

| Course ID: | Course Title: | Winter 2024 |
|------------|---|---|
| BIO 493 | Plan a field study protocol for bio-geoscience and/or environmental science research work in a campus-adjacent environment. | Prerequisite: relevant course credit in BIO, BCH, ZOO, ECOL, GEO, or GEOG Credits: 3 |

| Class Information | | Instructor Information | | Important Dates | |
|-------------------|--|------------------------|--------------------|----------------------------------|------------|
| Delivery: | as needed | Instructor: | Dr. Stephen Jeans | First day of class: | January 8 |
| Days: | as needed | Email: | sjeans@ambrose.edu | Last day to add/drop: | January 21 |
| Time: | | Phone: | 403-407-9500 | Last day to withdraw: | March 28 |
| Room: | | Office: | L2111 | Last day to apply for extension: | April 2 |
| Lab/ Tutorial: | fieldwork to approved areas will be required | Office Hours: | by appointment | Last day of classes: | April 12 |
| Final Exam: | none | | | | |

Important Dates and Information

For a list of all important dates and information regarding participating in classes at Ambrose University (AU), please refer to the Academic Calendar at <https://ambrose.edu/academic-calendar>.

Course Description

This course is a one-semester research project. Students will choose a research topic of choice, perform a literature review, perform scientific experiments, data analysis, and complete a research paper and presentation on the work.

In this particular project, the student will produce a field map, prepare field-study instruments, design data collection and analysis tools, organize a plan for field study of a campus-adjacent environment rich in diversity for study of either the bio-related geosciences or environmental sciences, and defend their research protocol to peers and supervisors.

Expected Learning Outcomes

At the conclusion of BIO 493, students will be able to:

- knowledge*
- identify component concepts of the intended research topic and research content and processes,
 - understand and explain background knowledge required of desired field research study parameters,
 - apply learning about field instruments to their selection, preparation, safety, and usage,
 - evaluate sites for field study and express information in map, oral, and written forms,

- synthesize an argument and backing for research protocols of a selected environment,
- defend scientific conclusions, assumptions, and analysis of data presented,
- skill* - conduct basic research and communication in the Earth and Environmental Sciences,
- identify, explore, assess functionality of, and prepare apparatus for research work,
- understanding best practices in field work and build a protocol for field activities,
- design materials suitable for field work and data collection, and for science communication,
- attitude* - grow a richer appreciation for Earth's ecological complexity and sustainability, and
- express an understanding of the significance and coexistence of science and of faith.

Textbooks

NA.

Course Schedule

The schedule will be loose, but will require the following:

- i. at least three hours of work per week, not including reading break, beginning the week of January 8 2023,
- ii. biweekly meetings with the instructor, for at least thirty minutes per meeting, some may be longer in the field, and
- iii. weekly emails to the instructor, an update about progress of the past week and plans for the coming week.

Below is a tentative schedule, subject to change, as circumstances require (poor weather, etc.). Students are expected to **augment** and **adjust** this schedule to their study/research needs (and with approval of the supervisor).

Weeks in **green** highlight-background indicate outdoor experience for class/portion, **yellow** indicates ARC presentation.

| Week | Date | Reading | Topic/Activity | Required, Notes, and Activities Due |
|---------|---------|---------------------------------|--|--|
| 01 | Jan. 12 | Syllabus & related text | Planning meeting (suggested text - skim key areas) | fully read this document, pre-readings and form some study ideas/questions |
| 02 | Jan. 19 | | Field meeting (dress for weather) | likely outdoor activity (check email) |
| 03 | Jan. 26 | | | consider literature review |
| 04 | Feb. 2 | | | consider final research/paper outline |
| 05 | Feb. 9 | | | consider laboratory inventory/testing |
| 06 | Feb. 16 | | | consider planning for field-work |
| Feb. 23 | | Ambrose University Reading Week | | No Classes, No scheduled meeting |
| 07 | Mar. 1 | | | consider data collection analysis |
| 08 | Mar. 8 | | | consider first drafts |
| 09 | Mar. 15 | | | |
| 10 | Mar. 22 | | | Due: Final Draft Paper and PowerPoint |
| 11 | Mar. 26 | | Ambrose Research Conference (ARC) | Due: Presentation (<i>has to be in the p.m.</i>) |
| Mar. 29 | | Good Friday | | No Classes, No scheduled meeting |
| 12 | Apr. 5 | | | |
| 13 | Apr. 13 | | | Due: Finished Paper discussion/defense |

