Cave Archaeology
June 1-6, 2015
GEOG 475, GEOS 510
Summer 2015

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Course Description:
The Cave Archaeology course is an opportunity for graduate students, undergraduate students, and interested cavers to explore and learn about the multifaceted use of caves by people in prehistory and during historical times. Over the course of the week-long class, eight field trips are taken to various sites above and below ground. Five of these trips are to remote or deep cave locations and three of the trips are to cave entrances and rockshelters, linking the underground world to the environment above. Students learn about the many cave resources that were used by people in the past, such as chert, gypsum, mineral salts, and nitrates, and the technology of cave mineral mining. Caves are discussed as both natural features of the environment utilized by people in the past and as features with cosmological significance that were incorporated into native belief systems, including human burial sites, rock art, and other ritual uses.

Course Objectives:
- To introduce students to the prehistory of Mammoth Cave National Park and surrounding areas with special emphasis on aboriginal and early historic use of caves and rockshelters.
- To learn about the unique contribution of cave sites to our understanding of eastern North American prehistory from preservation issues to geological formation processes.

- Gain an appreciation for conditions in caves that affect the application of archaeological methods and techniques and have an opportunity to apply those techniques in a cave setting.

Required Text, Equipment, and Supplies:

A. Cave Archeology – Manual and CD of course material, reports, and articles covered in class. (Provided by WKU.)

B. Recommended text: Much of the pertinent background material will be included in the WKU manual. Additional readings that you may find useful (prior to course, as reference during course, and for assistance with field project after course):

1. Watson, P.J. (editor), 1997, *Archaeology of the Mammoth Cave Area*. Dayton, Ohio: Cave Books. (http://www.cavebooks.com)
2. Watson, P.J., 1969, *The Prehistory of Salts Cave, Kentucky.* Illinois State Museum Report of Investigations No. 16, Springfield. (http://www.cavebooks.com/)
3. De Paepe, D. 1985, *Gunpowder from Mammoth Cave: The Saga of Saltpetre Mining before and during the War of 1812*. Cave Pearl Press, Hays, Kansas. (Available as a 2013 reprint from Cave Books).

C. Equipment and Supply List:

1. **Helmet** (for caving trips) with non-elastic chinstrap, a quick release buckle, and three or four point mounting. The helmet should stay on during a fall but be easily released if it should become wedged. The helmet will also be the mounting point for your primary light source, so any accommodation for attaching a headlamp is a plus.
2. **Two (2) lights that can be helmet mounted**. REI or other outdoor outfitters carry suitable lights for caving. Bring extra batteries
3. **Flashlight** with extra batteries and extra bulb (ex. mini-mag lite)
4. **Sturdy boots with non-skid soles** (comfortable, hiking type, waterproof or water resistant is good).
5. **Caving coveralls are ideal, but a suitable alternative is rugged clothing** that can withstand outdoor activity. These include comfortable pants or jeans that you can afford to get dirty. To keep you warm in the 56° F, almost 100% humidity, underground environment you'll need to dress in layers. It's strongly advised that you have a thermal layer top (polypro or equivalent – NO COTTON) and a bottom. If you are not using coveralls, then a long sleeve shirt is strongly recommended. You will be underground most days so be prepared with some clean changes of clothes. There will not be enough time to do laundry every day.
6. **Gloves** (garden type is ok, to protect hands and for gripping)
7. **Knee pads** (These are very helpful in protecting your knees). Basketball or other athletic-type kneepads are good.

8. **Small to moderate size daypack** to hold batteries, jacket, clothing, supplies. A large backpack will be too bulky for narrow cave passages.
9. **Water Bottle** (fill before going on trips, to keep hydrated)
10. **Snack foods suitable for long underground hiking trips–** such as granola-type bars, small cans of fruit, dried fruit, trail mixes, beef or other jerky – similar to what you would take on a long day hike on the surface.
11. **Rain Gear** (prepare layers of clothing for severe weather, umbrella, rain jacket)
12. **Food** (If staying at Hamilton Valley Facility, it has a fully equipment kitchen.)
13. **Bedding** (If staying at HV-sleeping bag or sheet and blanket, and pillow). Hamilton Valley has 10 rooms with 4 bunks each.
14. **Toiletries and Towels** (HV has fully functioning bathrooms and showers)

Attendance:

Participants are expected to attend all presentations, field exercises, and field trips. Exceptions may be made for sections of field trips considered too strenuous by individual participants. **All participants will receive a Certificate of Participation on the last day of the class for their full participation in the class. This does not constitute the final grade for those taking the course for credit.**

Grading:

This course may be taken as a non-credit workshop, or for graduate or undergraduate academic credit. Continuing Education Credits may also be awarded for this course. Independent study projects are required for final grading.

For those taking course for academic credit, a report on an independent field project is required. Students will need to remain in contact with the instructor for guidance. Deadline for written reports is August 31, 2012. Grading of project is based on the insight and quality of work that it demonstrates, with some accommodation for those with limited background.

