

Karst Geomorphology: Field and Numerical Techniques

June 2020

Tentative Course Schedule

Saturday – June 20 – Meet and greet, Course introduction

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.

Sunday – June 21 – 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 22 – 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 23 – 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 24 – 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 25 – 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 – June 26 – 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