

# ERS410: Sea-to-Sky Experience

Spring 2023

## Course Information

**Course description:** Many critical processes in the Earth and climate sciences occur at interfaces among the atmosphere, cryosphere, hydrosphere, biosphere, oceans, solid earth, and society. Using an interdisciplinary systems-based approach, as well as the ability to make direct observations, are essential to understanding these processes. ERS410 will visit a region where a wide range of environments - everything from open ocean ("sea") to glaciers ("sky") - can be experienced. During this travel study course we will focus on a range of professional and practical skills, including global impact/local relevance research, proposal development, science planning and logistics, risk assessment and mitigation, safety, group dynamics and collaboration, field-based and remote observations, cultural knowledge, and science communication.

**Number of credit hours:** 3

**Prerequisites:** Acceptance into the course

**Location, day, and time:** Bryand Global Sciences Center room 307

Course dates: January 17 - May 31, 2023

One hour meetings during the Spring semester, Thursdays 5-6pm

Travel component to Southeast Alaska and the Yukon: May 12 - 31, 2022

## Course website

## Faculty Information

Dr. Karl Kreutz

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### **Golden Learning Assistants**

Ingalise Kindstedt, PhD student, Earth and Climate Sciences

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Emma Erwin, PhD student, Earth and Climate Sciences ([emma.erwin@maine.edu](mailto:emma.erwin@maine.edu))

Katherine Westbrook, undergraduate, Earth and Climate Sciences

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### **Artist in Residence**

Claire Giordano ([claireswanderings@gmail.com](mailto:claireswanderings@gmail.com))

## **Course Delivery Method**

**Mode of Instruction:** In-Person

**Time Options:** Synchronous

**Digital Services, Hardware, Software:** Laptop or tablet with a PDF reader, web browser, Google Drive/G Suite, Zoom.

**Course Google Shared Drive:** ERS410 Sea-to-Sky Experience/Spring 2023/Student content

## **Instructional Materials and Methods**

- There is no formal textbook for this course.
- Required learning materials will be comprised of freely available online sources and/or PDF files that can be viewed/downloaded from Google Drive
- Elements of active learning (group and team work, discussions) will be incorporated into Spring semester and May term class and travel time. Students must have access to a laptop or tablet connected to the UM network (or available wireless while traveling) with necessary software installed at all times.

### **Required personal and field gear for travel**

[Our trip to Southeast Alaska and the Yukon](#) will be May 12-31, 2023. We will discuss the travel route, transportation, accommodations, likely weather conditions, and outdoor activities during the Spring semester. We will collaboratively design a packing list for

personal gear that each student will need to bring on the trip, as well as group gear necessary for fieldwork and data/sample collection, far in advance of departure.

### **Course costs**

The course fee will be an inclusive travel cost (airfare, travel insurance, ground transportation, lodging, meals). Tuition costs for the course, personal items, and incidentals during travel are not covered and are the responsibility of the student.

### **Code of conduct**

- Commitment to working as a team in a professional, responsible, and respectful manner; We define professionalism based on the [American Geophysical Union Scientific and Professional Ethics Principles](#) (2017)
- A safe, secure, and non-threatening working, living and travel environment
- The Sea-to-Sky Experience is substance-free
- Follow Federal, State, local, international, UMaine laws, rules, guidelines and regulations, and private landowner instructions
- Adhere to the published standards of behavior found in the UMaine student handbook
- ***Violations of this code of conduct during travel may result in a student being sent home at their own cost***

### **Course Goal**

As a Capstone course, ERS410 will provide authentic professional experiences by drawing together the interdisciplinary content and skills of the ECS undergraduate program during travel and symposia.

### **Instructional Objectives**

During ERS410, students will:

- Collect published literature related to an aspect of the coupled natural/human system to be encountered during travel
- Identify unresolved problems and knowledge gaps based on literature review
- Propose new questions and hypotheses related to identified problems
- Design data collection activities based on current best practices and techniques
- Present, debate, and revise ideas as teams with an audience of professional Earth and climate scientists
- Evaluate and revise travel plans, logistics, and safety protocols as a group
- Set up field experiments, collect data, and troubleshoot equipment problems
- Manage team and group communication during travel, including remote locations

## **Student Learning Outcomes**

We will work on the development of a capstone project through the spring semester and during the travel portion of the course. Your team will have wide latitude to decide on the topic of your project - it could be a research-based project that collects and analyzes new data as part of novel inquiry, a research-based project that utilizes existing datasets, a literature review and meta-analysis that answers a fundamental question in the region, or some other innovative idea related to the coupled human-natural system in the region that your team develops in consultation with the instructors. The schedule and grading descriptions below provide details on the timeline and deliverables of the capstone project. After completing the capstone project and ERS410, students will be able to:

- Synthesize existing Earth and climate science content knowledge and state-of-the-art observations to construct an evidence-supported argument
- Function competently in authentic Earth and climate science professional settings, including team collaboration, laboratory, fieldwork, and symposia
- Communicate Earth and climate science knowledge effectively in poster and oral formats

