



COURSE OUTLINE

1. **Course:** ZOOL 435, Entomology - Fall 2020

Lecture 01: MWF 11:00 - 11:50 - Online

Instructor	Email	Phone	Office	Hours
Dr Mindi Summers	mind.summers@ucalgary.ca	403 220-8761	BI 041	Fridays, 11:00-11:50am, via Zoom

Online Delivery Details:

Some aspects of this course are being offered in real-time via scheduled meeting times. For those aspects you are required to be online at the same time.

Please use D2L>Communication>Zoom to join ALL Synchronous Course Activities. Using the link available through the D2L course page will ensure that you are logging in with your @ucalgary email address so that you can be assigned to your team's break-out room.

Lecture organization: Zoology 435 lecture activities are designed to be completed **asynchronously** through seven online D2L modules with **synchronous** discussions and collaborative active learning activities during the scheduled lecture time on Wednesdays. Lecture module and laboratory content and skills can also be discussed during optional Friday help hours (during scheduled lecture times). During the first week of the course, we will have a synchronous "Welcome to Zoology 435" lecture and you will also sign-up for a synchronous insect orientation meeting. During the last week of the course we will have an Insect Festival during the scheduled lecture times on Monday and Wednesday. You should plan for approximately 3 hours to complete asynchronous activities each week, and 1 hour to participate in synchronous Wednesday discussions and activities.

Asynchronous. Online module materials will be posted bi-weekly on Monday mornings and you will have two weeks to work through and complete the assignments before the Friday 5pm due date (see Course Schedule).

Synchronous (during scheduled lecture times): During each week of the term, we will meet synchronously as a class on Wednesdays. During the first week of the term (Sept 9), we will have a synchronous "Welcome to Zoology 435!" lecture (the recording will be made available after class). During weeks 2-12, we will meet together for science communication sessions/workshops (required) or for informal coffee hours (optional) to discuss the lecture module or laboratory content (see Course Schedule). During the last week of the course we will have an Insect Festival during the scheduled class time on Monday and Wednesday (Dec 7 & 9).

Synchronous Wednesday science communication/workshops (required - Sept 16, Sept 30, Oct 14, Oct 28, Nov 18, & Nov 25): Due to the interactive activities that require group participation, synchronous attendance is required to receive credit for participating in Wednesday science communication sessions/workshops. Attendance at all six sessions/workshops is a requirement for a final grade of A or B in the course. Participation in two sessions is required for a C, and one session for a D (see Course Marking Scheme). If you are unable to attend a session/workshop, please contact the instructor immediately. Whether an alternative assignment is possible will be decided on a case-by-base basis. When possible, recordings and materials from the sessions will be posted following the session.

Synchronous Wednesday coffee hours (optional): Attending coffee hours is optional, but recommended as an opportunity to discuss lecture content. Since students will be sharing video and participating in discussions during coffee hours, these sessions will not be recorded. Discussion topics will be summarized and posted on D2L and the course's Piazza discussion board.

In addition to the Wednesday meetings, you can also attend optional synchronous sessions during lecture on Monday and Fridays. On Mondays, we will have class representative meetings from 11:00-11:30am. On Fridays (and by appointment), we will have drop-in help sessions. During help sessions, you can meet with the instructional team to discuss any aspect of the course as an individual or a group.

Synchronous (outside of scheduled lecture times): During the first week of the term, you will sign-up for an insect orientation meeting to discuss your sampling plan for the insect collection. During the week of November 17-20, students who have submitted a review for the Insect Book & Movie Club will receive an invitation to join a discussion section. All effort will be made to find convenient times for you to attend these and any other scheduled sessions outside of lecture times. These sessions will not be recorded.

Lab organization: Zoology 435 lab exercises and your insect collection are designed to be completed **asynchronously** through online D2L assignments with **synchronous support and check-ins** during your scheduled laboratory sessions. In total, you should plan to spend approximately five hours per week on the laboratory component of Zoology 435 (online laboratory assignments, insect collection research project, and weekly check-in meetings). It is recommended that you work on lab exercises and your insect

collection with other students and your GTA as much as you can during your scheduled laboratory time. Working synchronously on the exercises or collection is an excellent way to ask and answer questions in real-time.

