BIOL 202
Diversity of Life II

Winter Term (2016-17)

CALENDAR DESCRIPTION

A survey of animals, their internal organization, and their relationships to their environment. Organismal biology is discussed in a phylogenetic context and the evolution of organizational complexity and the relations between structure and function are stressed.

LEARNING HOURS 117 (36L; 33Lb; 48P)

SCHEDULE
Lectures: Mon 10:30am, Wed 9:30am, Fri 8:30am Dunning Auditorium
Labs: See SOLUS for a list of various lab times.

Instructors	**Dr. L. Ratcliffe** (course coordinator) and **Dr. Wm. Nelson**
Instructor Contact Information	Ratcliffe ratcliff@queensu.ca Phone: 533-6142, Rm. 4319, Biosciences Nelson nelsonw@queensu.ca Phone: 533-6130, Rm. 3506, Biosciences
Office Hours	Ratcliffe: Open door (best to email preferred time in advance) Nelson: Fridays, 9:30
Lab Coordinator	Dr. Barb Vanderbeld
Lab Coordinator Contact Information	vanderb@queensu.ca Phone: 533-6000 x77438, Rm. 2321b, Biosciences
Office Hours	Open door (best to email in advance)

Learning Objectives

1. You should be able to provide the features that distinguish major groups of animals.
2. You should be able to place major taxonomic groups in the appropriate location within a phylogenetic tree.
3. You should understand the major developmental, morphological, physiological and behavioural changes that have occurred in the evolution of animals.
4. You should be able to describe key developmental, morphological, physiological and behavioural adaptations of the major groups of animals.
5. You should develop an appreciation of the diversity of species within the major groups of animals.

Specific labs vary from year to year but last year the labs included work with lower metazoans, worms, molluscs, arthropods, echinoderms, fishes, amphibians, birds and mammals.

Learning Hours

Teaching method		*Average hours per week*	*Number of weeks*	*Total hours*
In-class hours	Lecture	3	12	36
	Seminar			
	Laboratory	3	11	33
	Tutorial			
	Practicum			
	Group learning			
	Individual instruction			
Other	Online activity			
	Off-campus activity			
	Private study			48
Total hours on task				117

Course Outline

Part I: Invertebrates

- Why study invertebrates?
- Origins of Metazoans
- Hallmark events in metazoan evolution.
- Phyla: Porifera, Cnidaria & Ctenophora
- Minor Phyla
- Phylum: The Worms (various phyla)
- Phylum: Mollusca
- Phylum: Arthropoda
- Phylum: Echinodermata & Hemichordates.

Part II. Vertebrates

- Vertebrate origins and common characteristics
- Origin of jawed vertebrates
- Basic biology and diversity of bony fishes
- Basic biology and diversity of amphibians and reptiles
- The origin of tetrapods, amphibians, and amniotes
- Basic biology and diversity of reptiles
- Basic biology and diversity of birds
- Basic biology and diversity of mammals

Textbooks/Readings

Lecture Support: Miller & Harley. 2013. Zoology. 10th edition. McGraw Hill. (required)

Laboratory Support: Adams & Crawley. Van De Graaff's Photographic Atlas for the Zoology Laboratory. Morton. (suggested; any edition will work)

Laboratory Manual: BIOL 202 Lab Manual. PDFs will be available through the onQ site.

Dissection Kit: You can purchase this kit from the Campus Bookstore. (required)

Grading Scheme

Component	Weight (%)	Date
Lab Quizzes	6%	Labs #2,4,6
Lab Activities/Assignments	10%	
Group Project	10%	
Invertebrates Lab Exam	7%	Feb 27 – Mar 3
Vertebrates Lab Exam	7%	Apr 3 – Apr 7
Part 1: Invertebrates		
Quiz	10%	TBA
Midterm	20%	TBA
Part 2: Vertebrates		
Final exam	30%	April exam period

Grading Method

All components of this course will receive numerical percentage marks. The final grade you receive for the course will be derived by converting your numerical course average to a letter grade according to Queen's Official Grade Conversion Scale.

When letter grades are employed, the following scale will be employed for purposes of calculating your course average:

Arts & Science Letter Grade Input Scheme

Assignment mark	Numerical value for calculation of final mark
A+	93
A	87
A-	82
B+	78
B	75
B-	72
C+	68
C	65
C-	62
D+	58
D	55
D-	52
F48 (F+)	48
F24 (F)	24
F0 (0)	0

Your course average will then be converted to a final letter grade according to Queen's Official Grade Conversion Scale:

Queen's Official Grade Conversion Scale

Grade	Numerical Course Average (Range)
A+	90-100
A	85-89
A-	80-84
B+	77-79
B	73-76
B-	70-72
C+	67-69
C	63-66
C-	60-62
D+	57-59
D	53-56
D-	50-52
F	49 and below

Academic Integrity and Queen's Code of Conduct

Students are responsible for familiarizing themselves with the regulations concerning academic integrity and for ensuring that their assignments and conduct conform to the principles of academic integrity. Information is available in the Arts and Science Calendar (see Academic Regulation 1 - http://www.queensu.ca/artsci/academic-calendars/regulations/academic-regulations, on the Arts and Science website (see http://www.queensu.ca/artsci/academics/undergraduate/academic-integrity), and at Biology's website (https://biology.queensu.ca/academics/undergraduate/prepare-yourself/) and from the instructor of this course. Departures from academic integrity include plagiarism, use of unauthorized materials, facilitation, forgery and falsification, and are antithetical to the development of an academic community at Queen's. Given the seriousness of these matters, actions which contravene the regulations on academic integrity carry sanctions that can range from a warning or the loss of grades on an assignment to the failure of a course to a requirement to withdraw from the university.

Accommodation Policy, Exam Conflicts, and Other Conflicts

Students who feel they need accommodations for disabilities or extenuating circumstances, or have a conflict between exams or other commitments should consult the Biology Department's website for details about how to proceed (https://biology.queensu.ca/academics/undergraduate/prepare-yourself/). In general, the earlier a course coordinator is apprised of an extenuating circumstance, the more likely an accommodation can be made. Students are encouraged to be proactive in anticipating difficulties, when it is possible to do so.

Students may apply to write a make-up or deferred exam if they have an exam conflict as defined in the Academic Regulations of the Faculty (See Arts and Science Calendar Regulation 8 - http://www.queensu.ca/artsci/academic-calendars/regulations/academic-regulations). In this case, the student should report to the Exams Office first to verify that there is a genuine exam conflict. Biology professors will not consider your situation to be a conflict unless it meets the criteria set out by the Faculty of Arts and Sciences.

Students may request a make-up or deferred exam if they have an exam conflict with off-campus travel associated with a field course (e.g BIOL-307/3.0 or 407/3.0) that is held during the fall or winter terms.

Copyright

Accommodation of Disabilities

Queen's University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a disability and think you may need accommodations, you are strongly encouraged to contact Student Wellness Services and register as early as possible. For more information, including important deadlines, please visit their website at: http://www.queensu.ca/studentwellness/home