Requirements

Prepare and write a literature review, data collection and analysis plan, final paper writeup, and presentation.

The student is expected to have completed WHMIS training and abide by all lab rules.

Health and Safety

To keep our community safe, stay home if you are unwell (symptomatic or not) with any illness that is communicable (COVID, flu or cold virus, etc.). Students are expected to be physically present, however, following recent protocol (of staying at home and contacting your instructor) is the best kindness you can show to others. Contact your course instructor as soon as possible to discuss arrangements that ensure you keep current with learning and course standing.

Attendance

There are no set hours for this class. However, the expectation is at least 3 hours of work per week. Some days will be longer (e.g., 1-2 hours at field work or progress walk-through). If a week is not spent in the lab or field, it is spent reading or writing in preparation for the term paper.

Note that it is the student's responsibility to notify the instructor before conducting lab work or before conducting field work, so that the instructor can be present or available in case of emergency. Also note that the labs are in use throughout the semester – students will need to arrange their schedule such that they can make use of the labs when the labs are not in use. Regarding field work, the student will not enter any construction sites or private property nor collect samples without full prior permission from the owners and their instructor.

Also note that grades will not be submitted to the registrar until after Ambrose Research Conference and classwork ends for the term.

Grade Summary:

Research protocol paper (literature review in introduction and discussion; materials and methods, results) – 50%

Ambrose Research Conference presentation – 20%

Participation – 30% which includes:

- weekly emails,
- meetings (weekly to bi weekly, and field work as needed/requested),
- following field and lab safety guidelines,
- maintaining materials in proper order, cleaning up in whatever location you/we are working, and
- strong performance at walk-through and progress and field meetings.

Late assignments accepted at the course professor's discretion. Mark is reduced by 10%/day (weekends count as a day), but may be reduced to 5%/day possible if the student is in contact with the instructor ahead of the deadline, and onward until complete. No makeup for missed work or communication, without cause and at the course professor's discretion. Vacation, planned travel (e.g., flights), employment, etc. are NOT valid reasons for excused attendance or assignment extension.

Students worried about poor grades should see your course professor well before it is too late to alleviate the problem. Barring extenuating circumstances, graded assignments are returned to students within one week of submission. Allow five (5) days after completing all course work and assessments for marks to go to the Registrar's office.

The available letters for course grades are as follows:

| Grade | Numeric equivalent | Interpretation | Grade Points |
|-------|--------------------|---|--------------|
| A+ | 96 to 100% | Mastery: Comprehensive understanding of subject matter | 4.00 |
| A | 91 to 95.99 | | 4.00 |
| A- | 86 to 90.99 | | 3.70 |
| B+ | 82 to 85.99 | Proficient: Well-developed understanding of subject matter | 3.30 |
| B | 77 to 81.99 | | 3.00 |
| B- | 73 to 76.99 | | 2.70 |

| | | | |
|----|-------------|--|-----------------|
| C+ | 68 to 72.99 | Basic: Developing understanding of subject matter | 2.30 |
| C | 64 to 67.99 | | 2.00 |
| C- | 60 to 63.99 | | 1.70 |
| D+ | 55 to 59.99 | Minimal Pass: Limited understanding of subject matter | 1.30 |
| D | 50 to 54.99 | | 1.00 |
| F | 0 to 49.99 | Failure: Failure to meet course requirements | 0.00 |
| P | P/F | Pass | No grade points |

Because of the nature of the Alpha 4.00 system, there can be no uniform University-wide conversion scale. The relationship between raw scores (e.g., percentages) and the resultant letter grade will depend on the nature of the course and the instructor's assessment of the level of each class, compared to similar classes taught previously.

