Welcome to BIOL 4350 – Comparative Chordate Anatomy

Course Goals: You will gain an understanding of the anatomy chordate animals, with an emphasis on anatomical, physiological and mechanical design. Current evolutionary relationships between chordates will be studied based on morphology (form and function), inferred phylogenetic relationships and evolutionary histories of major taxa. Comparisons with modern molecular phylogenies will be discussed.

Prerequisite: SC/Biol 2030 4.00.

Course Director: Dr. Carol Bucking  
Office: 105A Farquharson  
Office Hours: 2:30 – 4:00 pm Tuesdays  
Email: cbucking@yorku.ca

Lectures: Mondays, Wednesdays, Fridays at 10:30 – 11:30 pm in LSB 107

Labs: Wednesdays or Thursdays at 2:30 – 5:30 pm in LUM 126

Course Website: Moodle

Please check Moodle often. Announcements may be posted on Moodle before they are communicated in class. Moodle will also be where you can view your grades; do not email the instructor/TAs about grades – they will be posted as soon as possible.

Lecture notes will be posted to Moodle. Due to copyright and accessibility issues not all material presented in class will be posted.

You are expected to participate fully in class discussions and cooperative learning activities. At times this will require you to complete assigned readings before class. Any assigned readings will be announced through Moodle and in class ahead of the class they will be used. You will receive a lecture participation and activities mark worth 5% of your final grade. At the same time as midterm grades, a progress report on your participation mark will be posted to Moodle. You will be given a mark out of five and comments on how to improve your mark, if necessary. This will not be your final participation mark and everyone will have a chance to improve, and earn the full 5%, at this point.

Mark Breakdown:

- Midterm Test: 20%
- Group Assignment: 15%
- Final Exam: 30%
- Lecture Participation and Activities: 5%
- Laboratory: 30%

Your laboratory grade will consist of a midterm lab exam, a final lab exam and a dissection mark (each worth 10%). Details can be found in your laboratory guide (handed out in the first lab).
Midterm/Exam:

- Midterms/Exams will include material from the lectures and any other assigned material. The final exam will be cumulative.
- Midterms/Exams will not be returned. Dates and times for viewing will be announced through Moodle.
- **There will be NO make-up tests for the midterm.** If you cannot attend the midterm AND you have valid reasons for missing the test your marks will be redistributed to the final.
- **NOTE:** The final exam schedule is set by the registrar. The final exam period, this term, is April 10th to April 26th. You should not schedule any vacations, trips etc., until after the exam schedule is released!

What if I cannot write the exam/midterm that day?

- Accommodations are **not guaranteed**. Guidelines and advice can be found on the departmental website and in your undergraduate handbook.
- If you are aware of a planned conflict you should contact me as soon as possible. Do not leave it to test day. Not all conflicts will be accommodated.
- There are special guidelines for religious holidays. You must contact me at least 3 weeks prior to the exam.
- For unplanned (emergency) circumstances please contact me as soon as possible after the exam, and no later than 3 days after. For medical issues you must submit an “Attending Physician’s Statement”, available from the Registrar’s office.

Group Assignment:

Working within a group of four to five people you will use a comparative approach to describe the morphology and evolutionary history of a major anatomical feature. Your group will design and give a 20 minute oral presentation and guide a post-presentation discussion (Q&A) session. Your group will prepare a three to five page written report to supplement the oral presentation. Your written report will be given to your classmates. Your group will also submit three sample short answer questions with answer keys covering the material you presented. Details will be posted on Moodle.

Groups will be assigned to you and topics will be chosen randomly. Group work can be stressful for some students - we will dedicate some class time to discussing strategies for working in groups. Your group will also meet with me a minimum of two times (once at the start of the group work stage and once closer to your presentation day). You should attempt to resolve difficulties between group members yourselves, however you are encouraged to contact me as well; I can act as a facilitator for resolving conflicts and participation issues. There will also be a group assessment form that will allow group members to critique each other’s level of participation and input into the project. Failure to do your share of the work may lead to a mark penalty at my discretion. Mark penalties will begin at one grade point (e.g. A C+ will become a C) and can include a zero on the entire assignment.
Lecture Topics

The course will proceed in the following order:

1. What is a chordate? General concepts including development and cladistics.
2. Integument (skin and scales)
3. Skeletal system
4. Musculature
5. Respiratory System
6. Circulatory System
7. Digestive system
8. Urogenital system
9. Endocrine and Nervous Systems

Important Dates:

Week 1 – 6: January 6th – Feb 14th | I anticipate covering topics 1 to 5 (up to the respiratory system) by the reading week break, however this pace is adjustable.

Week 6: **February 14th will be your midterm exam.** The midterm will cover everything discussed up to and including the proceeding Friday’s class (Feb. 7th).

Week 7: February 17th – 21st is reading week (no classes).

Week 8 – 11: February 24th – March 21st will cover the remaining lecture material (topics 6 – 9)

Weeks 12 – 13: March 24th – April 4th will be group presentations, review and any overflow from previous weeks. You are responsible for all material covered for the final exam.