Asynchronous. Lab exercises will be released on the Friday afternoon before your scheduled laboratory session, and are due by midnight on the day of your lab (either Tuesday at midnight or Thursday at midnight). The lab exercises are designed so that you can start and complete them during your scheduled lab time, but you can also start (and complete) the exercises before lab. After completing the lab exercises, you will be prepared to work on one component for your insect collect (e.g., pinning or identification of a major group). You can work on the weekly goals during your laboratory session, but will also need to schedule additional time to work on your insect collect outside of class.

Synchronous. During your scheduled laboratory time, you can work with others on your laboratory assignment and insect collection (optional) and you will also meet synchronously to check-in with your research team and the instructional team (approximately 30-45 minutes per week) using Zoom (required). During these meetings you will give an update on your insect collection, provide constructive feedback to other students, and ask any questions about the lab exercises and collection. In order to practice giving and receiving constructive feedback, participation is required for 9/10 of these check-ins to receive an overall course grade of an A, 8/10 for a B, 7/10 for a C, and 6/10 for a D. A written reflection can be turned in with a free-pass for one missed check-in during the term.

Course Site:

D2L: ZOOL 435 L01-(Fall 2020)-Entomology

Piazza discussion board: piazza.com/ucalgary.ca/fall2020/zool435/home

iNaturalist insect survey: <https://www.inaturalist.org/projects/zool435-insect-survey-2020>

You will also be given access to a Google Team folder to share your work with the instructional team and other students throughout the term.

Note: Students must use their U of C account for all course correspondence.

Course email and discussion board policy

We will be using a Piazza discussion board for all general course questions. You can post questions and ideas, and respond to other student's ideas anonymously or with your given name to this board. We hope this board allows everyone to stay up to date on the course and have their questions answered quickly!

We will reply to the discussion board, post notices, and send emails between 8:30am-4:30pm Monday-Friday. We will do our best to read and respond to emails within 24 hours Monday-Friday, and emails received during the weekend by the following Tuesday. If you do not receive a response within the time-frame, please follow-up in email or "in person" (sometimes emails or discussion posts are lost in spam filters or mistakenly overlooked!).

2. Requisites:

See section [3.5.C](#) in the Faculty of Science section of the online Calendar.

Prerequisite(s):

Biology 371.

3. Grading:

The University policy on grading and related matters is described in [F.1](#) and [F.2](#) of the online University Calendar. In this course, overall grades will be determined following the information outlined below.

In this course, you will earn grades based on **the requirements you choose to complete**, and you do not have to complete all requirements. All assessments in this course are designed to meet each of the course learning outcomes, and completion of more requirements shows higher levels of proficiency towards this learning outcome. The level of work required for a particular assignment to be considered complete are described in marking schemes available on D2L. [There are no examinations in this course.](#)

This type of grading is called **specifications grading** and was chosen to allow student choice and flexibility in how to showcase your learning and mastery of course learning outcomes.

To earn a given letter grade, you must complete **all** the requirements listed in the column for that letter grade.

Outcomes	Assessment	Requirements for each letter grade**
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		D	C	B	A
Insect Biology (Lecture)	Module 1: Course introduction	Yes	Yes	Yes	Yes
	Modules 2-6: Insect Biodiversity & Evolution; Body Plans; Ecology; Behaviour; and Insects & Society	Completion of activities for 4/5 modules	Completion of activities for 4/5 modules	Completion of activities for 5/5 modules	Completion of activities for 5/5 modules
	Module 7: Course wrap-up	X	Yes	Yes	Yes
Science Communication (Lecture)	Science communication sessions	Participation in 1/3 sessions	Participation in 2/3 sessions	Participation in 3/3 sessions	Participation in 3/3 sessions
	Science communication workshops	X	X	Participation in 3/3 workshops	Participation in 3/3 workshops
	Science communication final project	X	X	X	Yes
Collection & Identification (Lab)	Laboratory assignments	Completion of 6/9	Completion of 7/9	Completion of 8/9	Completion of 9/9
	Weekly check-ins	Completion of 6/10	Completion of 7/10	Completion of 8/10	Completion of 9/10
	Insect collection submission 1	100 points	150 points	250 points	350 points
	Insect collection submission 2	100 points	150 points	250 points	350 points

