



Exploration of Mammoth Cave

June 7-12, 2020

GEOG 475, GEOL 475, and GEOS 510

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Course Description: This course is an intensive study of the exploration of Mammoth Cave, with a special emphasis given to the explorers, their discoveries, their motivations, and the incorporation of caves and karst features into the world's longest cave system. Illustrated lectures, maps, photographs, and first-hand accounts of discovery will be used to promote understanding of the caves prior to daily field trips. Many underground trips will follow tourist trails closed long ago to the public, while other trips will require more strenuous walking and crawling in undeveloped passages on trips lasting 6-8 hours. Participants must be in good physical condition.

Participants who are taking the course for undergraduate credit must complete an independent research report, to be submitted to instructors within 2 weeks of course completion. Research reports may be conducted on a variety of topics related to cave exploration and do not need to be specific to Mammoth Cave

Course Objectives: This course is intended to introduce students to the history of cave exploration at Mammoth Cave. The course topics will focus on the exploration of the world's longest cave during different time periods and will be covered in chronological order (for the most part). Content will be covered in both a classroom setting and in the field. Classes will begin and conclude daily at the Cave Research Foundation's Hamilton Valley Research Station.

Need to Know: Much of this course will take place in the field, meaning extended cave trips to remote sections of Mammoth Cave. Participants should be prepared for physically strenuous trips and 5-8 miles of walking in the cave daily. To reach areas of interest, the class will be traveling long distances on and off established tour trails, as well as through passages that may

require crawling, climbing, bouldering, or other methods of moving safely off trail. Participants are expected to provide their own caving equipment: helmet, 3 sources of light (to include a headlamp), sturdy boots (lace up, aggressive tread), kneepads, gloves, and cave pack. It is strongly suggested that participants be in good physical condition. Water, food, and first aid supplies are strongly suggested for extended cave trips. Several trips will require that we eat lunch in the cave. Participants should be prepared for lunch in the field and be prepared to remove any and all trash. We will leave no trace! Finally, if nature should call while underground, participants should be prepared with a means of removing any and all waste from the cave as well.

Expectations: Due to the amount of course content that will take place in the field, participation in all class activities is a must. Participants that are enrolled in the course for college credit must participate in all course activities to receive credit – no exceptions! It is strongly recommended, that all participants eat breakfast each morning so we can avoid cavers “burning out” in the cave.

Participants are also required to follow all safe caving practices!

Our first priority in caving is safety. We will not tolerate cavers who are not following instructions and putting their safety or the safety of others at risk.

Our second priority is resource protection. We have been given a unique opportunity to visit places in Mammoth Cave that very few will ever get the opportunity to see. We will take every precaution to protect all cave resources and to have as little impact on the cave as possible. Once again, we will have zero tolerance for participants who are not respecting the resource protection policy.

Our third priority (and the purpose of this course!) is education. We fully expect to have a great time together this week. Caving is one of the most enjoyable things in the world. We will all meet new people and make new friends this week. We must remember why we are here – to learn about the awesome history of exploration at Mammoth Cave! Have a great time this week, just remember why we are here!

Required Text:

- Manual of course material, reports, and articles covered in class to be provided by WKU at the start of the course.

Suggested Readings:

The Longest Cave – Roger W. Brucker and Richard A. Watson

The Caves Beyond: The Story of The Floyd Collins’ Crystal Cave Exploration – Joe Lawrence, Jr. and Roger W. Brucker

Beyond Mammoth Cave: A Tale of Obsession in the World’s Longest Cave – James D. Borden and Roger W. Brucker

The Kentucky Cave Wars: The Century That Shaped Mammoth Cave National Park – David R. Kem

The Mammoth Cave of Kentucky – Horace Carter Hovey and Richard Ellsworth Call
Rambles in the Mammoth Cave – Alexander Clark Bullitt

Equipment and Supply List:

Note, to avoid potential transmission of white-nose syndrome to bats in the cave, the Park Service requires that clothes and equipment used in one part of Mammoth Cave be thoroughly cleaned before being used in another part. Our schedule changes from Mammoth during the first 3 days to Flint Ridge during the last 3 days. A disinfectant will be available to treat helmets and equipment, but for cave clothes it is easier to change to fresh items kept in a separate sealed plastic bag. White-nose syndrome has been identified in Mammoth Cave National Park, but it is still necessary to follow these precautions. WNS, caused by a fungus, is fatal to hibernating bats but does not affect humans. For details, visit www.caves.org and click on WNS.

1. **Helmet** (for caving trips) with non-elastic chin strap, quick-release buckle, and three- or four-point suspension. 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-Maglite)
4. **Sturdy boots with non-skid soles** (comfortable, hiking, 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 is strongly advised that you have a thermal layer top (polypro or equivalent) 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 each 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 knee pads are good.
8. **Small to moderate size day-pack** 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** (layers of clothing for severe weather, umbrella, rain jacket, etc.)
12. Food if you are staying at Hamilton Valley Facility, which has a fully equipped kitchen, showers and restrooms.

