

Colorado State University
WR 486 Field Practicum in Watershed Science
Syllabus Fall 2020
trip August 16-18/19-21, 2020

Instructors: Steven Fassnacht, steven.fassnacht@colostate.edu (email for information)
Niah Venable, niah.venable@colostate.edu

Objectives: This field course will provide students with opportunities to increase the depth of their understanding of watershed science and sustainability through examining water resource issues in selected regions of Colorado. We will explore a variety of locations, including headwater regions and areas downstream. This course provides a unique opportunity to examine different ecosystems along the course of a river and to consider the socio-ecological impacts of human activity on water resources.

COVID-19 course changes:

Due to the current pandemic situation, this course will be divided into two trips and sections: A) August 16-18 and B) August 19-21, to reduce the number of students per trip. The two trips will not have the exact same tours and students will be partnered across sections to share their experience (Assignment #3). A separate Health and Safety document is on Canvas and must be read prior to departure.

Dates:

- **Mandatory orientation meeting: Friday, August 14 at 4pm MT on TEAMS**
 - The *mandatory orientation meeting* will (1) allow discussion of class content and expectations; (2) determination of group gear and logistics; and (3) answer any additional questions about the trip. *If you cannot attend the meeting(s), you should plan on taking the class next season.*
- **Mandatory class wrap-up meeting: Tuesday, September 8th at 5pm MT on TEAMS**
 - The *mandatory class wrap-up meeting* will: (1) provide an opportunity to briefly share your experiences and what you learned; (2) complete course reviews; and (3) provide input for the 2020 Practicum. This is usually a good time to share pictures and return lost and found items.

Questions to consider throughout the course:

- What are the boundaries of the watershed(s) under consideration?
- What are the components of the watershed(s) and what are the key watershed processes?
- How might watershed processes be tracked and monitored over time?
- What types of management activities have been implemented and how have watershed processes and functions been impacted?
- What tools and/or methods are necessary to address specific water issues?

Daily Agenda:

Day 1 (August 16 or 19):

- 07:00 – meet in the parking lot to the east of the Forestry building
- 07:30 – depart for trip
- 08:00 to ~17:00 – Tours, lunch is on the go
- ~17:00 – Arrive at camp site(s), set up camp, make dinner, or travel back to Fort Collins
- 22:00 – Quiet time

Day 2 (August 17 or 20):

- 07:00 to 07:30 – Break Camp, breakfast done, ready to depart @ 07:30 or arrive at campsite for those who spent the night in Fort Collins
- 08:00 to ~17:00 – Tours, lunch is on the go
- ~17:00 – depart for Fort Collins

Day 3 (August 18 or 21):

- 07:00 – meet in the parking lot to the east of the Forestry building
- 07:30 – depart for trip
- 08:00 to ~17:00 – Tours, lunch is on the go
- ~17:00 – end of trip

WR 486 Field Practicum in Watershed Science: Course Assignments

- 1) Ask 20 questions a day and keep a *field notebook* of the materials being presented for the practicum. Most professionals, in consulting or in government employment, keep field notebooks as part of their job, consider this as practice.
 - The coupling of auditory (hearing) activity and writing increases the amount of material retained, and hopefully learned. Use graphs, pictures, drawings or whatever is needed to help you learn and remember.
 - The notebook will be used as a reference for the paper written after the trip. It is designed to be referred to for data/contact information. Also write down ideas and thoughts to pursue later.
 - At the end of each day, you will write a brief reflection, including information about the interaction with your partner for the day. The reflection is not a summary of tasks from the day, but rather insight into general concepts learned, aha moments, etc.
 - The field books will be spot checked on the trip and evaluated for completeness. To illustrate professionalism, you will be required to:
 - 1) Number each page (do not rip out pages, except at the back if needed)
 - 2) Date and initial each page
 - 3) Write a daily reflection, and a brief course reflection at the end of the trip
 - 4) Add a table of contents at the beginning. Feel free to use the pages at the back as “scratch” paper. See the grading rubric for specifics.

Notebook Due: Tuesday, September 8th by 5pm

- 2) Write a *3 to 5-page paper* discussing watershed science as related to one of the three days of the trip, focusing on the ecosystem/site(s) visited that day (or one your cross-section group visited). Highlight and discuss a water issue that you would like to investigate. Citations for the paper are not mandatory, but references to the various tours, and any related information you have researched will be useful in explaining why you think that the issue selected is important, and why you would like to investigate it further. If you will be taking WR440 (Watershed Problem Analysis) in S2021, you are requested to the focus your paper on defining a possible WR440 project, so you can start to think about the WR440 course. You are asked to state the problem, define the need, and identify data that you could use in your assessment.

