

## University profile

UALR is a metropolitan university with more than 13000 full- and part-time graduate and undergraduate students. The average student is older (23 to 28), and many students work full- or part-time away from campus. UALR is largely a commuter college, though there are ongoing efforts to increase the residential population and the number of traditional entering freshman.

## Earth Sciences profile

The UALR Earth Sciences Dept. currently has 5 full-time faculty members (down from 6 in 2009-10). We offer a Bachelor of Science in Geology with Geology or Environmental Geology minors. For teacher secondary licensure, students can major in Geology and minor in Secondary Education. The department also offers graduate-level courses and a Graduate Certificate in Geospatial Technology. We have approximately 50 geology majors and, on average, graduate 4 students per year. Four of the faculty members conduct field-based research involving undergraduate and graduate (masters-level) students, incorporate field instruction or exercises into their courses, and contribute to the core field courses in the undergraduate geology curriculum.

## Motivation and Challenges

The UALR Earth Sciences Department values field-based teaching and research experiences for our students. Furthermore, many area employers such as the USGS, Arkansas Geological Survey, and Southwestern Energy, expect their employees to work in the field. We incorporate field experiences into our introductory classes that include at least one outdoor laboratory exercise (e.g., streamflow measurement, pace and compass mapping) and an optional half-day field trip to local sites of geologic interest. Most of our majors courses involve field-based laboratory exercises, one-day and weekend field trips, or semester-long field-based class research projects.

However, many of our students have life situations such as families and full-time jobs that prohibit them from leaving the area for long periods of time. To ensure that we provide our graduates with enough field experience, we now (as of 2009) offer two required, 3-credit, field-based courses that together represent the breadth, depth, and variety of settings that a traditional 6-week geology field camp provides. This approach helps us keep costs relatively low for our students and make more efficient use of our faculty time. It has increased our graduation rates because we eliminated one of the major financial and logistical barriers to the completion of the geology major. Our approach also allows us to develop key geologic skills and good field practices earlier in the undergraduate experience, thus allowing a greater integration field experiences, techniques, and concepts throughout the entire geology major.

## Field Geology I (ERSC 3320)

A semester-long course offered every spring semester that is designed for sophomore- and junior-level geology majors. It is envisioned as a gateway course to the geology major, and students are expected to build field skills and other basic geological skills that will be used in other majors courses.

## Field Geology II (ERSC 4320)

A three-week summer course based in Colorado and New Mexico with a focus on bedrock mapping and geological interpretation. Offered in July 2009 (16 students) and July 2010 (13 students).

## Field Geology I (ERSC 3320)

### Course goals:

1. Develop basic geologic field skills and good practices
2. Develop research and writing skills
3. Gain geologic field experience using a variety of techniques in a variety of settings
4. Learn to cooperate and work in the field with fellow geologists
5. Build confidence in making geologic observations and interpretations

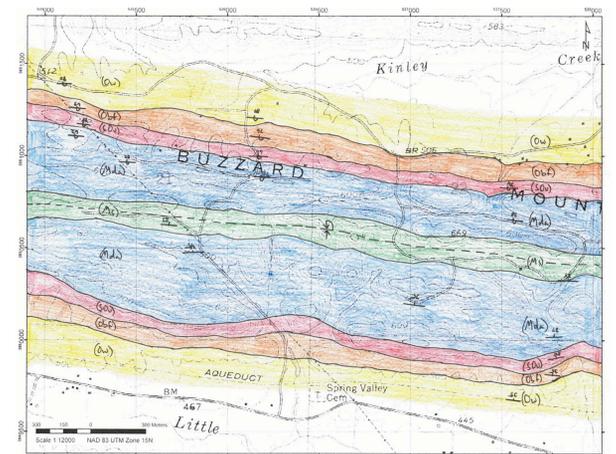
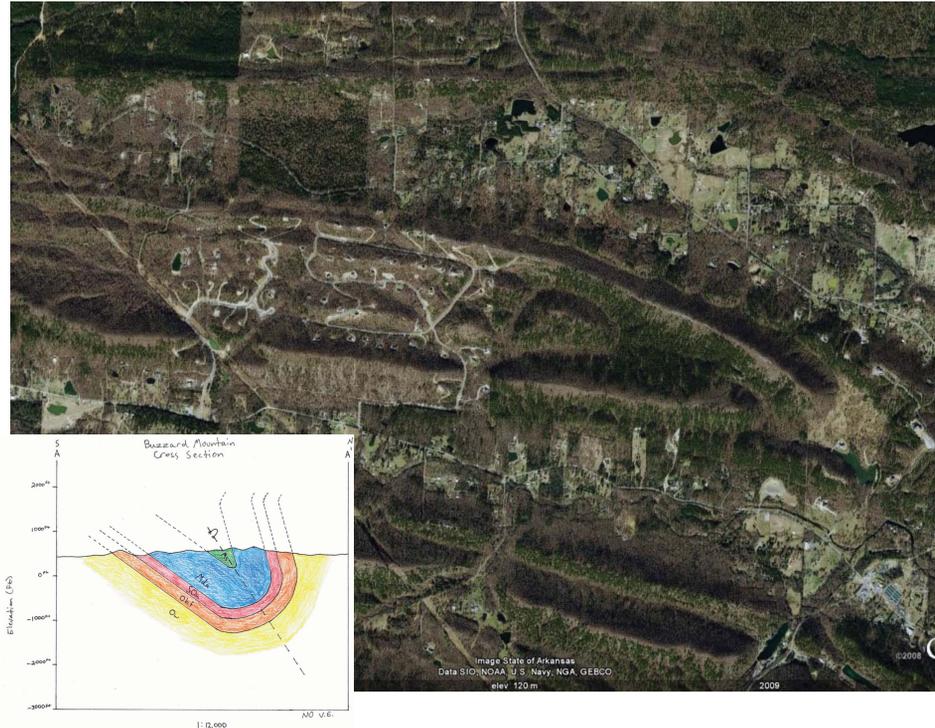
### Course exercises:

