

Course ID:	Course Title:	Fall 2023
BIO 495	Independent Research Study in Biology I	Prerequisite: 15 credits of senior BIO courses with a current GPA of 3.0 or higher and approval of an independent research project application
		Credits: 3

Class Information		Instructor Information		Important Dates	
Delivery:	In Lab	Instructor:	Dr. Damilola Adingupu	First Day of Class:	Sept. 06
Days:	To be determined by the student and supervisor	Email:	<a href="mailto:dami.adingupu@ambrose.edu">dami.adingupu@ambrose.edu</a>	Last Day to Add/Drop:	Sept. 17
Time:	N/A	Phone:		Last Day to Withdraw:	Nov. 20
Room:	N/A	Office:	L 2086	Last Day to Apply for Coursework Extension:	Nov. 23
Lab/Tutorial:	N/A	Office Hours:	by appointment	Last Day of Class:	Dec. 11
Final Exam:	N/A				

### Important Dates and Information

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

### Course Description

This course is the first course of a two-semester research project (Fall and Winter). In this course, the students will choose a research project of their choice, perform background research, pilot experiments, and write a research proposal. The research will continue in Course Bio 497. This course will rely on independent work, in conjunction with a research supervisor whom you will meet with on a regular basis.

### Guiding Principles for Bio 495 and Bio 497 courses

- To provide students with the opportunity to gain experience in research techniques, academic writing,

critical thinking, and/or project design in a research area of personal interest

- To mentor undergraduate students to explore a new research area and to experience research in context
- To provide an opportunity to complete the study/exploration of a subject that is not offered or accessible through a course listed in the University Calendar, commonly in the Biology Department.
- In accordance with university regulations, students undertaking a Bio 495 or Bio 497 project may not receive compensation in any amount for work that is completed as part of the course.

### **Expectations of Students**

- The student commits to regular and sustained engagement with their research project and regular communication with their supervisor.
- Although time commitment to research projects may vary from week to week, in general students are expected to devote approximately 8-10 hours per week in the research environment to their project if the project is undertaken in the Fall or Winter term, in addition to reading and preparation.
- Students, whether working on their projects in the research environment or not, should document their productivity for regular review with their research supervisor. This might include notes/summaries of papers, evidence of data analysis, etc.
- The student agrees to write a research proposal together with their supervisor, submit a final research paper, and present their work at the Ambrose Research Conference.

### **Expected Learning Outcomes**

At the end of the course, students should have acquired the following skills:

1. Students will gain a greater understanding of fundamental biological and physiological principles.
2. Students will learn the process of developing an experimental protocol and carrying out the experimental process.
3. Students will learn the laboratory techniques essential to physiological research.
4. Students will design and carry out a research project and be able to present this in written and oral formats.

### **Textbooks**

No textbook is required.

Topic-specific research papers will be used.

### **Course Schedule**

Students will choose a research topic of choice and perform a literature search and literature summary before writing up a research proposal (identifying a new research question and describing an experimental protocol). Pilot experiments will be completed by the student.

### **Requirements:**

- At least 80 hours/semester of research time. Time in the lab must be logged
- a scheduled weekly meeting, either in-person or online, with the project supervisor
- **Tentative Guidelines for Schedule:**

Oct. 1 – submission of an outline for the project:

- conduct a thorough current literature review on the research topic.
- provide an outline and timeline for the project.

Nov. 1 – a working progress report.

- provide a current state of research progress

Dec. 12 – submission of a research proposal

- a research proposal should include the following sections:
  - Abstract
  - Introduction/Background Information
  - Research Objectives/Hypothesis
  - Methods/Predicted Outcomes

**Evaluation Methods:**

<b>Evaluation Methods</b>	<b>Due Date</b>	<b>Weighting</b>
Outline	October 1, 2021	25%
The current state of progress (< 5 pages)	November 1, 2021	25%
Research Proposal	December 13, 2021	50%
Total		100%

## Grade Summary:

The available letters for course grades are as follows:

Grade	Percent	Grade Point Value	Description
A+	96-100	4.00	Outstanding
A	92-95	4.00	Excellent - superior performance, showing a comprehensive understanding of the subject matter.
A-	88-91	3.70	
B+	83-87	3.30	
B	78-82	3.00	Good-clearly above-average performance with knowledge of the subject matter generally complete.
B-	73-77	2.70	
C+	68-72	2.30	
C	64-67	2.00	Satisfactory – basic understanding of the subject matter. A grade point average below 2.00 is not sufficient for promotion.
C-	60-63	1.70	Minimum grade required if needed as a prerequisite course
D+	55-59	1.30	
D	51-54	1.00	Minimal pass – marginal performance; generally insufficient preparation for subsequent courses in the same subject.
F	<50	0	Fail – unsatisfactory performance or failure to meet course requirements.

