

UNIVERSITY OF CALGARY
DEPARTMENT OF BIOLOGICAL SCIENCES
COURSE OUTLINE

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

Lecture Sections: L01 MWF 11:00 MS 211 Fall 2016
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: ZOOL 435 L01 - (Fall 2016) - 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	25 %
Midterm laboratory exam	15 %	One final lecture exam	30 %
Assignment	5 %		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 D2L. **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: Tuesday, 1 November, 2016 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 (FOIPPA). 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 12	Introduction Layman's Guide to Insects Insects and Other Things (Humans, Other Animals, Plants)
14	Insect Morphology and Anatomy
16	Insect Morphology and Anatomy
19	Insect Morphology and Anatomy
21	Insect Morphology and Anatomy
23	Video – Life: Insects
26	Lecture cancelled
28	TBA
30	TBA
October 3	Insect Classification and Phylogeny
5	Insect Classification and Phylogeny
7	Insect Classification and Phylogeny
10	Thanksgiving – No lecture
12	Insect Classification and Phylogeny
14	Insect Classification and Phylogeny
17	Insect Classification and Phylogeny
19	Fossil insects
21	Reproduction & Development
24	Reproduction & Development
26	Reproduction & Development
28	Reproduction & Development
31	Reproduction & Development
November 1	Midterm Lecture Exam (Tuesday – out of class)
2	Feeding
4	Feeding
7	Feeding
9	Feeding
11	Reading Days – No Lecture
14	Defenses (How NOT to get eaten)
16	Defenses
18	Defenses
21	Insect Social Behaviour
23	Insect Social Behaviour
25	Insect Social Behaviour
28	Insect Social Behaviour
30	Insects and Disease
December 2	Insects and Disease
5	Insects and Disease
7	Insects and Disease
9	Wrap Up

Lab Schedule

September	15	Introduction & Bugs on campus
	22	Insect anatomy and morphology A generalized insect and examples of variation
	29	Morphological diversity I – Legs and wings, wing variation, mouth parts, antennae and eyes
October	6	Morphological diversity II - Legs and wings, wing variation, mouth parts, antennae and eyes (cont'd)
	13	Morphological diversity III - Immatures, development and metamorphosis
	20	LAB EXAM (First Hour) Insect Orders: Non-insect hexapods (Protura, Collembola, Diplura); "Apterygote" insects (Archaeognatha & Thysanura)
	27	Insect Orders: Paleoptera (Ephemeroptera & Odonata) Hemimetabolous insects (Orthopteroids, Plecopteroids & Paraneoptera)
November	3	Insect Orders: Endopterygotes I - Neuropteroids; Coleoptera; Strepsiptera
	10	NO LAB – Reading Days
	17	Insect Orders: Endopterygotes II - Hymenoptera
	24	Insect Orders: Endopterygotes III - Antliophora (Diptera, Siphonaptera; Mecoptera)
December	1	Insect Orders: Endopterygotes IV - Amphiesmenoptera (Lepidoptera & Trichoptera) and review
	8	LAB ID EXAM