- Please see D2L for a description of all assessments -

** A grade of F will result if you do not successfully meet **all** of the requirements for a D grade.

** To achieve a "+" letter designation for B, C, or D grades, you must exceed **all** of the requirements for the letter grade when possible **OR** you may participate in and complete the assignments associated with our course's "Insects in the Media: Book & Movie Club." To achieve an A+, you must exceed all requirements for an A when possible **AND** participate in and complete the assignments associated with our course's "Insects in the Media: Book & Movie Club."

** You will earn a "-" letter designation if you do not successfully complete **one (and only one)** of the specifications required for a given letter grade **AND** meet all of the specifications for the lower letter grade.

** You will be given **four 'free passes'** that can be used to re-submit work or extend deadlines. You can resubmit work associated with: a weekly check-in; insect collection submission 1; insect collection submission 2; or the science communication final project, in order to get the work to an "acceptable" standard. The free pass and re-submitted assignment must be submitted **within one week (7 days) of the graded assignment being returned or mark being posted. There is only one free pass per assignment and one re-submission per free pass.** The free pass must be completed and attached to the re-submitted assignment. Re-submitted material must also be accompanied by the original graded assignment and a brief statement (approximately one paragraph) describing how you have revised your assignment in response to that feedback. Free passes can also be used to hand-in any assignment or course activity **up to 1 week AFTER the due date**, without penalty. An additional free-pass can then NOT be used to resubmit this assignment following marking. Free passes are **not** transferable.

4. Missed Components Of Term Work:

The university has suspended the requirement for students to provide evidence for absences. Please do not attend medical clinics for medical notes or Commissioners for Oaths for statutory declarations.

In the event that a student legitimately fails to submit any online assessment on time (e.g. due to illness etc...), please contact the course coordinator, or the course instructor if this course does not have a coordinator to arrange for a re-adjustment of a submission date. Absences not reported within 48 hours will not be accommodated. If an excused absence is approved, then the percentage weight of the legitimately missed assignment could also be pro-rated among the components of the course.

5. Scheduled Out-of-Class Activities:

There are no scheduled out of class activities for this course.

6. Course Materials:

Textbook: The Insects - An Outline of Entomology 5th edition

The e-textbook is available free and for unlimited users through the library at <https://ebookcentral-proquest-com.ezproxy.lib.ucalgary.ca/lib/ucalgary-ebooks/detail.action?docID=1775470>

Additional materials: Additional materials will need to be made or purchased for collecting insects. A supplies guide is available on D2L and speciality items are available for purchase at the bookstore.

In order to successfully engage in their learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology:

- A computer with a supported operating system, as well as the latest security, and malware updates;
- A current and updated web browser;
- Webcam/Camera (built-in or external);
- Microphone and speaker (built-in or external), or headset with microphone;
- Current antivirus and/or firewall software enabled;
- Stable internet connection.

For more information please refer to the UofC [ELearning](#) online website.

7. Examination Policy:

You may use any course materials and outside resources when working on activities and assignments related to this course. You will be given opportunities to work with other students during synchronous lecture and laboratory sessions, provided with a course discussion board to ask and answer questions with your peers and the instructional team, and you are encouraged to arrange study groups outside of class time to work on assignments. All work generated is expected to be your own, meaning that you have collected and identified the insects in your collection, designed and created your science communication project, and that all work completed as part of lecture and laboratory modules is your own. Collaboration is a learning goal of this course and it is expected that everyone is learning how to collaborate and share ideas while maintaining academic integrity. Please acknowledge the contribution of others to the work you submit, and discuss any questions about academic integrity and what level of collaboration is acceptable for particular assignments with the instructor.

