

SYLLABUS
EES 341 LEHIGH FIELD CAMP (6 CREDITS)
SUMMER SEMESTER 2017
30 MAY – 03 JULY

Director: Dr. Claudio Berti; Department of Earth and Environmental Sciences, 576 STEPS, Phone: 610-758-2581; clb208@lehigh.edu.

Instructors: Dr. David J. Anastasio, Dr. Frank J. Pazzaglia, Dr. Nathan Hopkins

Staff: Three TAs, quartermaster, camp commissary.

Prerequisites: Introduction or gateway course to Earth and Environmental Sciences (Physical Geology, Intro to Environmental Science or equivalent), Earth Materials (Mineralogy, Petrology), Structural Geology, Sedimentology-Stratigraphy, Ecology, Hydrogeology, or equivalents. Deficiencies handled by petition.

Texts: Geological field techniques, Coe, ISBN: 978-1-4443-3062-5 Paperback 336 pages, November 2010, Wiley-Blackwell. US \$59.95.

Scope: Synoptic, capstone field experience for geology and Earth science majors. Instruction on how to make, read, and interpret geologic maps and how to envision field problems and collect environmentally diagnostic data. Using of the field, field geologic relationships, and the concepts of geological mapping and environmental data as the vehicle towards development of a professional earth and environmental scientist.

Format: Several multi-day, multi-partner field mapping projects, instructed by one or more faculty, and one or more staff. Projects contain an in the field team component, and a map drafting and writing individual component.

Skills: Geology of North America, Glacial geology of the mid-west, collection and interpretation of structural data, lithologic descriptions, note taking, basic and advanced stratigraphic concepts, sequence stratigraphy and basin analysis, stratigraphic section measurements, geologic mapping and cross sections, surface and near surface hydrology, concepts of ecology and paleo-ecology, metamorphic and igneous petrology, recognition and interpretation of faults and folds in the field, electronic mapping, GPS, GIS, concepts of economic geology.

Grading: Grades are based on the quality of projects produced during three main integrated exercises, several smaller exercises, a stratigraphic measuring exercise, synthesis of map and environmental data, and exercises during the cross-country trip. The breakdown is:

Cross country trip, landscape evolution, notebook	10%
Badlands intro map	5%
Strat section and sequence stratigraphy exercise	10%
Bighorn Basin (basic mapping and simple structure)	25%
Yellowstone (volcanic rocks and active tectonics)	5%
Idaho (surficial processes)	25%
Idaho (crystalline rocks and block diagram)	10%
Camp participation, group leadership, attitude	10%