Course: BIOL 3030 4.0 PHYSIOLOGY OF THE INVERTEBRATES

Term: Fall 2008

Prerequisite: BIOL 2030 4.0

Course Instructor

Dr. Andrew Donini
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Office Hours: Mondays 1:45-2:45 pm in Lumbers 205B.

Laboratory Teaching Assistant

Mr. Ron Gonzalez
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Office Hours: By appointment

Time and Location

Lectures MWF: 8:30AM SC216
Laboratory Group 1 R: 2:30 PM LB 117
Laboratory Group 2 R: 6:30 PM LB 117

Expanded Course Description

The invertebrates are a medically, economically and ecologically important group of animals. A number of invertebrates act as pathogens or vectors of disease. Malaria is one of the most important diseases in the world and is caused by a protozoan that is transmitted by anopheline mosquitoes. Economically speaking, invertebrates can be detrimental, serving as pests that destroy crops, but can also benefit us by serving as sources of food (eg. shrimp, lobster). Ecologically, invertebrates are an integral part of the food chain and can be utilized as bioindicators. Therefore it is in our best interest to study and understand the unique physiological processes of each phylum. In addition to lectures, groups of students will write a paper on a physiologically relevant topic and will present the hi-lights of their paper to the class. The laboratories will consist of hands-on experiments which demonstrate physiological mechanisms in the invertebrates. The majority of lab exercises will utilize insects because they are cheap to obtain and make convenient models for studying these processes.
Course Learning Objectives

Through this course students will be able to recognize the main distinguishing features of the major invertebrate groups, and gain an appreciation for the importance and impact of invertebrates on our society. Students will understand and be able to describe invertebrate adaptations to important physiological processes.

Specific Learning Objectives

By the end of this course, students will be able to demonstrate
- an awareness of specific invertebrates that are important to our society from an economic standpoint, and/or from a health perspective.
- understanding and ability to describe the morphology and associated physiology of invertebrate adaptations to locomotion, feeding, the maintenance of solute balance, extreme temperature tolerance and the processing of sensory information through the nervous system.
- knowledge of various experimental techniques and how to apply them to solve physiological questions.
- the ability to work in teams (with development of scientific writing skills and oral presentation skills).

Course Text / Readings

There is no text book for the course. Readings are periodically assigned from books on reserve in the library or from journals.

Evaluation

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Midterm Exam (October 10th, 2008, in class)</td>
<td>20%</td>
</tr>
<tr>
<td>Group Report and Presentation Outline (Due October 3rd, 2008)</td>
<td>2%</td>
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<tr>
<td>Group Report and Presentations (Due November 13th, 2008)</td>
<td>18%</td>
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<tr>
<td>Formal Laboratory Report 1 (Earthworm) (September 25th, 2008)</td>
<td>7%</td>
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<tr>
<td>Formal Laboratory Report 2 (Nitrogen) (October 30th, 2008)</td>
<td>7%</td>
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<tr>
<td>Written Laboratory Test (November 20th, 2008)</td>
<td>6%</td>
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<tr>
<td>Final Exam (Formal Exam Period, Dec. 5 to 22)</td>
<td>40%</td>
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Grading, Assignment Submissions

Lateness Penalties and Missed Tests

Grading: The grading scheme for the course conforms to the 9-point grading system used in undergraduate programs at York (e.g., A+ = 9, A = 8, B+ = 7, C+ = 5, etc.). Assignments and tests will bear number grade (e.g. A+ = 90 to 100, A = 80 to 89, B+ = 75 to 79, etc.)

(For a full description of York grading system see the York University Undergraduate Calendar - http://calendars.registrar.yorku.ca/pdfs/ug2004cal/calug04_5_acadinfo.pdf)
**Group Report Submission**: Proper academic performance depends on students doing their work not only well, but on time. Accordingly, the **outline** and **group report** for this course must be received on **October 3rd in class** and **November 13th in lab, respectively** and all groups must be prepared to present their work on November 13th in lab. A **late penalty of 10% of the final grade, per day will apply.** (example: if a group is given 70% for the report and presentation but, the report was handed in on November 13th then their final grade for the report and presentation will be 63%. (Exceptions to the lateness penalty for valid reasons such as illness, compassionate grounds, etc., may be entertained but will require supporting documentation, example, a doctor’s letter).

**Missed Tests**: Students with a documented reason for missing a course test, such as illness, compassionate grounds, etc., which is confirmed by supporting documentation (e.g., doctor’s letter) may be permitted to write a make-up test no later than 1 week after the scheduled test date.

**Other Important Considerations**:

1. All students are expected to familiarize themselves with the following information, available on the Senate Committee on Curriculum & Academic Standards webpage (see Reports, Initiatives, Documents) - [http://www.yorku.ca/secretariat/senate_cte_main_pages/ccas.htm](http://www.yorku.ca/secretariat/senate_cte_main_pages/ccas.htm)
   - York’s Academic Honesty Policy and Procedures/Academic Integrity Website
   - Ethics Review Process for research involving human participants
   - Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities
   - Student Conduct Standards
   - Religious Observance Accommodation

2. Students who feel that there are extenuating circumstances that may interfere with their ability to successfully complete the course requirements are encouraged to discuss the matter with Prof. Donini **as soon as possible.**

3. Students with physical, learning or psychiatric disabilities who require reasonable accommodations in teaching style or evaluation methods should consult with the Office for Persons with Disabilities (OPD) and ensure that requests for appropriate accommodations are arranged with Prof. Donini **early in the term.**
Fall 2008 BIOL 3030 Physiology of the Invertebrates Remediation:

Evaluation | MARKS
---|---
Midterm Exam (Completed) | 20
Group Report and Presentation Outline (Completed) | 2
Formal Laboratory Report 1 (Earthworm) (Completed) | 7
Formal Laboratory Report 2 (Nitrogen) (Completed) | 7
Written Laboratory Test (CANCELLED) | 0
Group Report (NO PRESENTATIONS) (Due: Last Lecture of Fall Term) | 10
Final Exam (Formal Exam Period) | 40

TOTAL COURSE MARK (out of 86 marks)