## **Grading and Course Expectations**

- You will be expected to be prepared for all course activities, which, because this is a travel course, will span the full range of professional geoscience settings. In short, this means that you will be asked to *do* many things during the course, whether we are in the classroom, at symposia, traveling, or working in the field. Activities range from thinking about a problem, discussing ideas, proposing solutions, designing and conducting field experiments, collecting, processing, interpreting and presenting data, dealing with travel logistics and problems, and managing your health and the health of the group. This style of learning replicates how scientists work, collaborating together on increasingly complex interdisciplinary topics. In modern workforce training, comfortable functioning in a collaborative, diverse learning environment is crucial in order to successfully connect unique regional problems with global research expertise. You will be joining the scientific community by learning how to work in a group, share results of a project, and participate in rigorous scientific debate.
- Any assigned readings and viewing of material should be completed by the provided deadlines
- The final course grade will be based on the following three components:

**Collaboration:** 40% (400 points) of your grade will be based on documenting your team's collaboration through the Spring semester, during travel, and concluding with the final

presentation. This collaboration portfolio will include, but is not limited to: data sets, data analysis, code, graphics, discussion notes, field notes, pictures, sketches, art, budgets, and expenses. Google Drive will be our default, but teams are encouraged to explore other platforms such as Slack, Microsoft Teams, Trello, etc. We will also require monthly (during the semester) and weekly (during travel) team statements in the portfolio that document individual contributions; instructors and teams will review these statements together as a team building strategy and to assess progress. Evaluation of your cumulative collaboration portfolio will be done at the end of the course using a Collaboration rubric.

**Poster presentation:** 20% (200 points) of your grade will be determined by the poster presentation your team makes at the University of Maine Student Symposium (UMSS). Grading of posters will be based on the UMSS Student Poster judging rubric.

**Final presentation:** 30% (300 points) of your grade will be based on a presentation that your team will make to invited scientists, staff, community members, and visitors at the end of our travel. The form of oral communication will depend on the nature of your team's scholarship (e.g., data-based research presentation, science/art collaboration demonstration, etc.). Grading of the final team presentations will be done using the ERS320 (Research Seminar in Earth and Climate Sciences) oral presentation rubric.

**Course reflection:** 10% (100 points) of your grade will be based on a writing prompt that will ask you to summarize and reflect on your experience in the course, drawing together the full breadth of your observations and exploration. The audience for your reflection is the Golden family, whose generous support has made the Sea-to-Sky Experience possible.

<b>Summary:</b>	Collaboration	400 points
	Poster presentation	200 points
	Final presentation	300 points
	Course reflection	100 points

A = 900 – 1000 points

B = 800 – 899 points

C = 700 – 799 points

D = 600 – 699 points

F = 599 points or less

## **Course Schedule**

The [meeting schedule](#) and [trip schedule](#) are approximate and may be updated during the course.

## **Course Policies**

- Attendance at all course activities is required unless other arrangements have been made
- Late policy: By turning assignments in on time, you are eligible for full credit. Late assignments forfeit the right to any credit; any partial credit for late assignments will be up to our discretion.
- We expect appropriate use of electronic devices, communication, and social media during class.

## **University of Maine Syllabus Statements**

**Academic Honesty Statement:** Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University. Please see the University of Maine System's Academic Integrity Policy listed in the Board Policy Manual as Policy 314 (\*Date Issued: September 1, 2020): <https://www.maine.edu/board-of-trustees/policy-manual/section-314/>

**Students Accessibility Services Statement:** If you have a disability for which you may be requesting an accommodation, please contact Student Accessibility Services, 121 East Annex, 581.2319, as early as possible in the term. Students who have already been approved for accommodations by SAS and have a current accommodation letter should meet with me (Dr, Karl Kreutz) privately as soon as possible.

**Course Schedule Disclaimer (Disruption Clause):** In the event of an extended disruption of normal classroom activities (due to COVID-19 or other long-term disruptions), the format for this course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.

**Observance of Religious Holidays/Events:** The University of Maine recognizes that when students are observing significant religious holidays, some may be unable to attend classes or labs, study, take tests, or work on other assignments. If they provide

adequate notice (at least one week and longer if at all possible), these students are allowed to make up course requirements as long as this effort does not create an unreasonable burden upon the instructor, department or University. At the discretion of the instructor, such coursework could be due before or after the examination or assignment. No adverse or prejudicial effects shall result to a student's grade for the examination, study, or course requirement on the day of religious observance. The student shall not be marked absent from the class due to observing a significant religious holiday. In the case of an internship or clinical, students should refer to the applicable policy in place by the employer or site.

## **Sexual Violence Policy**

### **Sexual Discrimination Reporting**

The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a teacher about an experience of **sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct or any form of gender discrimination** involving members of the campus, **your teacher is required to report** this information to Title IX Student Services or the Office of Equal Opportunity.

**If you want to talk in confidence** to someone about an experience of sexual discrimination, please contact these resources:

*For confidential resources on campus:* **Counseling Center: 207-581-1392** or **Cutler Health Center: at 207-581-4000.**

*For confidential resources off campus:* **Rape Response Services: 1-800-871-7741** or **Partners for Peace: 1-800-863-9909.**

**Other resources:** The resources listed below can offer support but may have to report the incident to others who can help:

*For support services on campus:* **Title IX Student Services: 207-581-1406, Office of Community Standards: 207-581-1409, University of Maine Police: 207-581-4040 or 911.** Or [see the OSAVP website for a complete list of services](#)