

Check list of science courses for the BA in Earth and Space Sciences -earth science education track

Revised April 2009

A. Introductory science courses

The following courses or their equivalents at other colleges or universities are required.

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| _____ AMS 102 Elements of Statistics | _____ CHE 132. General Chemistry II |
| _____ AST 101 Introduction to Astronomy | _____ CHE 133 General Chemistry Laboratory I |
| _____ AST 112 Astronomy Laboratory | _____ CHE 134 General Chemistry Laboratory II |
| _____ ATM 102 Weather and Climate | _____ GEO 102 The Earth |
| _____ ATM 205 Introduction to Atmospheric Sciences | _____ GEO 103 The Earth Through Time |
| _____ BIO 201 Fundamentals of Biology | _____ GEO 112 Physical Geology |
| _____ BIO 202* Fundamentals of Biology | _____ GEO 113 Historical Geology Laboratory |
| _____ BIO 204* Fundamentals of Scientific Inquiry | _____ MAT 125 Calculus A |
| _____ CHE 131 General Chemistry I | _____ PHY 119 Physics for Environmental Studies |

*Change in Biology course requirements affects all students who begin to take introductory courses in Fall 2009.

B. Elective Courses

At least 24 credits from approved course list, chosen in consultation with the program director. At least two of the courses must include a laboratory. It is highly recommended that earth science education students take GEO 403 Stratigraphy, GEO 306 Mineralogy and Petrology, and GEO 309 Structural Geology. These courses form the core of geology as taught in the earth science curriculum.

Credits

- _____ Course _____
- _____ Course _____
- _____ Course _____
- _____ Course _____
- _____ Course _____
- _____ Course _____
- _____ Course _____
- _____ Course _____
- _____ Course _____

_____ Total

C Specific Science Concentration

At least 12 credits of the 24 elective credits must be chosen from one of the earth and space science disciplines: astronomy, atmospheric sciences or geosciences.

- _____ Course _____
 - _____ Course _____
 - _____ Course _____
 - _____ Course _____
 - _____ Course _____
- _____ Total

D Upper-division writing requirement.

All students in the earth science education track must submit two papers (term papers, laboratory reports, or independent research reports) that involve collecting data or observations, processing and interpreting this information and preparing a professional quality report. These reports must be submitted to the director of undergraduate studies for evaluation by the end of the junior year. If this evaluation is satisfactory, the student will have fulfilled the upper-division writing requirement. If it is not, the student must fulfill the requirement before graduation.

Notes:

The sequence CHE 123 and 124 may be substituted for CHE 131 and 132, with permission of the undergraduate program director.

Approved Undergraduate Earth Science Courses for the Earth Science Education track of the BA in ESS –

It is highly recommended that earth science education students take GEO 403 Stratigraphy, GEO 306 Mineralogy, and GEO 309 Structural Geology. These courses form the core of geology as taught in the earth science curriculum.

	Credits
AST 100 Astronomy Today	1
AST 105 Introduction to the Solar System	3
AST 200 Current Astronomical Research at Stony Brook	1
AST 205 Introduction to Planetary Sciences	3
AST 248 Search for Life in the Universe	3
AST 301 Collisions in the solar system	3
AST 304 The Universe	3
ATM 237 Current Topics in World Climate and Atmosphere	3
ATM 247 Atmospheric Structure and Analysis	3
ATM 305 Global Atmospheric Change	3
ATM 397 Air Pollution and its Control	3
GEO 101 Environmental Geology	3
GEO 106 Planetary Geology	3
GEO 107 Natural Hazards	3
GEO 109 Life Through Time	3
GEO 287 Introductory Research in Geology	0-3
GEO 301 Sustainability of the Long Island Pine Barrens	3
GEO 302 GIS for Geologists counts as laboratory	1
GEO 304 Energy, Mineral Resources and the Environment	3
GEO 305 Field Geology counts as laboratory	3
GEO 306 Mineralogy includes laboratory	4
GEO 309 Structural Geology includes laboratory	4
GEO 310 Introduction to Geophysics	3
GEO 311 Geosciences and Global Concerns	3
GEO 315 Groundwater Hydrology	3
GEO 316 Geochemistry of Surficial Processes includes laboratory	4
GEO 318 Engineering Geology and Coastal Processes	3
GEO 320 Glacial Geology	3
GEO 330 The Geology of Mars	3
GEO 403 Stratigraphy includes laboratory	4
GEO 405 Field Camp counts as laboratory	1 to 6
GEO 407 Igneous and Metamorphic Petrology laboratory	4
GEO 420 Environmental Analysis Using Remote Sensing and GIS.	4
GEO 440 Geological Applications of Remote Sensing	3
GEO 487 Senior Research in Geology may count as laboratory	0-6