Please note that final grades will be available on student registration system. Printed grade sheets are not mailed out.

Other:

Supplementary course fee

A supplementary course fee (likely \$50.00) charged by the Registrar's Office covers some of the minor expenses of research; additional expenses typically come from the supervisor's Professional Development allocation. Therefore, existing campus resources are first priority for use (e.g., equipment/reagents already on campus), with expenses kept to a minimum (only vital supplies to fill an emergent research need, and approved by the supervisor and the department).

Academic integrity

Note that a breach of **academic integrity** (plagiarism, cheating, falsification, etc.) typically results in a mark of zero, at the instructor's discretion. Academic misconduct is an action, whether actual, attempted, or assistance provided to another, in relation to academic and scholarly activity, whether deliberate or inadvertent, that is dishonest, misrepresents information, or creates unfair advantage.

Students are encouraged to employ the resources of this course in their studies and seek out other valid academic sources (note, use of AI platforms will not fit well, but are unacceptable for use). For any work not of your own creation add quotations to text or caption to a figure. Copyright declarations should remain intact *and/or* any work of another given credit by listing the author(s)/source (APA Style referencing preferred). All of our course resources (including slides and handouts) are provided under a Creative Commons Attribution-NonCommercial-ShareAlike license. Uploading course resources to sites including Chegg, CourseHero, or other online submit-to-access service is considered a commercial activity, and explicitly barred by this license, which will be considered a violation of academic integrity and reported.

See below for Ambrose's statement defining plagiarism and outlining its consequences. In brief, it is your responsibility as a citizen of Ambrose to be aware of the policies of Ambrose and abide by them. Ignorance is no excuse. Plagiarism will not be tolerated.

Examples of plagiarism include, but are not limited, to:

1. Copying an assignment from someone else and submitting it as your own work.
2. Working with a friend and writing down identical answers, whether you understand the content or not.
3. Quoting directly from a source without supplying quotation marks or a citation.
4. Quoting directly from a source without supplying quotation marks, even if it is referenced.
5. Quoting nearly word-for-word from a source, changing only the occasional word, even if it is referenced.

6. Submitting an assignment in which >30% of the content is properly quoted and cited; that is, at least 70% of the words in an assignment need to be your own. A general rule of thumb: for every line quoted, there should be three lines of your own material.
7. Submitting the same or similar assignment for more than one class, or more than one iteration of the same class.
8. Not citing illustrations used in a paper.

Penalties for plagiarism

First offense - in any one of my classes, a zero on the assignment with no chance of rewriting it, and a note in your academic file.

Second offense - in any one of my classes, a zero in the class, and a notice on your transcript.

Third offense - in any one of my classes, recommendation for expulsion from the university.

Note that Ambrose has an appeal process in place if you feel that allegations of plagiarism were unfounded.

Note that my record of a student's past plagiarism does not reset with each semester or class.

Submission formats

The **preferred formats** for online submissions are MSWord (.docx) or Adobe Acrobat (.pdf). Assignments submitted as a link to a GoogleDoc or other image format (e.g., Apple file .pages or shortcut link) will not be accepted except by prior arrangement with the instructor.

Equipment use

To reinforce concepts encountered during this course, participants observe and/or take part in multiple demonstrations and laboratory work that includes the use of equipment. Safety is an expectation of each student for themselves, for the well-being of others in the class, and for the preservation of Ambrose facilities, apparatus, and sample materials. When conducting work in the classroom or in the field, be observant of proper procedure and check that others around you are not at risk. Report any concerns or incidents immediately to your instructor.

Technology

Students are encouraged to **bring a laptop** to class for digital simulations and science research activities. Regarding cellphones, laptops, and other electronic devices -- out of respect for others, **turn off audible alerts** during class time. Non-course related use, especially distractions, are not permitted.

