2008 KARST FIELD STUDIES PROGRAM

Sponsored by The Center for Cave and Karst Studies
Hoffman Environmental Research Institute
and Mammoth Cave National Park International Center for Science and Learning

Western Kentucky University, through the Center for Cave and Karst Studies and in cooperation with Mammoth Cave National Park, offers a series of one-week summer courses/workshops focusing on caves, karst, and cave exploring. While some require previous subject knowledge, some are designed for those with merely an interest in caves. These intense courses combine formal lectures with field observations and techniques. Many of the courses involve strenuous trips into rarely visited portions of Mammoth Cave. However, a few courses are more surface-oriented and less physically demanding. Most of the courses last for seven days at Mammoth Cave and may be taken for three semester hours of undergraduate or graduate credit or as a workshop. Credit students are required to complete an independent research project after returning home. Workshop status eliminates the independent research project. Students must be high school graduates and in good physical condition. Enrollments are restricted in order to ensure small classes. Since some courses fill early, students are encouraged to register as soon as possible. Students from various parts of the U.S. and several foreign countries have participated in the program. Participants have included undergraduate and graduate students, geologists, hydrologists, engineers, college professors, and individuals desiring an educational and exciting vacation experience. Environmental consulting firms, state agencies, commercial cave owners, the National Park Service, and universities have paid tuition for employees enrolling in these courses.

1. Cave Ecology -

Mammoth Cave, KY

June 1-7, 2008

Dr. Horton Hobbs III

Caves and other subterranean voids are unique in that they lack light and, therefore, most are not capable of producing food. Consequently, these dark, energy-poor, extreme environments impose a suite of restrictions on organisms cave fauna as well as the evolution of cave-adapted organisms. We shall examine the cave productive surface world on the dark, consumptive cave environment. Morning sessions will be interactive lectures and afternoons and most evenings will be spent in the field, observing surface and subsurface ecosystems of the Mammoth Cave System. Small group mini-projects will be conducted utilizing the scientific method to test hypotheses related to the ecology of caves. A "symposium" will be presented. Participants should be in good physical condition and prepared for strenuous activity above and below ground throughout the week.

Registration: Graduate, Undergraduate, or Workshop

2. Karst Geomorphology -

Mammoth Cave, KY

June 8-14, 2008

Dr. Darryl Granger with Joe Meiman

This course will be an intensive study of karst landscapes and will emphasize current thinking on the processes at work shaping them. We are fortunate to have as our laboratory one of the great karst landscapes of the world, and we will, therefore, be in a unique position to gain a deep appreciation of these fantastic landscapes through a combination of field and classroom study. The new view of the landscape provided by such a study can be profoundly enriching, and indeed enhance the karst experience. Because caves are a major element of the karst landscapes, both in terms of process and of form, their origin and morphology will be a major emphasis. Accordingly, we will spend a significant part of the week underground in the Mammoth Cave System as well as other caves. At least one previous course in geology is required, although appropriate concepts will be reviewed. The course will involve strenuous cave trips and hiking; therefore, participants must be in excellent physical condition.

Registration: Graduate, Undergraduate, or Workshop

3. Exploration of Mammoth Cave -

Mammoth Cave, KY

June 8-14, 2008

Dr. Stanley D. Sides

This course is an intensive study of the discovery, exploration and development of the caves and karst features of the Mammoth Cave region that resulted in integration of the caves into the world's longest cave system. The forces that stimulated exploration, such as saltpeter mining, regional commercialization of show caves, national park development, and scientific research are examined. Illustrated lectures, handouts, and maps are used to promote understanding of the caves prior to daily field trips. Many underground trips follow tourist trails closed long ago to the public, while other trips require strenuous walking and crawling in undeveloped passages on trips lasting 6-8 hours. This year the course will emphasize recent research on the history of the many regional show caves that competed with Mammoth Cave after the end of the Civil War. Usually the class repeats of the connection routes made by previous explorers between one entrance and another in Mammoth Cave. Participants must be in good physical condition.

Registration: Undergraduate, or Workshop

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4. Karst Hydrology -

Bowling Green, KY

June 16-21, 2008

Dr. William White and Dr. Nicholas Crawford

The hydrology of karst terrains is taught from the perspective of integrated drainage basins. Discussion addresses karst landscapes, the hydrogeology of karst aquifers, caves and their importance as records of paleohydrology, karst water chemistry and its use in the analysis of flow systems, water balance, and the physical environmental problems in karst. The course deals with groundwater monitoring techniques, groundwater tracers, and the movement of contaminants through karst aquifers. Field exercises include qualitative and quantitative dye trace tests, and as techniques for locating caves for drilling monitoring wells in karst aquifers. A primary objective of this course is to provide "state-of-the-practice" instruction and "hands-on" experience for dealing with groundwater problems of karst regions. Most participants in this course are professional geologists and engineers employed by environmental consulting firms or government agencies who take the course as a workshop. However, undergraduate and graduate students also take the course for credit.

Registration: Graduate, Undergraduate, or Workshop

5. Speleology -

Mammoth Cave, KY

June 15-21, 2008

Roger Brucker

Not just an introductory caving course, Speleology delves into the basics in cave science that lead to insight and understanding essential in making discoveries. It is an experience in which extensive cave trips tie together hydrology, geology, biology, and ecology by the use of discovery techniques such as exploration and cave surveying. These tools and techniques such as used by the Cave Research Foundation in the exploration of the world's longest cave, allow participants to understand caves anywhere and to make significant discoveries of their own. Field trips are strenuous, involving long trips into rarely visited portions of the cave system, including making connections between caves as described in The Longest Cave. Participants must be in excellent physical condition, however, no prior caving experience is required.

Registration: Undergraduate, or Workshop

6. Cave Surveying and Cartography & GIS -

Mammoth Cave, KY

June 15-21, 2008

Pat Kambesis

Cave maps and inventories are fundamental to the understanding of cave and karst environments. This course will focus on in-cave data collection (with an emphasis on sketching), cave resource inventories, constructing survey data/inventory databases, creating maps and transforming the data maps into GIS format. Techniques for collecting cave survey and inventory databases will be examined with emphasis on obtaining the most useful data in the field. Surface geophysical techniques pertinent to locating and mapping caves

Registration: Graduate, Undergraduate, or Workshop

7. Cave and Karst Resource Management -

California

June 15-21, 2008

Joel Despain and Dr. Rick Toomey

This intensive course includes practical and hands-on instruction concerning cave management practices. AKA, 'cave specialist 101." It is designed for state and federal land managers, private preserve managers, and members of cave conservancies. The class will include three field trips to examine relevant topics in context. Topics covered include managing volunteers, cave gates, cave inventories and monitoring, cave management plans, relevant laws, cave restoration, cave survey and new cave discoveries, cave scientists and the manager, recreational cavers and much more.

Registration: Graduate, Undergraduate, or Workshop

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