Paper Due: Tuesday, September 8th by 5pm on Canvas

- 3) Create a joint, cross-section *Group Video Presentation*. Since there are two sequential trips, you and one student from your section will be partnered with two students from the other section.

Together you will need to create a 3 to 5-minute video outlining two different stops from the trip, one stop from the August 16-18 trip and one stop from the August 19-21 trip. You will want to include a summary of the water issues addressed, the objectives of the stop, and new, watershed information that you learned. The video can be a combination of powerpoint text, photographs and video.

Video Due: Tuesday, September 8th at 5pm on Canvas

Grading:

- Field notebook (40% total)
 - daily notes from stops (15%)
 - professionalism components, page numbering (5%), date and initial each page (5%), table of contents (5%), daily reflection and final summary reflection (10%)
- Paper (30%)
- Group Video Presentation (30%)

WR 486 Field Practicum in Watershed Science: Equipment List

Academic items:

A notebook for daily writing and a pen or pencil. While it is possible to keep an e-notebook, given the potential harshness of field conditions, hardcopy notebooks (e.g., write-in-the-rain) are preferable to electronics.

Items to bring for the trip:

- Hiking boots or running shoes, you will need closed-toe shoes on at least one tour
- Hiking/day pack big enough to hold lunch, water, notebook, rain gear, etc.
- Hat (broad-brimmed ideal), sun glasses, sunscreen, bandanna, bug repellent
- Camera (if you'd like), water bottles (min 1 L capacity, bring 2)

Items to bring for the overnight:

- Tent (individual; shared only with shelter-in-place classmates)
- Sleeping bag (it will freeze at night, but be hot during the day) and sleeping pad
- Tarps and rope (shared) as all campsites have been hit by the bark beetle so there is limited or no shade.
- Flashlight/headlamp, extra batteries
- Toiletries (wet-wipes, soap, toothbrush, toothpaste, toilet paper, personal first aid items as needed)
- Clothes for the two days, including a warm jacket, long pants, rain gear
- Phone and device car chargers – we will not have electricity except on the road in the vans.

Food:

You should bring food for at the first two days, with lunch packed, unless you drive back to Fort Collins for the overnight. Consider bringing snacks for each day. Bring your own camp stoves/fuels/cookware and/or your own pre-cooked dinner for the overnight. Bring your own cooler for food or non-perishables to reduce risk of food-borne illness, as it will be hot.

Packing recommendations:

- All packing, cooking, eating, etc., must be done by 07:30 on the second day. Further, you must be ready to leave by 07:30 each day. If you are not a morning person, get up earlier.

- The campgrounds may not have pit toilets and may not have drinking water. Bring drinking water. Showers are not available during the overnight.
- During the day carry a small daypack with lunch, water, notebook/clipboard, camera, bug repellent, sunglasses, hat, and personal items.
- Bring garbage bag(s) so you can pack out your own litter/recycling

Alcohol and Illegal Drugs

Alcohol abuse (i.e., getting drunk) is strictly forbidden during this field course. Drinking to excess in any context is risky, but, in the field-based, remote context of this course, the risks are greatly magnified. Alcohol abuse not only puts you at personal risk, it can interfere with your academic performance, with the safety and well-being of other participants, and with the safety and reputation of the course and the institution. CSU and the instructional staff simply cannot assume responsibility for participants who engage in risky behavior. The instructional staff will take jokes or comments alluding to alcohol abuse as an indication that you are drinking irresponsibly. First-time offenders will be placed on probation. Second-time offenders are subject to dismissal from the course, and will be referred to CSU Student Resolution Center <<https://resolutioncenter.colostate.edu/>> and/or Student Case Management <<http://www.studentcasemanagement.colostate.edu/>>.

Under no conditions should you consider bringing marijuana or any other illegal drugs on this course. While marijuana is considered legal in the state of Colorado, it is Federally illegal. Since CSU receives funding from the Federal Government, marijuana is thus illegal on campus and during any CSU-sponsored activity, such as this field course. If you make jokes or comments alluding to personal drug use, the instructional staff will take this as an indication that you are using drugs. Use or possession of illegal drugs during this course session is grounds for immediate dismissal from the course, and will be referred to CSU Student Resolution Center <<https://resolutioncenter.colostate.edu/>> and/or Student Case Management <<http://www.studentcasemanagement.colostate.edu/>>. U.S Federal anti-drug laws are severe and an arrest would be a disaster for you.