- Pace/compass map - campus
- GPS map - campus
- Outcrop description and sketch - local roadcuts
- Stratigraphic measurement and interpretation - local roadcuts
- Aerial photo interpretation and cross-section construction - Bayou Meda anticline north of Little Rock

### Major semester projects:

- Literature review and research paper on Ouachita Mountains w/ peer review

UALR ERSC 3320: Field Geology I Mapping project locality, Buzzard Mountain, Arkansas



- Geologic map and cross-section of Buzzard Mountain, Arkansas
- GSA-style poster presentation of stratigraphy, geologic map and cross-section, and regional synthesis w/ peer review

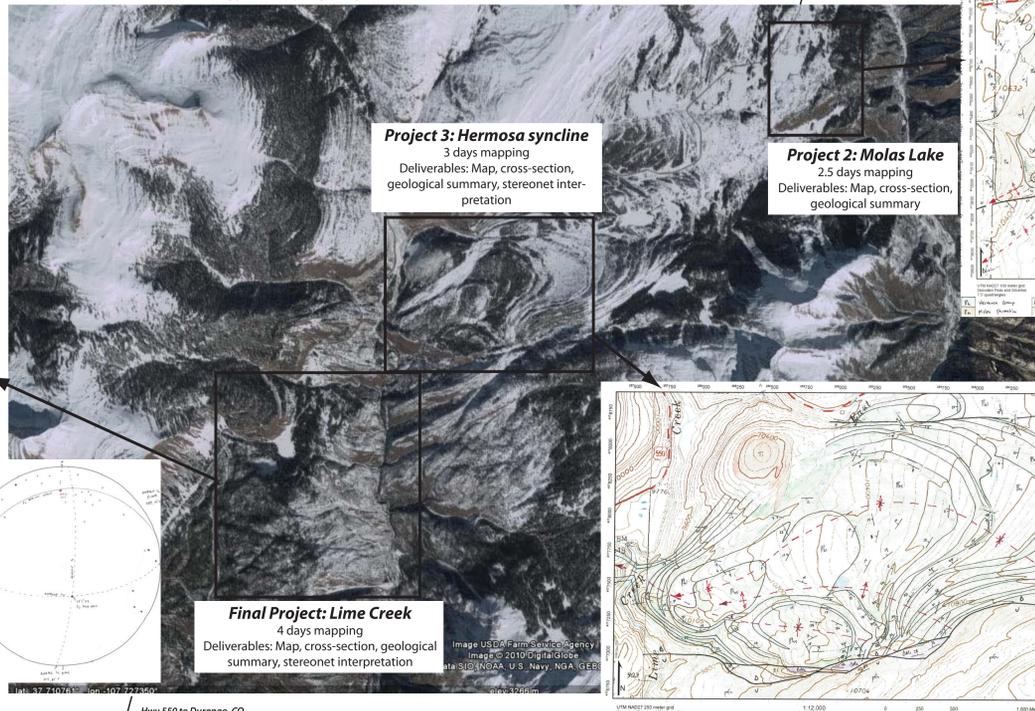
## Field Geology II (ERSC 4320)

### Course goals:

1. Develop geologic field skills and good practices
2. Build confidence in making geologic observations and interpretations
3. Gain geologic field experience using a variety of techniques in a variety of settings
4. Learn to cooperate and work in the field with fellow geologists
5. Apply concepts from majors courses to aid interpretation

This course replaces the traditional 6-week field camp that was previously required but not offered by our department. The 3-week format helps to accommodate our students with job and family commitments. When combined with our 3-credit Field Geology I course, our students receive field instruction and experience that is roughly equivalent to a 6-week field camp but that is integrated throughout their undergraduate career.

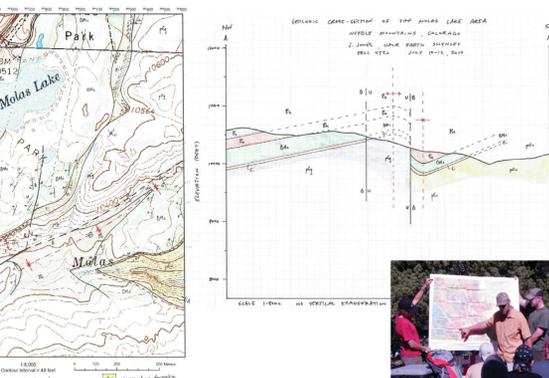
UALR ERSC 4320: Field Geology II Mapping project localities, Needle Mountains, Colorado



**Project 3: Hermosa syncline**  
3 days mapping  
Deliverables: Map, cross-section, geological summary, stereonet interpretation

**Project 2: Molas Lake**  
2.5 days mapping  
Deliverables: Map, cross-section, geological summary

**Final Project: Lime Creek**  
4 days mapping  
Deliverables: Map, cross-section, geological summary, stereonet interpretation



Project 1 - Dune morphology, Great Sand Dunes N.P., CO

