

Karst Geomorphology: Field and Numerical Techniques
Summer 2022
Tentative Course Schedule

Saturday, June 25 - Meet and greet, Course introduction

6:00 pm Gather 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 which would result in delayed cave trips.

Sunday, June 26 - Geomorphology, Geographic Information Systems

8:00 am Breakfast

9:00 am Geomorphology of the Mammoth Cave Region

9:30 am Keeping a field notebook

10:00 am Google Earth and GIS workshop

12:00 pm Lunch

1:00 pm Field work—surface and cave, Structure from motion data collection

6:00 pm Dinner

Monday, June 27 - Introduction to numerical modeling

8:00 am Breakfast

9:00 am Modeling theory

9:30 am Structure from motion data processing

10:00 am Coding in python

12:00 pm Lunch

1:00 pm Field work—Mammoth Cave geomorphology and hydrology

6:00 pm Dinner

Tuesday, June 28 - Numerical modeling and landscape evolution models

8:00 am Breakfast

9:00 am Introduction to Landlab

9:30 am Workshop in python, Landlab, or other language of student's choice

12:00 pm Lunch

1:00 pm Field work—Mammoth Cave paleohydrology

6:00 pm Dinner

Wednesday, June 29 - Erosional processes and speleogenesis

8:00 am Breakfast

9:00 am Introduction to computational fluid dynamics

9:30 am Workshop student projects

12:00 pm Lunch

1:00 pm Field work—Mammoth Cave paleohydrology

6:00 pm Dinner

Thursday, June 30 - Synthesis

8:00 am Breakfast

9:00 am Analytical lab techniques, synthesizing field, lab, and simulation results

9:30 am Workshop student projects

12:00 pm Lunch

1:00 pm Field work—Mammoth Cave sediment transport events

6:00 pm Dinner

Friday, July 1 - Student presentations, conclusion

8:00 am Breakfast

9:00 am	Student presentations
12:00 pm	Lunch
1:00 pm	Field station clean up and departure