

Department of Biology Course Outline

SC/BIOL 4360 3.00 Parasitology
Fall 2015

Course Description

Biology of animal parasites; developmental, structural and functional adaptations to the parasitic environments; immune and other responses of hosts; parasitic diseases. Three lecture hours. One term. Three credits.

Prerequisites

SC/BIOL 2030 4.00

Course Instructors and Contact Information

Course Director - Dr. R. A. Webb

Office - 203A Lumbers

Email – raw@yorku.ca -(email will be answered, normally within 36 hrs; usually much sooner and possibly within an hour of sending). Responses to email enquiries for materials available in the course outline/lecture schedule will be terse.

Office hours – normally between 12 noon and 1 pm, or by appointment (easily set up with an email request).

Schedule

Tuesday and Thursday 10:00 - 11:30 am
Stong College 222

Evaluation

Assignments and Grading:

Mid Term Exam (Date October 13 - 1 hr duration – in class.....	30%
Enquiring based learning assignment.....	15%
Presentation of the enquiry based research topic	5%
Final Exam.....	50%
	<u>100%</u>

Important Dates

See course content – below.

Text**(Recommended, but not required)**

Gerald D. Schmidt & Larry S. Roberts' 'Foundations of Parasitology' 9th ed. (2013) Larry S. Roberts, et al. McGraw Hill. Copies of older but usable versions are available in the library.

Learning Outcomes**Upon successful completion of this course, students should be able to....**

1. describe general principles and concepts of animal parasitology
2. draw and describe some general principles of systematics and be able to classify major animal parasites of animals and humans
3. draw and describe the structure and function of tissues and organs of many animal parasites
4. describe and be able to compare and contrast the many strategies that parasitic animals have undertaken to successfully complete their life cycles in the face of discontinuity of hosts
5. describe many of the disease conditions that animal parasites cause and to consider measures that may lead to control of these disease agents
6. generalize on the intestine as a place for animal parasites to inhabit and to predict the changes that animal parasites may make to the intestinal milieu that are supportive of the parasite
7. describe how some animal parasites are well adapted to anaerobic environments
8. describe, with the aid of figures, some of the ways by which the host may respond to the presence of animal parasites, in particular in mounting an adaptive and protective immune response, and to consider the many ways by which animal parasites may circumvent the defense mechanisms of the host
9. work effectively and cooperatively in small groups to elucidate an answer to an enquiry based research topic (Students will use data base search engines to investigate the literature of animal parasites and provide a group-written report on the fruits of their investigation.)
10. have the opportunity to present the results of the enquiry based research topic to the class.

Course Content

BIOL 4360 3.0 Animal Parasitology

FALL 2015.

Tues and Thurs, 10:00 - 11:30 am, Stong College 222

Class Dates

Proposed lecture topic

September 10,

Introduction: Parasitism; principles and general concepts.
Introduction to Parasitic Protozoa – multiphyletic unicellular organi

September 15,

Parasitic Protozoa I – trypanosomes – salivaria

September 17,

Parasitic Protozoa II - *Trypanosoma cruzi*, *Leishmania*,

September 22,

Parasitic Protozoa III - other flagellates

September 24,

Parasitic Protozoa IV - the amoebas - the apicomplexans

September 29,

Parasitic Protozoa V – more apicomplexans

October 1,

Parasitic Protozoa VI – *Plasmodium* and the malarias
– myxozoans and microsporans

October 6,

Platyhelminths I – general features Class Trematoda–
the digeneans

October 8,

Platyhelminths II - Class Monogenea – monogeneans

October 13,

MID-TERM EXAM

October 15,

Platyhelminths III - Class Cestoidea – the tapeworms

October 20,

Nematodes I – general features

October 22,

Nematodes II - Class Enoplea - trichuiids, dioctophymes
and mermithids

October 27,

Nematodes III - Class Rhabditea - *Strongyloides stercoralis*

**October 29 -
November 1.**

Fall Reading Days

November 3,

Nematodes IV- strongyles, ascarids

November 5,

Nematodes V -more ascarids, oxyuroids, spiruroid

November 10,

Nematodes VI - filarial worms

November 12,

Acanthocephalans

November 17,

Physiology I - the intestine as a place to live

November 19,

Physiology II - immunology of the host; trypanosomes
and resistance; resistance to cestodes

November 24,	Physiology III - immunology of the host; continued
November 26,	Enquiry-based learning presentations
December 1,	Enquiry-based learning presentations
December 3,	Enquiry-based learning presentations

Note: Last day to drop course without academic penalty- November 9.

Final date to submit term work – December 7.

Final Exam – Date to be announced by the Registrar’s office (final exam period; December 9 – 23).

NOTE: – PPTs/notes for many lectures will be posted on the Moodle course site, usually before the lecture has been given. However, these are but notes – they need to be viewed in a context that can only be obtained by attending lectures. Lectures will serve to enable students to more readily understand and situate the materials in context. Additionally, some figures, diagrams and illustrative materials e.g. film clips are not necessarily available on the Moodle site – they will be provided from time to time, in context, in the lectures.

