EARTH-SPACE & GENERAL SCIENCE -SECONDARY EDUCATION CERTIFICATION-B.S.Ed.

With Environmental Education Certification Option

General Education Requirements

I. Required Skills and Competencies 15 cr
___ ENG 106 Writing Intensive First Year Seminar OR
ENG 110 Advanced Placement Writing (3 cr)
Student may require ENG 050 Basic Writing first, based on test results.
___ HCS 100 Intro to Human Communication (3 cr)
___ Mathematical Competency — See math courses listed under math/computer science requirements OR
MAT 140 College Algebra
___ HIS 105 Historical Foundations of Global Cultures (3 cr) AND
___ HIS 106 Thinking Historically in a Global Age (3 cr)

II. Categories of Knowledge 34 cr
A: Logic/Numbers for Rational Thinking (4cr)
___ MAT 117 Applied Statistics

B: Literary, Artistic & Cultural Traditions (9 cr)

C: Biological & Physical Sciences (9 cr)
Note course options under CHM, PHY, BIO

D: Political, Economic & Geographic Science (6 cr)

E: Social & Behavioral Science (6 cr)
___ PSY 101 General Psychology

III. Library Skills Complete via College/Advanced writing course

Required Earth Science Courses 15 cr
___ ESS 210 Physical Geology (3 cr)
___ ESS 212 Historical Geology (3 cr)
___ ESS 220 Oceanography (3 cr)
___ PHY 108 Astronomy (3 cr)
___ ESS 355 Meteorology (3 cr)

Earth Science Electives Select 4 courses: 12 cr
___ ESS 108 Conservation of Natural Resources (3 cr)
___ ESS 214 Geology of National Parks (3 cr)
___ ESS 306 Geomorphology (3 cr)
___ ESS 404 Applied Meteorology & Climatology (3 cr)
___ ESS 442 Environmental Geology (3 cr)
___ GEO 202 GIS I (3 cr)
___ GEO 203 Climatology (3 cr)
___ GEO 224 Soils (3 cr)
___ GEO 226 Hydrology (3 cr)
___ GEO 339 Remote Sensing (3 cr)
___ GEO 352 Cartography (3 cr)
___ GEO 363 GIS II (3 cr)
___ GEO 397 Introduction to Research (3 cr)
___ GEO 420 Geographic Information Systems (3 cr)
___ GEO 440 Field Techniques (3 cr)
___ GEO 444 Environmental Land Use Planning (3 cr)

Allied Sciences 34+ cr
Biology (9 credits by advisement)
___ BIO 161 Principles of Biology: Cell Structure & Function (4 cr)
___ BIO 162 Principles of Biology: Organismal Diversity (4 cr)
__BIO 145 Environmental Biology (3 cr)
__BIO 242 Ecology *(3 cr) (prereq. BIO 162 and Soph standing)
__BIO 248 Field Biology *(3 cr) (prereq. BIO 162)
__BIO 311 Ornithology (3 cr) (prereq. BIO 161 and 162)
__BIO 448 Field Botany & Plant Taxonomy *(3 cr) (prereq. BIO 162)

Chemistry (8 cr)
__CHM 121 Chemical Bonding (3 cr)
__CHM 125 Lab IB (1 cr)
__CHM 122 Chemical Dynamics (3 cr)
__CHM 126 Lab IIB (1 cr)

Physics (11 cr)
__PHY 108 Astronomy (3 cr)
__PHY 121 Introductory Physics I (3 cr)
__PHY 123 Lab (1 cr)
__PHY 122 Introductory Physics II (3 cr)
__PHY 125 Lab (1 cr)

Math (8+ credits by advisement)
__MAT 117 Applied Statistics (4 cr)
__MAT 211 Calculus I (4 cr) (prereq MAT 175 or Math Placement Level 6)
__MAT 212 Calculus II (4 cr)

Professional Education Requirements 34 cr
__TCH 207 Org. & Psych. Foundations of Secondary Education (3 cr)
__EEC 273 Introduction to Exceptionality (3 cr)
__EEC 423 Effective Instructional Strategies (3 cr)
__EEC 483 Assessing Students for Curricular Decision Making (3 cr)
__EDU 440 Teaching Science In Secondary School (4 cr)
__EDU 441 Curriculum & Evaluation/Secondary Science Classroom I (3 cr)
__RDG 413 Teaching Reading to English Language Learners (3 cr)
__EDU 495 Student Teaching & Professional Practicum (12 cr)

Recommended: General Science Certification - 39 Credits
In order to complete a General Science Certification, students must take one of the following in addition to their Earth-Space program:
__CSC 103 Overview to Computer Science, or
__CSC 180 Microcomputer Basic, or
__EDU 420 Microcomputers in the Classroom

Optional: Environmental Education Certification - 24 Credits
Courses listed in major with an * fulfill requirements

Required (3 credits)
__EDU 410 Environmental Education Practicum (3 cr)

Core (12 Credits)
__BIO 142 Intro to Ecology or 242 Ecology (3 cr)
__BIO 208 Field Bio or 210 Field Zoo or 448 Field Bot. & Plant Tax. (3 cr)
__ESS 210 Physical Geology or 111 Intro to Atmosphere (3 cr)
__BIO 145 Environment Bio or ESS 108 Conservation of Natural Resources (3 cr)

Related Electives (9 Credits)
Select 9 credits from various offerings listed in the handbook.

*Major Requirement Double Counts as General Education Credits

Total Graduation Requirements 120 cr

GPA Needed to Declare: 3.0

Helpful Hints for Advising:
Semester I ESS 210 Physical Geology
Second Core Course
Biology 162