The final project report will constitute 70% of the final grade. Field exercises and class discussion constitutes the remaining 30%. A standard 10-point grading scale will be used for this course: A "F" will also be awarded if the final project is NOT submitted by the aforementioned deadline.

Percentages	90-100	80-89	70-79	60-69	0-59
Grade	**A**	**B**	**C**	**D**	**F**

General Class Conduct and Policies:

During class periods, cell phones should be turned off and smoking is not allowed. Obey all park rules especially speed limits while traveling through the park. While in

cave, safety and conservation are primary concerns. Do not leave the visitor trail unless permitted to do so by the instructor. No moving or collecting artifacts at any time. We will move slowly and carefully to minimize danger and impact on the cave when traveling through undeveloped cave passage. Be especially mindful of artifacts on the cave floor that can be easily damaged by foot traffic.

Field Trips:

NOTE: All participants for the Karst Field Studies must sign a WKU Liability Waiver form and give a copy of their medical insurance card for all field trips.

1. Mammoth Cave Historic Entrance to Violet City; Carmichael Entrance to Cleaveland Ave. Developed trails, partially lit by electric lights. Will need helmet and light for unlit portion (5 hrs).
2. Salts Cave Vestibule to Mummy Valley. Undeveloped cave passage; full cave gear required (6.5 hrs, bring lunch and snack.)
3. Owl, Crumps, and Sand caves. Short surface hikes to Owl Cave, which is a karst window in Cedar Sink; to Crumps Cave, which is a large sinkhole entrance; and to Sand Cave where Floyd Collins was trapped in 1925. We'll conduct an exercise in the Crumps Cave entrance area recording surface observations (6.5 hrs including lunch and drive time. Bring lunch.)
4. Floyd Collins Crystal Cave. Developed trail, but will need helmet and light. Brief vehicle stop at Mammoth Cave Baptist Church cemetery (2 hrs).
5. Blue Spring Hollow. A long surface hike to a sandstone rockshelter and bluff line. The environment on the north side of the Green River is very different from the cave region south of the river (5 hrs including lunch and drive time. Bring lunch).
6. Mammoth Cave Saltpeter Mining Remains and Historic Tour route. Historic Tour route with a short side trip into Gothic Ave. We'll pay particular attention to the saltpeter remains and evidence of historic visitation. Developed trails with electric lights (3 hrs).
7. Lower Mammoth Cave. Historic Entrance to Ganter, Lee's Way to Black Chambers, and Wright's Rotunda . Undeveloped passage, with some climbing and crawling. Full cave gear required. (6 hrs, bring lunch and snack.)

Class Schedule/Agenda:

Sunday May 31	7:00pm-9:00pm	Class meets at Hamilton Valley Field Station. Welcome, introductions, and brief overview.
Monday June 1	8:00am-10:00am 10:00am-10:15am 10:15am-12:00pm 12:00pm-1:00pm	Lecture: Introduction to Cave Archaeology Break Lecture: Archaeology of the Mammoth Cave Area Lunch

	1:00pm-6:00pm	Field Trip: Mammoth Cave Historic Entrance to Violet City and Carmichael Entrance to Cleaveland Ave. (with breaks).
	6:00pm-8:00pm	Supper
	8:00pm-10:00	Time for reading and informal discussion.
Tuesday	8:00am-10:00am	Lecture: Ceremonial Uses of Caves
June 2	10:00am-10:30am	Break
	10:30am-5:00pm	Field Trip: Salts Cave Vestibule to Mummy Valley (with breaks, take lunch).
	5:00pm-7:00pm	Supper
	7:00pm-10:00pm	Time for reading and informal discussion.
Wednesday	8:00am-10:00am	Discussion: Readings and activities to date.
June 3		Background information on surface archaeology.
	10:00am-10:30am	Break
	10:30am-1:00pm	Field Trip: Stop 1: Cedar Sink, Owl Cave (take lunch).
	1:00pm-4:00pm	Stop 2: Crumps Cave Sink and Vestibule (with break). Exercise in field mapping and recording.
	4:00pm-5:00pm	Stop 3: Sand Cave
	5:00pm-7:00pm	Supper
	7:00pm-9:00pm	Field Trip: Floyd Collins Crystal Cave and Mammoth Cave Baptist Church cemetery
Thursday	8:00am-1:00am	Field Trip: Blue Spring Hollow (take lunch)
June 4	1:00pm-2:00pm	Break at Hamilton Valley
	2:00pm-4:00pm	Lecture: History of Saltpeter Mining and Early Tourism
	4:00pm-6:00pm	Supper
	6:00pm-9:00pm	Field Trip: Mammoth Cave Historic Tour route
Friday	9:00am-10:30am	Discussion and Review
June 5	10:30am-11:00am	Break
	11:00pm-5:00pm	Field Trip: Lower Mammoth (with breaks, take lunch)
	5:00pm-7:00pm	Last Supper
	7:00pm-8:00pm	Summary and class evaluation.
Saturday	Morning	Students taking course for credit, individual
June 6		meetings to finalize topic for class project.