Students should also read the Calendar, [Section G](#), on Examinations.

8. Approved Mandatory And Optional Course Supplemental Fees:

There are no mandatory or optional course supplemental fees for this course.

9. Writing Across The Curriculum Statement:

For all components of the course, in any written work, the quality of the student's writing (language, spelling, grammar, presentation etc.) can be a factor in the evaluation of the work. See also Section [E.2](#) of the University Calendar.

10. Human & Living Organism Studies Statements:

If you agree, your course work may be used for research purposes. Your responses will remain anonymous and confidential. Grouped data (no individual responses) may be used in academic presentations and publications. Participation in such research is voluntary and will not influence grades in this course. Students' signed consent forms will be withheld from instructors until after final grades are submitted. More information will be provided at the time student participation is requested.

See also [Section E.5](#) of the University Calendar.

STUDIES IN THE BIOLOGICAL SCIENCES INVOLVE THE USE OF LIVING AND DEAD ORGANISMS. Students taking laboratory and field-based courses in these disciplines can expect involvement with and experimentation on such materials. Students perform dissections on dead or preserved organisms in some courses. In particular courses, students experiment on living organisms, their tissues, cells, or molecules. Sometimes field work requires students to collect a variety of living materials by many methods, including humane trapping.

All work on humans and other animals conforms to the Helsinki Declaration and to the regulations of the Canadian Council on Animal Care. The Department strives for the highest ethical standards consistent with stewardship of the environment for organisms whose use is not governed by statutory authority. Individuals contemplating taking courses or majoring in one of the fields of study offered by the Department of Biological Sciences should ensure that they have fully considered these issues before enrolling. Students are advised to discuss any concern they might have with the Undergraduate Program Director of the Department.

Students are expected to be familiar with [Section SC.4.1](#) of the University Calendar.

11. Reappraisal Of Grades:

A student wishing a reappraisal, should first attempt to review the graded work with the Course coordinator/instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. Non-academic grounds are not relevant for grade reappraisals. Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See [Section I.3](#) of the University Calendar.

- a. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within **ten business days** of either being notified about the mark, or of the item's return to the class. If the student is not satisfied with the outcome, the student shall submit the Reappraisal of Graded Term work form to the department in which the course is offered within 2 business days of receiving the decision from the instructor. The Department will arrange for a reappraisal of the work within the next ten business days. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected. See sections [I.1](#) and [I.2](#) of the University Calendar
- b. **Final Exam:** The student shall submit the request to Enrolment Services. See [Section I.3](#) of the University Calendar.

12. Other Important Information For Students:

- a. **Mental Health** The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, [Mental Health Services Website](#)) and the Campus Mental Health Strategy website ([Mental Health](#)).
- b. **SU Wellness Center:** For more information, see www.ucalgary.ca/wellnesscentre or call [403-210-9355](tel:403-210-9355).
- c. **Sexual Violence:** The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email (svsa@ucalgary.ca) or phone at [403-220-2208](tel:403-220-2208). The complete University of Calgary policy on sexual violence can be viewed at (<https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf>)
- d. **Misconduct:** Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties. Examples of academic misconduct may include: submitting or presenting work as if it were the student's own work when it is not; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; collaborating in whole or in part without prior agreement of the instructor; borrowing experimental values from others without the instructor's approval; falsification/ fabrication of experimental values in a report. **These are only examples.**

- e. **Academic Accommodation Policy:** Students needing an accommodation because of a disability or medical condition should contact Student Accessibility Services in accordance with the procedure for accommodations for students with disabilities available at [procedure-for-accommodations-for-students-with-disabilities.pdf](#).

