

UNIVERSITY OF CALGARY
DEPARTMENT OF BIOLOGICAL SCIENCES
COURSE OUTLINE

1. Course: **ZOOLOGY 435 - ENTOMOLOGY**

Lecture Sections: L01 MWF 11:00 SA 015 Fall 2015
Labs: B01/02 R 09:00/13:00 BI 046
Instructor(s): Dr. R.W. Longair BI 042 220-7387 longair@ucalgary.ca

On D2L: [ZOOLOGY 435 L01 - \(Fall 2015\) - Entomology](#)

Biological Sciences Department BI 186; (403) 220-3140; biosci@ucalgary.ca

2. **PREREQUISITES:** Biology 313 and one of Biology 371 or Zoology 375, see section 3.5.C in the Faculty of Science section of the online Calendar (<http://www.ucalgary.ca/pubs/calendar/current/sc-3-5.html>)
3. **GRADING:** The University policy on grading and related matters is described in “Academic Regulations, sections F.1 and F.2” of the online University Calendar (<http://www.ucalgary.ca/pubs/calendar/current/f-1.html> and <http://www.ucalgary.ca/pubs/calendar/current/f-2.html>) In determining the overall grade in the course the following weights will be used:

One midterm lecture exam	25 %	One final laboratory ID exam	20 %
Midterm laboratory exam	15 %	One final lecture exam	30 %
Two assignments (@ 5% each)	10 %		100 %

Your letter grade for the course will be determined by summing the weighted numerical scores earned for each component listed above and converted using the table posted on the D2L of the course. **Note:** letter grades are not determined for any individual component but the table may be used to give you an approximate sense of your standing during the term.

4. **Missed Components of Term Work.** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in section 3.6: <http://www.ucalgary.ca/pubs/calendar/current/sc-3-6.html> It is the student's responsibility to familiarize himself/herself with these regulations. See also <http://www.ucalgary.ca/pubs/calendar/current/e-3.html>
5. Dates and times of class exercises held outside of class hours:

Mid Term Exam: Monday, 26 October, 2015 19:00-21:00 TBA

REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY. If you have a conflict with this out-of-class-time activity, please inform your instructor as soon as possible so that alternative arrangements may be made for you.

6. **EXAMINATION POLICY:** No electronic or written aids (eg. cell phones, tablets, computers, PDAs, notes, textbooks) will be allowed during writing of any exams unless expressly indicated. Non-programmable calculators will be permitted to answer quantitative questions on exams, if applicable, and permission to do this will be clearly indicated on the examination paper.
Students should also read the Calendar, Section G, on Examinations: <http://www.ucalgary.ca/pubs/calendar/current/g.html>.
7. In this course, the quality of the student's writing in various written components will be a factor in the evaluation of those components. See also <http://www.ucalgary.ca/pubs/calendar/current/e-2.html>
8. **STUDIES IN THE BIOLOGICAL SCIENCES INVOLVE THE USE OF LIVING AND DEAD ORGANISMS.** See <http://www.ucalgary.ca/pubs/calendar/current/sc-5-1.html> and also <http://www.ucalgary.ca/pubs/calendar/current/e-5.html>

Department Approval _____ ORIGINAL SIGNED _____ Date _____

Associate Dean's Approval for
out of regular class-time activity: _____ ORIGINAL SIGNED _____ Date: _____

