

# Operational Features, Practices, and Interactions

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The following is an example of the attendance and participation assignment worth 5 points and allows for a file upload.

### ***Cultivating Belonging in Practice***

#### ***Operational Features***

- Replace hierarchical faculty-student structure with collaborative culture. Instructor functions as a member of each student research project team. Frequent interactions throughout project development and implementation.
- Emphasis on group and cohort development, from first meeting.
- Student-designed and conducted research projects.
- Student team–instructor collaboration on research project development.
- Student team–instructor collaboration during data collection.
- Student team–instructor collaboration during data analysis and interpretation.
- Student team–instructor collaboration during presentation development and rehearsal.
- Daily briefings at start of day, throughout each field expedition (Gookin and Leach 2009, Gookin and Swisher 2015)
- Daily de-briefings during evening, throughout each field expedition.
- Group travel: highway driving in rented vans, hiking to base camps and study areas, river travel.
- Research team travel to study sites.
- Group meals and meal preparation.
- Evening check-ins and discussions, around campfires.
- Layover days provide time for data collection, social interactions, rest, and down time.
- Funding provided to students on need basis (funding offsets course fees); transportation provided.
- Much technical gear loaned to students, without charge.
- Training in skills and gear use, prior to expeditions.
- Mentoring in skill development during expeditions, by both instructor and peer mentors.
- Emphasis on growth mindset. Recognize research is challenging; work with students' current abilities, and support efforts to improve competence.
- Emphasize development over judgement: provide feedback on low-stakes drafts before final versions.

#### ***Practices***

##### **Orientation**

- Pre-course orientation meetings, including information about field sites; logistics; scheduling and itineraries; group and personal gear; facilities for sleeping, cooking and eating, restrooms; menstruation during field expeditions; transportation; expected weather; fees and expenses; policies. Include photos.
- Orientation at start of course: repeated, reinforced, clarified pre-course orientation information.
- Norms, Code of Conduct: co-created on first day, revisited and confirmed before first field expedition.
- Personal gear list: provided before course, reviewed during course before 1st field expedition. Included tips on alternatives to purchasing gear and priorities for essential gear. Also included list of group gear provided, that students need not acquire/pack.

- Knowing Students
- Pre-course student survey, including: pronouns, dietary restrictions and preferences, accommodations, professional goals, financial concerns, comfort in field settings, sense of belonging in academic and scientific contexts.
- Medical exams/screening required of all students as per WWU Risk Management guidelines for field courses. Instructor review of medical forms.
- Accommodations, student concerns, and other needs assessed in applications, pre-course surveys, and medical screening: physical, mental, psychological, cultural, religious, family, other accommodations.
- Daily check-ins and debriefings with individuals and entire group.
- Post-course student evaluations, including student learning outcomes, affective outcomes, professional development, sense of belonging in academic and scientific contexts.
- Instructor Messages
- Emphasize that anyone can do well if they put in effort.
- Emphasize that anyone can do well, regardless of physical ability.
- Encourage students to think of themselves as scientists and part of the scientific community.
- Encourage students that they have ability to do field research.
- Acknowledge challenges of field work.
- Openly acknowledge mistakes and failure as a normal part of learning and scientific processes.
- Solicit student feedback about the program, on multiple occasions.
- Highlight diversity of perspectives and experiences in the field in course content.
- Intentionally cultivate non-judgmental atmosphere, supported by norms and conduct code.
- Priority to students' physical and mental health, with academic adaptations as needed.
- Adaptations to Student Needs and Interests
- Course activities and content adapted to weather conditions and student backgrounds.
- Course content and activities adjusted to support student research interests and career interests.
- Content and skills training adapted to student needs and backgrounds.
- Instruction adapted as needed based on student feedback
- Adaptation of schedule and activities as per student needs and accommodations.
- Course materials available in multiple formats: Canvas, program web site, hard-copies in course library.
- Multiple modalities and opportunities for students to demonstrate performance.
- Relevance of topics and expedition locations to student interests reinforced.
- Diversity of perspectives offered, recognized, and valued.

### **Teamwork**

- Leader framing for psychological safety (Edmonson 2019, McClard and Smith 2024).
- Expedition behavior instruction, expectation setting, and reinforcement (Gookin and Leach 2009, Ostis 2015).
- Instruction in effective feedback and task monitoring.
- Program norms and code of conduct, co-created to support equitable teamwork.
- Projects in scaffolded parts to facilitate planning and team management (Nyarko and Petcovic 2023a).  
(Literature search, lit. review, project proposal, draft and final presentation, draft and final reports)
- Early failure destigmatized with low-stakes drafts, feedback, and revisions.
- Emphasis on group accomplishment over individual achievement.
- Instructor as active team member.

### **Risk Management**

- Group environmental briefing, to raise awareness of hazards and co-create group rules (Smith 2021).
- Regular tick-checks in tick habitat.

- Rigorous attention to proper food storage.
- Allergen information shared among group.
- Instruction, expectation, equipment, and rigorous attention to hand washing.
- Training in river safety and incident response (Ostis 2015, 2017; Polsby and Munger 2021).
- Instruction in PPE use, and regular verification.
- Safety talk prior to river launch.
- Shared knowledge of locations of communication devices, expedition first aid kits, and rescue gear.
- Policies on group travel on land, boat order and spacing on water.
- Rapid scouting as a group, with intended lines and plans of all boat captains shared with group.
- Each participant decides whether to run rapids or walk around, without judgement.
- Maintain C.L.A.P. on river (Communication, Line of sight, Avoid hazards, Position of maximum utility).
- Daily satellite text messages to department and participant emergency contacts.
- (Many additional risk management measures applied, beyond scope of student sense of belonging.)

## ***Interactions***

### **Peer Interactions**

- Pre-course orientation meetings, with opportunity for students to meet each other.
- Research groups self-selected, based on student interest.
- Cook groups self-selected, but different from research groups.
- Research and cook groups shuffled between expeditions.
- Guidelines and systems for effective teamwork.
- Instructor interventions, if needed, as outlined in co-created code of conduct.
- End-of-course celebration: photo and video viewing, awards ceremony, shared dinner.

### **Informal Interactions**

- Free time, rest time, and social time built into course schedule and expedition itineraries.
- Community-building activities and games: first group meeting, and regular subsequent activities.
- Some initiated by instructor, others organized by students.
- Shared meals: all dinners shared, prepared by cook teams (including instructor).
- Breakfasts and lunches eaten as group, with individual food.
- Shared chores: all group camp chores shared. Group camp gear set up before individual tents/camps. (i.e., expedition behavior norms explained, expected, and cultivated.)
- Campfires: group campfires each evening, accompanied by group dinners, baked desserts, debriefs, discussions, readings, and stories.