

ES - EARTH SCIENCE (ES)

ES 521. Applied Paleontology. (4 Credits)

Taxonomic principles, biostratigraphy, paleoecology. Field trips may be required. Independent project and/or term paper required. Prerequisite: ES 132 or departmental approval. Special fee: \$30.00.

Course Fees: \$50

ES 525. Introduction to Oceanography. (4 Credits)

The physics, chemistry, geology, and biology of the oceans. Prerequisites: BI 112; CH 112; PH 242 or 252.

ES 528. Oceanology of the Gulf of Mexico. (2 Credits)

A detailed descriptive study of the coastal zone, continental shelf, and deep ocean of the Gulf of Mexico and adjacent waters. Prerequisite: ES 425 or ES 525. (Offered at Dauphin Island)

ES 531. Structural Geology. (3 Credits)

The nature, classification, origin, and quantification of geologic structures, with emphasis on sedimentary rocks. Field trips may be required. Independent project and/or term paper required. Prerequisites: ES 132.

ES 531L. Structural Geology Laboratory. (1 Credit)

Laboratory analysis, including computer mapping of folds, faults, and other structural features. Prerequisite: ES 431 or concurrent enrollment in ES 531.

ES 541. Stratigraphy and Sedimentology. (3 Credits)

Stratified rocks and the processes involved in the formation of sedimentary rocks. Field trips may be required. Independent project and/or term paper required. Prerequisite: ES 132.

ES 580. Topics in Earth Science. (1-4 Credits)

Field trip and/or term paper required. Departmental approval required. Special fee may be required depending on the topic.

ES 581. Topics in Earth Science. (1-4 Credits)

Field trip and/or term paper required. Departmental approval required. Special fee may be required depending on the topic.

ES 588. Hydrogeology. (3 Credits)

The interrelationships between water and geologic materials and processes. Independent project and/or term paper required. Prerequisite: ES 131.

ES 607. Astronomy for Teachers. (3 Credits)

This course considers popular topics in astronomy. Content includes observational aspects of astronomy including constellations, planets, the Sun, celestial moons, and Earth's seasons with an emphasis on understanding those topics which are known to have common misconceptions. A paper or major project will be completed in partial fulfillment of course requirements. Prerequisite PH 125 or permission of department chair.

Course Fees: \$50

ES 615. Problems in Elementary School Science. (3 Credits)

Considers the problems of elementary school teachers in the area of science. Problems involving applications of both physical and biological science to the elementary school curriculum are considered. Recent programs and curriculum developments are emphasized. Provision is made for individual investigation in new curriculum programs. Prerequisite: 12 semester hours of science. Special fee: \$30.00.

Course Fees: \$50

ES 616. Problems in Middle School Science. (3 Credits)

Considers the problems of teachers of science in the middle school grades. Emphasis is placed on middle school programs and new curriculum developments in science. Provision is made for investigation of ideas of relevance to middle school programs. Prerequisite: undergraduate major or minor in science. Special fee: \$30.00.

Course Fees: \$50

ES 617. Problems in Secondary School Science. (3 Credits)

Considers the problems of teachers of science in the secondary grades. Emphasis is placed on recent secondary school programs and new curriculum developments in science. Provision is made for investigation in new curriculum programs. Prerequisite: undergraduate major or minor in science. Special fee: \$30.00.

Course Fees: \$50

ES 680. Topics in Earth Science. (1-6 Credits)

Topics will be selected for earth science and geology disciplines at the graduate level. Departmental approval required when course is taken at UNA. Departmental and university approval required if course is taken at another institution. Field trip and/or term paper required. Special fees may be required. Prerequisites ES 131 and 132 plus six additional hours in earth science or geology. Must be a science major. Each course may be repeated up to a total of three hours for each course. (Fall, Spring, Summer)

Course Fees: \$30

ES 681. Topics in Earth Science. (1-6 Credits)

Topics will be selected for earth science and geology disciplines at the graduate level. Departmental approval required when course is taken at UNA. Departmental and university approval required if course is taken at another institution. Field trip and/or term paper required. Special fees may be required. Prerequisites ES 131 and 132 plus six additional hours in earth science or geology. Must be a science major. Each course may be repeated up to a total of three hours for each course. (Fall, Spring, Summer)

Course Fees: \$30