

EAS 521 Fluvial Ecosystems Field Experience

Course Syllabus, Fall 2019

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Meeting Time: Friday 1:00-5:00 PM

Meeting Location: Dana Bldg Room G556

Course Overview:

Rivers are the landscape-scale expression of the water system and truly do “run through” our professional and personal lives. In EAS 521 we take the concepts from EAS 520 into the field, doing a comparative study of a wide variety of river and stream ecosystems across Michigan’s Lower Peninsula; and overlaying these field observations on the conceptual framework provided in the EAS 520 classroom. This field experience is a powerful complement to the classwork, helping students to better understand and interpret riverine ecosystems.

Course Schedule:

	Topic	Guests
Week 1	Course intro; Survey Mill Creek	
Week 2	Survey Mill Creek	
Week 3	Survey Macon Creek	
Week 4	Survey Huron River	K. Wehrly, MI DNR
Week 5	Weekend Field Trip to UM BioStation; Survey	
Week 6	Fall Break	
Week 7	Survey Rouge River	S. Petrella, Friends Rouge
Week 8	Survey Macon Creek & River Raisin	
Week 9	Survey Mill Creek	
Week 10	Visit Clinton River	
Week 11	ID Invertebrates	
Week 12	Data Synthesis	
Week 13	Thanksgiving Break	
Week 14	Final Team Presentations and Discussion	

Course Approach:

Each Friday afternoon we venture out to streams near to Ann Arbor; and we take one long weekend trip to explore the northern Lower Peninsula, spending 2 nights at the UM Biological Station (UMBS). By semester's end we will have created a survey database representing ~15 diverse sites, and we will together analyze, synthesize, and discuss the resulting patterns and findings.

Students will be broken into assigned teams during each field event to conduct various stream surveying activities, as listed below.

- Fish surveys using electrofishing techniques
- Macroinvertebrate sampling (lab identification to come Week 11)
- Current profiling (measuring channel velocity & geometry)
- Water Quality Sampling

Student Expectations:

- Attendance and strong participation in all field trips
- Timely arrival to the beginning of the lab period. We are on a very tight schedule and will need all parties to help pack the vans with equipment.
- Review pre-lab site orientation materials
- Strive to link field experiences with classroom concepts; and to build on these through the semester
- Bring enthusiasm, a positive attitude, keen observation skills, and thought provoking discussion to each field event
- Come prepared for outdoor elements & possible mishaps. See page XX for a field packing list.
- Join in the comradery of the "Fluvs" lab experience. You will be spending a lot of time with your lab group members; get to know each other. Have fun!

Student Pack List:

- Observation Journal (Composition Notebook)
- Writing utensil
- Water bottle(s)
- Sunblock

- Insect repellent (at your discretion)
- Long pants
- Thick & long socks
- Hat and/or Sunglasses
- Rain jacket
- Warm base layers
- **Change of clothes**
 - Never does a year pass without several students falling in the river. Don't be caught without a change of clothes in cold weather.
- Snacks
 - GSI will start a snack sign-up sheet, but feel free to bring additional sustenance.

Course Grading:

Activity	Points
Lab Attendance and Participation	70%
Individual Observation Journals	15%
Team Final Presentations	15%

- Lab Attendance and Participation: Attendance to all labs is required unless in the circumstance of illness or insinuating circumstances. If you suspect you will need to miss a lab in the semester, please speak to the instructor as soon as possible. Participation is not synonymous with presence. Be engaged, be a team player, and be communicative.
- Individual Observation Journals: Students will be expected to keep an observation journal to be filled during and/or after each field survey event. This journal should be a composition notebook (or similar) and will be turned in for periodic review throughout the semester. Observations should comment on factors that influence the river and stream ecosystems; some examples are listed below.
 - **Pre-lab site orientation packet:** What watershed system are we in? Where is the outlet of the river system? How does the catchment size compare to other sites? What type of landscape features do you see from the orthoimagery? What is the dominant surficial geology?

- **Driving to the site:** What type of landscape characteristics are dominant in the watershed? Can you connect what you read in the pre-lab materials to what you see? Particularly, consider land use, terrain slope, soil type, permeability, water budget influence, etc.
- **Field sampling:** How would you describe the diversity of the fish, plant, & macroinvertebrate populations? Consider other wildlife you may encounter. How would you describe the channel structure (bank steepness & slope, channel features)? Floodplain features? Sediment budget? River velocity? Power? Endless possibilities here.
- Team Final Presentations:
 - After building a survey database from all of our field sites, we will summarize our findings through group presentations. Students will break into teams and present their findings on the patterns of various river characteristics. Class time to work on presentations will be provided during Week 12.

UM BioStation Trip:

Week 5 (October 4th-6th) we will embark on a weekend trip to the UMBS (<https://lsa.umich.edu/umbs>).

Please inquire with the instruction as soon as possible should you have any conflict with this trip. The trip is a vital part of the lab experience, as we contrast the stream characteristics in the northern Lower Peninsula to the southwest Lower Peninsula. It's also a weekend for bonding with classmates and finding relaxation in the wilderness. Don't miss out!

We will be staying in dorm-style rooms with shared bathrooms. We'll be dining at the UMBS dining hall for breakfast/dinner and packing field lunches for lunch.

Packing List:

- Bedding (sleeping bag or sheets/blankets, pillows, etc.)
- Bath towel(s)
- Toiletries
- Essential medication (first aid kits will be available)
- Person items (phone/laptopschargers/etc.)
- All previous mentioned packing items for field visits