Students needing an accommodation in relation to their coursework or to fulfill requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to the Associate Head, Undergraduate of the Department of Biological Sciences, Heather Addy by email addy@ucalgary.ca or phone 403 220-6979. Religious accommodation requests relating to class, test or exam scheduling or absences must be submitted no later than **14 days** prior to the date in question. See [Section E.4](#) of the University Calendar.

- f. **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIP). Students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information, see [Legal Services](#) website.
- g. **Student Union Information:** [VP Academic](#), Phone: [403-220-3911](tel:403-220-3911) Email: suvpaca@ucalgary.ca. SU Faculty Rep., Phone: [403-220-3913](tel:403-220-3913) Email: sciencerep@su.ucalgary.ca. [Student Ombudsman](#), Email: ombuds@ucalgary.ca.
- h. **Surveys:** At the University of Calgary, feedback through the Universal Student Ratings of Instruction ([USRI](#)) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.
- i. **Copyright of Course Materials:** All course materials (including those posted on the course D2L site, a course website, or used in any teaching activity such as (but not limited to) examinations, quizzes, assignments, laboratory manuals, lecture slides or lecture materials and other course notes) are protected by law. These materials are for the sole use of students registered in this course and must not be redistributed. Sharing these materials with anyone else would be a breach of the terms and conditions governing student access to D2L, as well as a violation of the copyright in these materials, and may be pursued as a case of student academic or [non-academic misconduct](#), in addition to any other remedies available at law.

Course Outcomes:

- Describe the external and internal structure of a generalized insect and adaptations for specialized feeding, locomotion, gas exchange and other biological phenomena
- Explain the evolution of insects including the major events, such as the development of wings and complete metamorphosis, and the relative species diversity that these changes have brought about
- Describe the significant aspects in the evolution of insect reproductive behaviour leading to the most complex social behaviour known
- List the orders of insects and the major features of each as well as the phylogenetic relationships among the orders
- Identify insects to order level by sight and to family level or below using identification aids
- Compare the importance of different groups of insects with respect to human and domestic animal health, food production and other human activities
- Explain the contribution of insect models to the development of evolutionary biology, genetics, developmental biology, physiology, ecology and other disciplines in biology

ZOOLOGY 435: Entomology - Fall 2020

Course Schedule

Week	Lecture Topic	Lab Topic	Synchronous Activities	Due Dates
1 Sept 8-11	1: Course introduction <i>Estimated time: 3 hours</i>	NA	Wed Sept 9: Welcome to Zoology 435! (11-11:50am) Insect collection orientation meeting (Sign-up online)	Fri Sept 11: Module 1 Activities