Library

Ambrose University Library has a wealth of connections to online materials/sites, please inquire about this resource. There is a copy of the course textbook available for short-term loan and reading, please inquire about that.

Email and personal etiquette

Emails are a formal means of communicating with the course or lab instructor. As such, they should begin with "Dear Dr. _____". They should be courteous and respectful. Aggressive, foul, or disrespectful language, whether in person or over email, will not be tolerated and could result in disciplinary action taken by the University. Do not expect responses on evenings or weekends (but you can send emails). Do not expect to have questions pertaining to assignments or critical course components answered on the day that the assignment is due or the exam is to be written (but you can ask). Respect the lab space; abide by the rules as posted on the lab doors, and abide by your lab safety training through WHMIS.

Ambrose University Important Policies & Procedures:

Registration

Registration is the process of selecting and enrolling in classes for upcoming semesters. Only students who are registered will be permitted to attend class and receive a grade for the course. You are responsible for ensuring that the courses you take are appropriate for your program, that they do not have any scheduling conflicts, that they have the necessary prerequisites and that they meet all degree requirements.

Withdrawal From A Course

Prior to the Add/Drop deadline: through the student registration system whereby course(s) will be removed with no academic or financial penalty. After the Add/Drop deadline and until the Withdrawal deadline: through submission of the 'Withdrawal from Course' form whereby course(s) will remain on the permanent academic record/transcript with the symbol 'W'. (See ambrose.edu/registrar/request-forms.) Students who withdraw from more than 30 credits attempted at Ambrose University will be required to withdraw from their program. Students considering withdrawing from courses are encouraged to discuss with their Faculty Advisor and/or the Office of the Registrar questions relating to their withdrawal decision specifically relating to financial assistance, study permit requirements, prerequisites for subsequent courses, readmission, and/or graduation timeline. Students who do not formally withdraw from a course are still considered registered in the course, even if they are no longer attending classes. In this case, students will be assigned a grade based on coursework completed as per the course syllabus and are responsible to pay the tuition and fees assessed for the course. Under extenuating circumstances, students may request from the Office of the Registrar a course(s) withdrawal after the Withdrawal deadline and until the last day of classes. Extenuating circumstances typically consider situations such as medical emergencies, compassionate grounds, or unforeseen conditions/situations beyond the students' control that arise after the start of the semester and are considered on a case-by-case basis. Supporting documentation from a physician or Registered Health Professional must accompany this request.

Coursework Extensions

Should a request for a time extension on coursework exceed the end of the term, a *Coursework Extension Application* must be completed and submitted to the Office of the Registrar. The extension (if granted) will be recorded on the student record. Extensions are granted at the discretion of the instructor and registrar. If granted, time extensions do not excuse you from a final examination where one has been scheduled for the course. More conditions apply.

Exam Scheduling

Students who find a conflict in their exam schedule must submit a *Revised Final Exam Time Application* to the Office of the Registrar by the deadline noted in the Academic Calendar. Requests will be considered for the following reasons only: 1) the scheduled final examination slot conflicts with another exam; or 2) the scheduled final examination slot results in three consecutive examination periods. Travel is not considered a valid excuse for re-scheduling or missing a final exam.

Communication

Your Ambrose email account is the University's primary and official mode of communication with you. Information delivered to your Ambrose email is considered official notification. Ambrose University is not responsible for your failure to receive important information delivered to your Ambrose email.

Lecture Recording

The recording of lectures or any other classroom academic activity, other than an audio recording as an accommodation, is prohibited except at the discretion of the instructor. Any use other than that agreed upon with the instructor constitutes academic misconduct and may result in suspension or expulsion. Permission to allow a lecture recording is not a transfer of any copyrights, so such recordings may be used only for individual or group study with other students enrolled in the same class and may not be reproduced, transferred, distributed or displayed in any public or commercial manner. Student must destroy recordings in any, and all formats at the end of the semester in which they are enrolled in the class. All students recording lectures, must sign the Permission Form to audio record lectures which is available through the Office of the Registrar.

