculation will include <u>all</u> 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. Required Geology courses (19 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 1104 _____ (4) Water: Mountains to Sea
GLY 1105 _____ (4) Oceanography

GLY 2250 _____ (4) Evolution of the Earth *(Pre: GLY 1101,1102,1103,1104, or 1105)*
GLY 2745 _____ (4) Preparation of Geologic Reports **[WID]** *(Pre: ENG 2001, GLY 2250)*
GLY 3150 _____ (3) Principles of Structural Geology and Tectonics *(Pre: GLY 2250, 2745)*
GLY 3800 _____ (3) Sedimentology and Stratigraphy *(Pre: GLY 2250)*
GLY 4210 _____ (1) Geology Seminar **[CAP]** *(Pre: Sr. standing)*

B. Environmental Geology courses (21 semester hours)

GLY 3131 _____ (3) Geochemistry *(Pre: GLY 2250, CHE 1101/1110, MAT 1110)*
GLY 3160 _____ (3) Introduction to Geophysics *(Pre/Co: GLY 1101,1102,1103,1104, 1105, or 1510; PHY 1103 or 1150; MAT 1110))*
GLY 3703 _____ (3) Issues in Environmental Geology *(Pre: Science Inquiry met)*
GLY 4630 _____ (3) Hydrogeology *(Pre: 6 s.h. GLY ≥ 2000; Jr. standing)*
GLY 4705 _____ (3) Advanced Environmental and Engineering Geology *(Pre: 6 s.h. GLY ≥ 2000; Jr. standing)*

Plus choose 6 sh from the following:

GLY 3025 _____ (3) Principles of Paleontology *(Pre: GLY 2250 or 6 sh BIO or ANT ≥ 2000)*
GLY 3220 _____ (3) Fundamentals of Mineralogy *(Pre: GLY 2250)*
GLY 3333 _____ (3) Geomorphology *(Pre: 6 sh GLY))*
GLY 3680 _____ (3) Geoarchaeology *(Pre: 4 sh GLY)*
GLY 3715 _____ (3) Petrology and Petrography *(Pre: CHE 1101/1110; GLY 2250, 2745, 3220)*
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)*
GLY 4835 _____ (6) Summer Field Geology *(Pre: GLY 3150, 3715, 3800)*

C. Math/Chemistry/Physics courses (22-23 semester hours)

CHE 1101/1110 _____(4) Introductory Chemistry I & Lab
CHE 1102/1120 _____(4) Introductory Chemistry II & Lab *(Pre: CHE 1101/1110)*
GLY/ENV 3455 _____(3) Quantitative Data Analysis for Earth & Environmental Scientists *(Pre: GLY 2250; MAT 1110; PHY 1150)*
Or CS 1440 _____(4) Computer Science I *(Pre: MAT 1020/1025 w/minimum grade "C-")*
Or CS 1445 _____(4) Intro to Programming w/Interdisciplinary Applications *(Pre: MAT 1020 or 1025 with C- or higher)*
MAT 1110_____(4) Calculus with Analytic Geometry I *(Pre: MAT 1025 w/min grade C-)*
PHY 1103 _____(4) General Physics I *(Co: MAT 1020/1025)*
STT 2810 _____ (3) Introduction to Statistics *(Pre: MAT 1010)*

D. Associated Environmental Electives (Choose 12 semester hours from the following)

ECO 2620 _____ (3) Environmental & Resource Economics
FIN 3010 _____ (3) Survey of Finance
Elec_____ (3) Advisor approved, computer intensive course
LAW 2150 ____ (3) Legal Environment of Business
MGT 3010 ____ (3) Survey of Management
P S 2130 ____ (3) State and Local Government

E. Courses in Cartography & Geographic Information Systems (GIS) (Choose 12 semester hours from the following)

GHY 2812 _____ (3) Geospatial Data & Technology
GHY 3310 _____ (3) Environmental Remote Sensing
GHY 4814 _____ (3) Principles of GeoComputation *(Pre: GHY 3812)*
GHY 3812____ (3) Intro to GIS *(Pre: GHY 2310, 2812)*
GHY 4812____ (3) Advanced GIS *(Pre: GHY 3812)*

During the senior year, the B.S. Geology with an Environmental Geology concentration student must take and achieve a satisfactory score on a comprehensive examination covering theoretical and practical aspects of areas of geology. Students who are unsuccessful on any portion or all of the examination may retake the appropriate portion(s) up to two additional times before graduation.

III. MINOR (optional)

IV. ELECTIVES (taken to total 122 hours for the degree) ..... 3-<u>4</u>
2 semester hours of free electives must be outside the major discipline. **122**

Total major requirements – 86-87; Gen Ed courses that may count in major (depends on choices) – 12; net major 74-75 hours;