13. Bedding (If staying at Hamilton Valley -sleeping bag or sheet or blanket, pillow).
Hamilton Valley has 10 rooms with 4 bunks each.
14. Toiletries and Towels (If staying at HV—Towels, toothbrush, toothpaste, shampoo, etc).

Attendance: Students are expected to participate in all classes and field trips, except under special conditions (e.g., health). Field trips involve easy to moderately challenging caving. In the rare circumstance that students are unable to fulfill the field requirements they will be invited to drop the course. In general the rigor of the trips are adjusted to the abilities of the class. **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 academic credit.**

Grading: Courses can be taken as non-credit workshops, Undergraduate and Graduate credit, or for Continuing Education Units. For those taking the course for academic credit, a report on a two-week independent field project is required. Students will need to remain in contact with the instructor for guidance. Deadline for written reports is two weeks after the course is complete. Project grading is based on the insight and quality of work demonstrated, with some accommodation for those with limited background.

Grade Scale (based mainly on project, but weighted according to participation in class):

- A = equivalent to the finest work that is expected of a student at this level
- B = good work, but with a few flaws in procedure and interpretation
- C = average work
- D = poor work, sloppy presentation
- F = no redeeming features, or failure to turn in project by deadline

General Class Conduct and Policies: During class periods, cell phones should be turned off and smoking is not allowed. While in cave, safety and conservation are primary concerns. We will move slowly and carefully to minimize danger and impact on the cave. On the surface, especially in the National Park, it is essential to drive carefully and to obey the speed limit. Beware of snakes, ticks, chiggers, and poison ivy. ** Cell phones should be turned off during class! ** Please treat your colleagues and their desire to learn with appropriate respect.

ADA Statement: Students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the Director of the Karst Field Studies Program, Dr. Leslie North at leslie.north@wku.edu or (270) 745-5982 so proper accommodations can be considered and made as necessary.

Schedule Change Policy: The Department of Geography and Geology strictly adheres to University policies regarding schedule changes. It is the responsibility of the student to meet all

admissions deadlines. Only in exceptional cases will a deadline be waived (you will be required to fill out an appeal form). The form requires a written description of the extenuating circumstances involved and the attachment of appropriate documentation. Poor academic performance, general malaise, or undocumented general stress factors are not considered as legitimate circumstances.

Tentative Class Schedule/Agenda

Subject to Change

Sunday – Meet & Greet

6:00 PM Meet at the Conference Room at Hamilton Valley to meet your instructors and fellow participants, as well as representatives of Western Kentucky University, Mammoth Cave National Park, and the Cave Research Foundation. We will spend 1-2 hours introducing ourselves, preparing participants for the coming week, orienting everyone to Hamilton Valley, Mammoth Cave National Park, and the surrounding area, and addressing any questions and/or concerns. This will also provide participants that have arranged to stay at Hamilton Valley the opportunity to check into their rooms.

The Meet & Greet is mandatory for all participants – not just for those staying at Hamilton Valley! By addressing questions/concerns, gear-related issues, etc. on Sunday night, we can avoid dealing with these issues on Monday and delaying cave trips.

Monday – Introduction to Exploration and Early Explorers of Mammoth Cave

8:00 AM Introduction to the Geology and Nature of Mammoth Cave
9:00 AM A Very Quick History of Mammoth Cave
9:30 AM Aboriginal Exploration of Mammoth Cave
10:00 AM Cave Trip w/lunch in the cave
5:00 PM(ish) Recap of Day's Trip

Tuesday – The Roots of Modern Exploration

8:00 AM Early 19th Century History: Millers, Gatewoods, and Others
9:00 AM Slave Guides of Mammoth Cave: Stephen Bishop, Bransfords, etc.
10:00 AM Cave Trip w/ lunch in the cave
5:00 PM(ish) Recap of Day's Trip

Wednesday – Exploration During the Cave Wars Era

8:00 AM Late 19th & Early 20th Century History: Bransfords, William Garvin, etc.
9:00 AM Kentucky Cave Wars
10:00 AM Cave Trip w/lunch in the cave
5:00 PM(ish) Recap of Day's Trip

Thursday – The Park Years and the Push for the Longest Cave

8:00 AM C-3, NSS, Austin & Pohl, CRF, & the 1972 Connection
9:00 AM Cave Trip w/lunch in the cave
5:00 PM(ish) Recap of Day's Trip

Friday – Modern Exploration of Mammoth Cave

8:00 AM Cave Research Foundation, NPS, Roppel, and Current Exploration of Mammoth Cave

9:00 AM	Cave Trip w/lunch in the cave
5:00 PM	Recap of Day's Trip & Closing of the class.
6:00 PM	Dinner and Celebration!