Standards of Behaviour in the Classroom Setting

Learning is an active and interactive process, a joint venture between student and instructor and between student and student. Some topics covered within a class may lead to strong reactions and opinions. It is important that Students understand that they are entitled to hold contradictory beliefs and that they should be encouraged to engage with these topics in a critical manner. Committing to this type of "active learning" significantly increases the learning experience for both teacher and student, and reflects the Christian imperative to pursue truth, which lies at the heart of the Ambrose educational experience. However, active discussion of controversial topics will be undertaken with respect and empathy, which are the foundations of civil discourse in the Classroom Setting. Primary responsibility for managing the classroom rests with the instructor. The instructor may direct a student to leave the class if the student engages in any behaviour that disrupts the classroom setting. If necessary, Ambrose security will be contacted to escort the student from class.

Academic Integrity

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Academic dishonesty is taken seriously at Ambrose University as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else's ideas, words, or work as one's own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to acknowledge to another person's ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university. Students are expected to be familiar with the policies in the current Academic Calendar that

deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student's permanent record.

Academic Policies

It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Academic Calendar. The academic calendar can be found at <https://ambrose.edu/academics/academic-calendar>

Privacy

Personal information (information about an individual that may be used to identify that individual) may be required as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at privacy@ambrose.edu.

Academic Success and Supports

Accessibility Services

Academic accommodation is provided to Ambrose students with disabilities in accordance with the Alberta Human Rights Act and the Canadian Charter of Rights and Freedoms. Provision of academic accommodation does not lower the academic standards of the university nor remove the need for evaluation and the need to meet essential learning outcomes. Reasonable accommodations are tailored to the individual student, are flexible, and are determined by considering the barriers within the unique environment of a postsecondary institution. It can take time to organize academic accommodations and funding for disability-related services. Students with a disability who wish to have an academic accommodation are encouraged to contact Accessibility Services as early as possible to ensure appropriate planning for any needs that may include accommodations. Staff can then meet with students to determine areas to facilitate success, and if accommodations are required, ensure those accommodations are put in place by working with faculty.

Learning Services

Learning Services provides support with

- **research and communication skills** (e.g., writing a paper, researching, giving a presentation), and
- **subject-specific skills** (e.g., solving a chemistry problem, reconciling a general ledger, understanding a philosophical argument).

We offer workshops, one-to-one tutoring, and more, and all of our services are **free** to students currently enrolled at Ambrose University. To learn more, please visit <https://ambrose.edu/sas/learning-services>.

Mental Health Support

All of us need a support system. We encourage students to build mental health supports and to reach out when help is needed.

On Campus:

- Counselling Services: ambrose.edu/counselling
- For immediate crisis support, there are staff on campus who are trained in Suicide Intervention Skills and can help you access mental health support. See <https://ambrose.edu/student-life/crisissupport> for a list of staff members.
- For additional wellness resources go to the Ambrose wellness page: <https://ambrose.edu/wellness>

Off Campus:

- Distress Centre - 403-266-4357
- Alberta Mental Health Helpline - 1-877-303-2642 (Toll free)
- Sheldon Chumir Health Care Centre - 403-955-6200
- Emergency - 911

Sexual Violence Support

We are committed to supporting students who have experienced gender based sexual violence in the past or while at Ambrose. Many of the staff, faculty, and student leaders have received Sexual Violence Response to Disclosure training. We will support you and help you find the resources you need and you can access information about reporting. Information about the Sexual Violence policy and on and off campus supports can be found on our website— ambrose.edu/sexual-violence-response-and-awareness.

Off Campus:

- Alberta's Oneline for Sexual Violence - 1-866-403-8000 call or text
- Clinic: Sheldon Chumir Health Centre - 403-955-6200
- Calgary Communities Against Sexual Abuse - 403-237-5888
- Chat: www.calgarycasa.com

Note: Students are strongly advised to retain this syllabus for their records.