9. OTHER IMPORTANT INFORMATION FOR STUDENTS:

- (a) **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 **K. Student Misconduct** (<http://www.ucalgary.ca/pubs/calendar/current/k.html>) to inform yourself of definitions, processes and penalties
- (b) **ASSEMBLY POINTS in case of emergency during class time.** Be sure to **FAMILIARIZE YOURSELF** with the information at <http://www.ucalgary.ca/emergencyplan/assemblypoints>.
- (c) **Student Accommodations:** 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 http://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities_0.pdf.
- Students needing an Accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the Associate Head of Biological Sciences, Dr. H. Addy by email addy@ucalgary.ca or phone 403 220-3140.
- (d) **SAFEWALK:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call **220-5333** for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.
- (e) **FREEDOM OF INFORMATION AND PRIVACY:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, **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 also <http://www.ucalgary.ca/secretariat/privacy>.
- (f) **STUDENT UNION INFORMATION:** VP Academic **Phone:** 220-3911 **Email:** suypaca@ucalgary.ca.
SU Faculty Rep. **Phone:** 220-3913 **Email:** sciencerep@su.ucalgary.ca Website <http://www.su.ucalgary.ca/home/contact.html>.
Student Ombudsman: www.ucalgary.ca/provost/students/ombuds; ombuds@ucalgary.ca 220-6420
- (g) **INTERNET and ELECTRONIC COMMUNICATION DEVICE Information.** You can assume that in all classes that you attend, **your cell phone should be turned off.** Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.

Grading Scale

A	85
A-	80
B+	75
B	70
B-	65
C+	60
C	55
C-	50
D+	45
D	40
F	40

Zoology 435 – ENTOMOLOGY

TEXTS: Required:

The Insects: An Outline of Entomology, Gullan, P.J. & Cranston, P.S., Blackwell Synergy, Latest Edition

A Field Guide to the Insects of America North of Mexico, Borror, D.J. & White, R.E., Peterson Field Guide Series, Houghton Mifflin, Latest Edition.
or other insect identification guide

DATE	LECTURE TOPIC
September 9	Introduction Layman's Guide to Insects
11	Insects and Other Things (Humans, Other Animals, Plants) Insect Morphology and Anatomy
14	Insect Morphology and Anatomy
16	Insect Morphology and Anatomy
18	Insect Morphology and Anatomy
21	Insect Morphology and Anatomy
23	Insect Classification and Phylogeny
25	Insect Classification and Phylogeny
28	Insect Classification and Phylogeny
30	Insect Classification and Phylogeny
October 2	Lecture cancelled – Entomological Society of Alberta meeting
5	Insect Classification and Phylogeny
7	Insect Classification and Phylogeny
9	Fossil insects
12	Thanksgiving – No lecture
14	Reproduction & Development
16	Reproduction & Development
19	Reproduction & Development
21	Reproduction & Development
23	Reproduction & Development
26	Midterm Lecture Exam – lecture cancelled
28	Feeding
30	Feeding
November 2	Feeding
4	Defenses (How NOT to get eaten)
6	Defenses
9	TBA
11	Lecture cancelled - Reading Days
13	Lecture cancelled - Reading Days
16	Insect Social Behaviour
18	Insect Social Behaviour
20	Insect Social Behaviour
23	Insect Social Behaviour
25	Insects and Disease
27	Insects and Disease
30	Insects and Disease
December 2	Insects and Disease
4	Forensic Entomology
7	Extremes of Insects (if time)

Lab Schedule

September	10	Introduction & Bugs on campus
	17	Insect anatomy and morphology A generalized insect and examples of variation
	24	Morphological diversity I – Legs and wings, wing variation, mouth parts, antennae and eyes
October	1	Morphological diversity II - Legs and wings, wing variation, mouth parts, antennae and eyes (cont'd)
	8	Morphological diversity III - Immatures, development and metamorphosis
	15	LAB EXAM (First Hour) Insect Orders: Non-insect hexapods (Protura, Collembola, Diplura); "Apterygote" insects (Archaeognatha & Thysanura)
	22	Insect Orders: Paleoptera (Ephemeroptera & Odonata) Hemimetabolous insects (Orthopteroids, Plecopteroids & Paraneoptera)
	29	Insect Orders: Endopterygotes I - Neuropteroids; Coleoptera; Strepsiptera
November	5	Insect Orders: Endopterygotes II - Hymenoptera
	12	NO LAB – Reading Days
	19	Insect Orders: Endopterygotes III - Antliophora (Diptera, Siphonaptera; Mecoptera)
	26	Insect Orders: Endopterygotes IV - Amphiesmenoptera (Lepidoptera & Trichoptera) and review
December	3	LAB ID EXAM