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 the student registration system. Printed grade sheets are not mailed out.

## **Attendance:**

While no formal lectures will be involved, regular meetings with the supervisor are required (weekly is suggested). This course requires you to be working independently – but meetings will ensure that you don't fall behind.

- the student is required to spend a minimum of 80 hours/semester on his/her independent research project per course
- the student is required to present his/her work at the Ambrose Research Conference (ARC) at the end of March
- the student is required to have a short, monthly, or bi-monthly meeting with the independent research study supervisor.

## **Other:**

### **Plagiarism:**

Plagiarism is a very serious academic offense that involves presenting work in a course as if it were the result of one's own study and investigation when, in fact, it is the work of someone else. Plagiarism takes place when:

- an essay or other work is copied from another source, including your peer's work, or using artificial intelligence and submitted as one's own
- parts of a work, including words, ideas, images, or data, are taken from a source without acknowledgment of the originator.
- work presented for one course is also submitted for another course without the prior agreement of the instructors involved.
- another person prepares the work that is submitted as one's own.
- substantial editorial or compositional assistance from another person is received on work that is submitted as one's own.

## Ambrose University Important Information:

### Communication

All students have received an Ambrose e-mail account upon registration. It is the student's responsibility to check this account regularly as the Ambrose email system will be the professor's instrument for notifying students of important matters (cancelled class sessions, extensions, requested appointments, etc.) between class sessions.

### Exam Scheduling

Students who find a conflict in their exam schedule must submit a Revised Examination Request form to the Registrar's Office by the deadline date; please consult the Academic Calendar. Requests will be considered for the following reasons only: 1) the scheduled final examination slot conflicts with another exam; 2) the student has three final exams within three consecutive exam time blocks; 3) the scheduled final exam slot conflicts with an exam at another institution; 4) extenuating circumstances. Travel is not considered a valid excuse for re-scheduling or missing a final exam.

### 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. Please refer to your professor regarding their electronic etiquette expectations.

### 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/content/academic-calendar-2>.

### 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](mailto:privacy@ambrose.edu).

### 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 are normally granted for 30 days beyond the last day of the term.

Normally, Course Extension Applications will be considered only when all of the following conditions are met:

- the quality of prior course work has been satisfactory;
- circumstances beyond your control, such as an extended illness or death of a family member, make it impossible for you to complete the course work on time; and
- you submit *Coursework Extension Application* to the Office of the Registrar on or before the deadline specified in the Academic Schedule.

If granted, time extensions do not excuse you from a final examination where one has been scheduled for the course.

A temporary grade of TX will be assigned until a final grade is submitted in accordance with the new deadline. A final grade of F will apply to:

- all course work submitted after the end of the semester unless a coursework extension has been granted; and all course work submitted after the revised due date provided by an approved extension to coursework.

## 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.

### **Ambrose Writing Services**

Ambrose Writing services provides academic support in the four foundational literacy skills—listening, speaking, reading, and writing. It also assists students with critical thinking and the research process. Throughout the academic year, students can meet with a writing tutor for personalized support, or they can attend a variety of workshops offered by Academic Success. These services are free to students enrolled at Ambrose University. Academic Success serves all students in all disciplines and at all levels, from history to biology and from theatre to theology. To learn more, please visit <https://ambrose.edu/writingcentre>

### **Ambrose Tutoring Services**

Ambrose Tutoring Services provides support in specific disciplinary knowledge, especially in high-demand areas such as chemistry, philosophy, math and statistics, and religious studies. These tutors also coach students in general study skills, including listening and note-taking. During the academic year, Ambrose Tutoring Services offers drop-in tutoring for courses with high demand; for other courses, students can book a one-to-one appointment with a tutor in their discipline. These services are free to students enrolled at Ambrose University. To learn more, please visit <https://ambrose.edu/tutoring>.

### **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](https://ambrose.edu/counselling)
- Peer Supportive Listening: One-to-one support in Student Life office. Hours posted at [ambrose.edu/wellness](https://ambrose.edu/wellness).
- For immediate crisis support, there are staff on campus who are trained in Suicide Intervention and Mental Health First Aid. See [ambrose.edu/crisissupport](https://ambrose.edu/crisissupport) for a list of staff members.

#### Off Campus:

- Distress Centre - 403-266-4357
- Sheldon Chumir Health Care Centre - 403-955-6200
- Emergency - 911

### **Sexual Violence Support**

All staff, faculty, and Residence student leaders have received *Sexual Violence Response to Disclosure* training. We will support you and help you find the resources you need. There is a website with on and off campus supports – [ambrose.edu/sexual-violence-response-and-awareness](https://ambrose.edu/sexual-violence-response-and-awareness).

#### Off Campus:

- Clinic: Sheldon Chumir Health Centre - 403-955-6200
- Calgary Communities Against Sexual Abuse - 403-237-5888

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