# CAVE SURVEY & CARTOGRAPHY Tentative Class Schedule June 8-14, 2025

#### **Course Overview: (Sunday)**

7:00-9:00pm

Introduction, discussion of course outline. Student experience survey. Display of survey instruments, field data, maps and other digital representations.

Lecture topics:

- Overview on software/hardware for data collection, reduction, cartography.
- Why do we map caves? What is the purpose of the cave map?
- Overview on data collection/survey standards for class. Low impact surveying methods, digital data collection, digital cartography, georeferencing maps (use of GPS with cave survey, LIDAR data)

### Day 1 (Monday)

8:30-11:30 am

Lecture topics:

- Basics of cave survey/inventory, classroom exercise
- Surface and in-cave quality control methods
- Underground teamwork
- Sketching to scale
- Georeferencing the cave survey (GPS)

Noon-1:00pm lunch break at Hamilton Valley

1:00-4:30pm

- In-cave mapping at Adwell Cave GPS tracklog to cave and entrance location.
- Cave survey Novice: emphasis on plan view, Intermediate: cross sections with plan

4:30-6:30pm dinner break at Hamilton Valley

6:30-9:00pm

- Demonstration of various plots and representations of cave passage
- Cave survey data entry and quality control
- Magnetic declinations
- Class work: Transforming field notes into a digital cave map
- Data reduction from field exercise
- Introduction to digital cave cartography techniques

## Day 2 (Tuesday)

8:30 – 11:30 am

Lecture topics:

- Introduction to Cross sections and profiles
- Acquisition of georeferencing data (LIDAR, Digital topographic and geological/hydrological data)
- Basic cave resource inventory

Noon-1pm Lunch at Hamilton Valley 1:00-5:30p

• In-cave mapping (Dogwood Cave) with plan, profile and cross sections, resource inventory

5:00-7:00 pm dinner break at Hamilton Valley

7:00-9:30pm

- Class work: Cartographic representations from days field exercises
- Optional: Resource inventory database constructing a simple spreadsheet for inventory data.
- Downloading topographic maps, LIDAR data, georeferenceing cave data:

#### Day 3 (Wednesday)

8:30-11:00 am *Lecture toipcs:* 

- Passage delineations using Disto
- Cross sections and vertical profiles continued

11:30 – 1:00 Lunch in Horse Cave

1:00-5:30pm

- In cave mapping in Hidden River Cave.
- GPS tracklog to cave, GPS entrance
- Use of laser disto for mapping entrance sink
- Novice: Cross sections with triangulations
- Intermediate: (plan, cross sections & profile)

6:00-7:00pm dinner break at Hamilton Valley

7:00-9:30pm

- Class work: Digital cartography using today's field notes
- Continue working on cartographic projects

## Day 4 (Thursday)

8:30-10:00am Lecture topics:

- Profiles (continued)
- Sketching large cave passages and rooms, clipboard sketching
- More on cave inventories

10:30am-4:00pm (bring in-cave lunch)

• In-cave mapping exercise: Cave TBD – mapping a large trunk passage and chamber *Novice*: plan view, cross sections on clipboard *Intermediate:* plan view, profile, cross sections, resource inventory in GIS(optional)

5:30-7:00 dinner break at Hamilton Valley

7:00-9:00pm

- Class work: Digital cartography using today's field notes
- Continue working on cartographic projects from previous days

Day 5 (Friday) Bring in-cave lunch

- 8:30 3:30 In-cave mapping exercise: Survey in Cathedral Domes area of Mammoth Cave Mapping complex passages, loops, passage delineations
- 4:00-6:00pm dinner break at Hamilton Valley
- 6:00-9:00pm Data entry, cartography for day's exercise Digital cartography continued – finish class projects

#### Day 6 (Saturday)

8:30-10:30am - Course wrap-up. Discuss cartographic projects for those taking the class for credit.