2 Sept 14-18	2: Insect biodiversity & evolution <i>Estimated time: 6 hours</i>	1: Insect collection <i>Estimated time: 5 hours</i>	T/Th: Weekly Check-In (Scheduled lab time) Wed Sept 16: Science communication session 1 (11-11:50am)	T/Th: Lab assignment
3 Sept 21-25		2: Insect pinning <i>Estimated time: 5 hours</i>	T/Th: Weekly Check-In (Scheduled lab time) Wed Sept 23: Coffee hour (11-11:50am)	T/Th: Lab assignment Fri Sept 25: Module 2 Activities
4 Sept 28-Oct 2	3: Insect body plans <i>Estimated time: 6 hours</i>	3: Insect identification - Major insect orders <i>Estimated time: 5 hours</i>	T/Th: Weekly Check-In (Scheduled lab time) Wed Sept 30: Science communication session 2 (11-11:50am)	T/Th: Lab assignment
5 Oct 5-9		4: Insect identification - Odonata & Orthoptera <i>Estimated time: 5 hours</i>	T/Th: Weekly Check-In (Scheduled lab time) Wed Oct 7: Coffee hour (11-11:50am)	T/Th: Lab assignment Fri Oct 9: Module 3 Activities
6 Oct 12-16	4: Insect life history & ecology <i>Estimated time: 5 hours</i>	5: Insect identification - Lepidoptera <i>Estimated time: 5 hours</i>	T/Th: Weekly Check-In (Scheduled lab time) Wed Oct 14: Science communication session 3 (11-11:50am)	T/Th: Lab assignment Fri Oct 16: Insect collection submission 1
7 Oct 19-23		6: Insect identification - Hemiptera <i>Estimated time: 5 hours</i>	T/Th: Weekly Check-In (Scheduled lab time) Wed Oct 21: Coffee hour (11-11:50am)	T/Th: Lab assignment Fri Oct 23: Module 4 Activities
8 Oct 26-30	5: Insect communication & behaviour <i>Estimated time: 6 hours</i>	7: Insect identification - Coleoptera <i>Estimated time: 5 hours</i>	T/Th: Weekly Check-In (Scheduled lab time) Wed Oct 28: Science communication workshop 1 (11-11:50am)	T/Th: Lab assignment
9 Nov 2-6		8: Insect identification - Hymenoptera <i>Estimated time: 5 hours</i>	T/Th: Weekly Check-In (Scheduled lab time) Wed Nov 4: Coffee hour (11-11:50am)	T/Th: Lab assignment Fri Nov 6: Module 5 Activities
Fall break				
10 Nov 16-20	6: Insects &	9: Insect identification - Diptera <i>Estimated time: 5 hours</i>	T/Th: Weekly Check-In (Scheduled lab time) Nov 18: Science communication workshop 2 (11-11:50am)	Mon Nov 16: Insect book & movie club submission (optional) T/Th: Lab assignment

11 Nov 23-27	Society <i>Estimated time to complete: 6 hours</i>	Optional Drop-In	T/Th: Weekly Check-In (Scheduled lab time) Nov 25: Science communication workshop 3 (11-11:50am)	Mon Nov 23: Science communication materials Fri Nov 27: Insect collection submission 2
12 Nov 30-Dec 4		Optional Drop-In	Wed Dec 2: Coffee hour (11-11:50am)	Fri Dec 4: Module 6 Activities
13 Dec 7-9	7: Course wrap-up <i>Estimated time: 3 hours</i>	NA	Mon Dec 7: Insect Fest Part I (11-11:50am) Wed Dec 9: Insect Fest Part II (11-11:50am)	Wed Dec 9: Module 7 Activities

Use D2L>Communication>Zoom to Join ALL Synchronous Activities (Labs, Weekly Check-Ins, Communication Sessions, Communication Workshops, Coffee Hours, and optional activities – Pollinator check-in meetings, class reps meetings, Dr. Summers’ help sessions, & the Book & Movie Club). Using the D2L link will ensure that you are logging in with your @ucalgary email address so that you can be assigned to your team’s break-out room.

Optional synchronous activities:

Mondays 11-11:30am: Class representative meetings - Please volunteer to be a class representative! Class reps are currently enrolled students in Zoology 435 who volunteer to collect and share student feedback on the course – you can attend any meetings at any time (no commitment is required). During our weekly meeting, class reps first share out ideas and comments from students and then we discuss ways to improve the course. Class reps will also lead collection and analysis of mid-semester feedback on the course. If you can’t attend the meetings yourself, please take the time to talk with the class reps so that your experiences and ideas are heard!

Fridays 11-11:50am and by appointment: Help sessions – On Fridays, Dr. Summers will be available to meet with individuals or groups to discuss any aspect of the course. If you would like to schedule a help session outside of these hours with Dr. Summers or another member of the instructional, please email – we are looking forward to talking with you!

November 17-20, time TBD: Insect in the Media: Book & Movie Club – There are many fiction and non-fiction books, as well as movies, podcasts, and television series that focus on insects! If you submit a written review for the Book & Movie Club (details in course outline and on D2L), you will be sent an invitation to join a Book & Movie club discussion session.

Electronically Approved - Aug 27 2020 08:41

Department Approval

Electronically Approved - Aug 28 2020 14:33

Associate Dean's Approval

