BIOLOGY 4200A
Insect structure and function

Instructor
Prof. Jeremy N. McNeil jmcneil2@uwo.ca
BGS 3066
661–2111 ext. 83487

Time and Location:
Lecture: 12:30–14:20, B & G 1056
Tutorial: 09:30–10:20, B & G 3000

Office Hours:
I keep no specific office hours. Students may set up appointments (in class or by email) at mutually acceptable times to discuss the material. I will also be happy to answer questions immediately before or after lectures.

Please note that I will not answer questions in the 24 h preceding an exam.

Recommended textbooks


Course Description:
Insects are the most abundant macro-invertebrates and are found in all ecosystems, with the exception of the marine environment (although this is debatable). In the lectures we will first examine the basic external and internal anatomy, as well as the basic physiology of insects. Subsequently, we will examine how adaptations in these different traits have allowed this group of organisms to exploit such a wide range of habitats at the global scale.

Module 1: External anatomy
Module 2: Internal anatomy
Module 3: The insect endocrine system
Module 4: Sensory systems and behaviour
Module 5: Reproduction
Module 6: Development and life histories
Module 7: Terrestrial insects
Module 8: Aquatic insects
Module 9: Insects and plants
Module 10: Social insects
Module 11: Insects as predators or parasitoids
Module 12: How insects avoid natural enemies
Module 13: Insects and humans (seen as pests!)

PDF files of PowerPoint presentations for each module will be posted on the course website by 8:30 a.m. on the Thursday that the module will be discussed for the first time. You should download them and use them to take notes during the lectures/tutorials.

Lectures may only be recorded with permission of the professor.

**Exams on the material presented in lecture**

Midterm: 35% (Sat., 25th Oct. 2014, 14:00–16:00, Room(s) TBA
Final Exam: 35% (TBA)

Each exam will be a combination of fill in the blanks and short answer questions.

*No electronic aids are allowed for exams and answers are to be written in pen.*

You will be notified by email when exams have been marked and the results tabulated. We will go over the first exam in class...but you must return the copies to me. Please note that as I mark all the exams myself the turnaround time is longer than if it was a multiple-choice exam corrected by computer.

**Tutorial (Fridays, at 09:30–10:20 in B & G 3000)**

We will examine the characteristics that distinguish each major order of insects (e.g. what do all beetle species have in common) and look at the characteristics that separate the different major families within the order (what makes a lady beetle different from a bark beetle).

At the end of the Thursday lecture (starting on Sept 11th) I will provide a photo of an insect (or insects) and you have to do a literature search in order to give a brief description (*in your own words*) of the major morphological characteristics that define the Order(s) in question. You must submit this one week later on Turnitin by the beginning of the tutorial (e.g. the first by 09:30 on Friday 19th Sept). This exercise will be continued throughout the semester and together the submissions will count 10% to the final grade in the course.

At the beginning of each tutorial you will be provided with a series of specimens and you will have 20 minutes to examine them, and describe, on the form provided, 2 morphological characteristics that you believe would serve to distinguish each specimen (that is representative of a Family) from the others, as they are all within the Order you researched the previous week. Your notes will be collected and at the end, will collectively be worth 10% of the final grade.
The TA, Lauren Des Marteaux, will use the remaining time 30 min to give a PowerPoint presentation to describe the key characteristics for each family in the order. A PDF of the PowerPoint will be available on the class website after the tutorial.

In the last tutorial you will be provided with a collection of specimens and you will have 45 min to identify, on the form provided, as many specimens as possible and going to the lowest level possible. If #1 was a honey bee then the complete answer would be Hymenoptera (Order), Apidae (Family), Apis (genus), mellifera (species). This test will be worth 10% of the final grade and will be marked comparatively, that is relative to the performance of all other students in the course.

**Examination Policy:**

Examinations are compulsory.

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to the academic counselors in your Dean's Office as soon as possible and contact me immediately. It is the student's responsibility to make alternative arrangements with me if the request for accommodation has been approved, and I have been informed that this is the case by the academic counselors in your Dean's Office. In the event of a missed final exam, a "Recommendation of Special Examination" form must be obtained from the academic counselors in your Dean's Office immediately. For further information please see: [http://www.uwo.ca/univsec/handbook/appeals/medical.pdf](http://www.uwo.ca/univsec/handbook/appeals/medical.pdf)

A student requiring academic accommodation due to illness should use the Student Medical Certificate when visiting an off-campus medical facility or request a Records Release Form (located from the academic counselors in your Dean's Office) for visits to Student Health Services. The form can be found here: [https://studentservices.uwo.ca/secure/medical_document.pdf](https://studentservices.uwo.ca/secure/medical_document.pdf)

**Accessibility:**

Please contact the professor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation.

**Make-up exams:**

As part of university policy, students that have been granted permission by the academic counselors in your Dean’s Office to write the make-up examination will write the exam at a time scheduled by the professor. There will be one written make-up examination given within two weeks of the originally scheduled exam that was missed. Arrangements may be made for students that have valid reasons for missing this make-up; however the format and timing of any additional make-ups, are at the discretion of the professor…. for example, it could be an oral exam or taking the exam the next time the course is taught.
Academic Accommodations for Religious Holidays:

The Faculty of Science strictly adheres to the University policy on accommodation for students based upon conflicts with religious holidays. Accommodation will only be granted for the specified date of the religious holiday. Only holidays appearing on the University-approved list of dates will be accommodated. See the academic counselors in the Office of your Dean for the list of approved dates. Students requesting accommodation must do so, in writing, to the academic counselors in the Office of their Dean at least one month before the scheduled exams.

SDC’s Learning Skills Services, Rm 4100 WSS, www.sdc.uwo.ca/learning

LS counsellors are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.