Spring 2020

Geology of Black Mesa
Geological Field Investigation
OSU Stillwater – OSU-CHS
GEOL 4030 / 5030

Informational Session
17 January 2020
Dates: 16-20 April 2020 (Thursday – Monday)
- 2 travel days, 3 field days
Location: Black Mesa State Park and environs, Oklahoma Panhandle
1 hour course credit
- GEOL 4030 – undergraduate students
- GEOL 5030 – graduate students
Topics:
- Paleontology, Stratigraphy, Structure, Geomorphology, Economic geology
Pre-requisite:
- BPSoG undergraduate or graduate students in good standing or permission of instructors
Finances

• $450/student (estimate) – lower with higher enrollment
• Enrollment
  • Minimum: 8 students
  • Maximum: 15 students
• Includes:
  • Round trip transportation Stillwater/Tulsa – Black Mesa State Park by 15-passenger van
  • Accommodation – 4 nights Black Mesa State Park
  • Meals – Breakfast, lunch, and dinner (4 each)
  • Supplies
• $100 deposit due by 30 January 2020
Instructors

• Dr. Ashley Burkett – Assistant Professor
  OSU Stillwater – Boone Pickens School of Geology

• Dr. Anne Weil – Associate Professor
  OSU Center for Health Sciences
  School of Biomedical Sciences
  Department of Anatomy and Cell Biology

• Dr. James Knapp – Boone Pickens Distinguished Chair
  OSU Stillwater – Boone Pickens School of Geology
Group Camp – Black Mesa State Park

- Northern end of park
- Includes:
  - Bunkhouses
  - Full kitchen
  - Dining hall
  - Bath house
  - Covered picnic area
  - Outdoor grill
Accommodations
Kitchen
Dining Facilities
Bath House

- Separate Women’s and Men’s facilities
- Showers (6), toilets, sinks
- Doubles as severe weather shelter
Stratigraphy / Structure

• Kenton quadrangle
• Best, well-exposed Mesozoic section in Oklahoma
• Triassic, Jurassic, and Cretaceous sections represented
• Major unconformities and lithologies document dramatic environmental changes

• Previously unrecognized faults?
Paleontology

- World-famous dinosaur locality
- Extensively excavated in the 1930’s
- Specimens of Apatasaurus, Stegosaurus, Saurophaganax, and Morrison Basin fauna extracted
- Active excavations every summer are led by Dr. Weil

Geomorphology

- Arid, High Plains environment
- Mesa topography
- Black Mesa – highest point in Oklahoma at 4,973 feet (1,507 m)
- Pliocene basalt flow caps mesa
- Volcanic center in SE Colorado
# Provisional Course Schedule

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Assignment</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informational Session</td>
<td>Jan 17th 3:30pm NRC 001</td>
<td>Trip Deposit</td>
<td>End Jan</td>
</tr>
<tr>
<td>Pre-Trip Meeting</td>
<td>Feb</td>
<td>Lecture, Canvas Assignment- Field Safety</td>
<td>March 1st</td>
</tr>
<tr>
<td>Pre-Trip Meeting</td>
<td>March</td>
<td>Lecture, Canvas Assignment- Geology/Black Mesa Background</td>
<td>April 1st</td>
</tr>
<tr>
<td>Travel Day</td>
<td>April 16th</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Field Day 1</td>
<td>April 17th</td>
<td>Stratigraphy, Geomorphology,</td>
<td>Turned in at camp after dinner</td>
</tr>
<tr>
<td>Field Day 2</td>
<td>April 18th</td>
<td>Paleontology</td>
<td>Turned in at camp after dinner</td>
</tr>
<tr>
<td>Field Day 3</td>
<td>April 19th</td>
<td>Black Mesa Hike, Culmination Exercise</td>
<td>Turned in at camp after dinner</td>
</tr>
<tr>
<td>Travel Day</td>
<td>April 20th</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>
Interested?

• Need to schedule an appointment with CAS Outreach Program Coordinator Mr. Shane O’Mealey
  • shane.omealey@okstate.edu
  • 405-744-8462
  • 213E Life Sciences East

• After signing appropriate paperwork, $100 deposit will be added to your bursar account

• Refundable only if course does not take place

• Waiting list will be established as appropriate
THANK YOU!

Drs. Burkett, Weil, and Knapp

• Phone

ashley.burkett@okstate.edu
anne.weil@okstate.edu
james.knapp@okstate.edu