Experiential Education and E-Learning

Enquiry-based learning project with class presentation

Other Information

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 either a letter grade designation or a corresponding number grade (e.g. A+ = 90 to 100, A = 80 to 90, B+ = 75 to 79, etc.)

(For a full description of the York grading system see the York University Undergraduate Calendar

Enquiry-based learning project –

Details of assignment of each student to a group, topics to be researched, suggestions for how students should work together, etc., etc. will be provided via Moodle around the time of the mid-term exam. The schedule for presentations will be announced after the mid-term exam.

Other Information: The lecture material for this course will be provided through a variety of media that will include some on-line delivery and discussions using Moodle and classroom lectures, presentations, film clips and discussions. Students enrolled in the course will be provided with a Moodle account to access the materials. Some learning will be required on the part of the student to use the Moodle site most effectively.

Course Policies

Assignment submissions - group assignment and dates for submission of the Enquiry-based learning assignment report will be announced.

Students who fail to work with the group or fail to contribute meaningfully to the group will be penalized.

Submissions will be penalized for any instances of plagiarism - the size of the penalty will vary with the magnitude of the breach of integrity. All members of the group will be equally penalized - therefore, it is a group responsibility to ensure that all reports are checked before submission to ensure no content is plagiarized. I undertake extensive examination of each report to ensure no content is plagiarized - if any is plagiarized I will find it!

Late submissions- will be penalized accordingly – at least 10% per day late.

Missed Tests/Exams: Students with a documented reason for missing a course test/mid-term exam, such as illness, compassionate grounds, etc., which is confirmed by supporting documentation (e.g., fully detailed physician's letter) may request accommodation from the Course Instructor. Submission of documentation does not mean accommodation will automatically be provided.

Further requests for accommodation may require students to submit a formal petition to the Faculty.

Missed presentation - will result in a mark of 0/5 for the presentation.

University Policies

Academic Honesty and Integrity

York students are required to maintain the highest standards of academic honesty and they are subject to the Senate Policy on Academic Honesty (<http://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/>). The Policy affirms the responsibility of faculty members to foster acceptable standards of academic conduct and of the student to abide by such standards.

There is also an academic integrity website with comprehensive information about academic honesty and how to find resources at York to help improve students' research and writing skills, and cope with University life. Students are expected to review the materials on the Academic Integrity website at - <http://www.yorku.ca/academicintegrity/>

Access/Disability

York University is committed to principles of respect, inclusion and equality of all persons with disabilities across campus. The University provides services for students with disabilities (including physical, medical, learning and psychiatric disabilities) needing accommodation related to teaching and evaluation methods/materials. These services are made available to students in all Faculties and programs at York University.

Students in need of these services are asked to register with disability services as early as possible to ensure that appropriate academic accommodation can be provided with advance notice. You are encouraged to schedule a time early in the term to meet with each professor to discuss your accommodation needs. Please note that registering with disabilities services and discussing your needs with your professors is necessary to avoid any impediment to receiving the necessary academic accommodations to meet your needs.

Additional information is available at the following websites:

Counselling & Disability Services - <http://cds.info.yorku.ca/>

Counselling & Disability Services at Glendon - <http://www.glendon.yorku.ca/counselling/personal.html>

York Accessibility Hub - <http://accessibilityhub.info.yorku.ca/>

Ethics Review Process

York students are subject to the York University *Policy for the Ethics Review Process for Research Involving Human Participants*. In particular, students proposing to undertake research involving human participants (e.g., interviewing the director of a company or government agency, having students complete a questionnaire, etc.) are required to submit an *Application for Ethical Approval of Research Involving Human Participants* at least one month before you plan to begin the research. If you are in doubt as to whether this requirement applies to you, contact your Course Director immediately.

Religious Observance Accommodation

York University is committed to respecting the religious beliefs and practices of all members of the community, and making accommodations for observances of special significance to adherents. Should any of the dates specified in this syllabus for an in-class test or examination pose such a conflict for you, contact the Course Director within the first three weeks of class. Similarly, should an assignment to be completed in a lab, practicum placement, workshop, etc., scheduled later in the term pose such a conflict, contact the Course director immediately. Please note that to arrange an alternative date or time for an examination scheduled in the formal examination periods (December and April/May), students must complete an Examination Accommodation Form, which can be obtained from Student Client Services, Student Services Centre or online at

http://www.registrar.yorku.ca/pdf/exam_accommodation.pdf (PDF)

Student Conduct in Academic Situations

Students and instructors are expected to maintain a professional relationship characterized by courtesy and mutual respect. Moreover, it is the responsibility of the instructor to maintain an appropriate academic atmosphere in the classroom and other academic settings, and the responsibility of the student to cooperate in that endeavour. Further, the instructor is the best person to decide, in the first instance, whether such an atmosphere is present in the class. The policy and procedures governing disruptive and/or harassing behaviour by students in academic situations is available at - <http://secretariat-policies.info.yorku.ca/policies/disruptive-andor-harassing-behaviour-in-academic-situations-senate-policy/>