UNIVERSITY OF CALGARY

DEPARTMENT OF BIOLOGICAL SCIENCES
COURSE OUTLINE

1. Course: ZOOLOGY 581 – PRINCIPLES IN PARASITISM

Lecture Section(s) L01 MWF 1100-11:50AM ICT 114 Winter 2018

Coordinator/Instructor: Dr. Constance Finney, BI 461, 220-2687, constance.finney@ucalgary.ca

Course website or Desire 2 Learn (D2L) course name: ZOOL 581 L01 - (Winter 2018) - Principles In Parasitism

Biological Sciences Department BI 186 403-220-3140 biosci@ucalgary.ca

2. Prerequisites: Zoology 375 or 401 or 435 and consent of the Department

See section 3.5.C in the Faculty of Science section of the online Calendar www.ucalgary.ca/pubs/calendar/current/sc-3-5.html

3. Grading: The University policy on grading and related matters is described in sections F.1 and F.2 of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Quizzes	9 %	Ongoing, see course schedule on D2L
Worksheets	10 %	Ongoing, see course schedule on D2L
In Class Exercises	10%	Ongoing, see course schedule on D2L
Midterm Exam 1	10 %	Friday Feb. 16 **(in class)**
Midterm Exam 2	10 %	Friday March 23 **(in class)**
Lab Exam	15 %	Friday April 06 **(in class)**
Final Exam	36 %	

The student cannot pass the course as a whole unless they have passed (>50%) at least one component of the lab-based examinations (quizzes or exam) and one component of the lecture-based examinations (midterm or final exam).

Each piece of work submitted by a student will be assigned a percentage score. A student's average percentage score for the various components listed above will be weighted as indicated above to calculate the overall percentage for the course, which will be used to determine the course letter grade. The following grading scheme identifies the maximum thresholds for letter grades that will be applied in this course: thresholds may be lowered to establish the final grade distribution.

Letter Grade	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
Min. Percent Required	92	88	84	80	76	72	68	64	60	56	50

4. Missed Components of Term Work: The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in Section 3.6. It is a student's responsibility to familiarize herself/himself with these regulations. See also Section E.6 of the University Calendar

5. Scheduled out-of-class activities: Dates and times of approved class activities held outside of class hours. N/A

6. Course Materials: TEXT: **REQUIRED**: 'The art of being a parasite' by Claude Combes.

Online Course Components: Some teamwork resources are provided by ITPMetrics, a University of Calgary-based system of secure web-based tools for forming teams and doing peer evaluations. These tools are free to all students and are not dependent on prior access.

7. Examination Policy: No calculators or electronic devices are permitted for quizzes and exams. Students should also read the Calendar, Section G, on Examinations.

8. Writing across the curriculum statement: In this course, the quality of the student's writing on assigned papers will be a factor in the evaluation of those papers. See also Section E.2 of the University Calendar.

9. Human studies statement: Students in the course are not expected to participate as subjects or researchers. See also Section E.5 of the University Calendar. See also http://www.ucalgary.ca/pubs/calendar/current/e-5.html.

10. ETHICS IN THE BIOLOGICAL SCIENCES

Studies in the Biological Sciences involve the use of living and dead organisms. Students taking laboratory- and field-based courses in these disciplines can expect involvement with and experimentation on such materials. Students perform dissections on dead or preserved organisms in some courses. In particular courses, students experiment on living organisms, their tissues, cells, or molecules. Sometimes field work requires students to collect a variety of living materials by many methods, including humane trapping.

All work on humans and other animals conforms to the Helsinki Declaration and to the regulations of the Canadian Council on Animal Care. The Department strives for the highest ethical standards consistent with stewardship of the environment for organisms whose use is not governed by statutory authority. Individuals contemplating taking courses or majoring in one of the fields of study offered by the Department of Biological Sciences should ensure that they have fully considered these issues before enrolling. Students are advised to discuss any concern they might have with the Undergraduate Program Director of the Department.

11. OTHER IMPORTANT INFORMATION FOR STUDENTS:

(a) Misconduct: Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under Section K. Student Misconduct to inform yourself of definitions, processes and penalties.

(b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on assembly points.

(c) **Student Accommodations:** Students needing an Accommodation because of a Disability or medical condition should contact Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities available at http://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities_0.pdf.

Students needing an Accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the Associate Head of Biological Sciences, Dr. H. Addy by email addy@ucalgary.ca or phone 403 220-3140.

(d) **Safewalk:** Campus Security will escort individuals day or night (http://www.ucalgary.ca/security/safewalk/). Call 220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.

(e) **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information see also http://www.ucalgary.ca/secretariat/privacy

(f) **Student Union Information:** VP Academic Phone: 403 220-3911 Email: suvpaca@ucalgary.ca SU Faculty Rep. Phone: 403 220-3913 Email: science1@su.ucalgary.ca, science2@su.ucalgary.ca and science3@su.ucalgary.ca;

(g) Student Ombuds Office: 403 220-6420 Email: ombuds@ucalgary.ca; http://ucalgary.ca/provost/students/ombuds**Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed during class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.

(h) **U.S.R.I.:** At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses (www.ucalgary.ca/usri). Your responses make a difference - please participate in USRI Surveys.

Department Approval ORIGINAL SIGNED Date

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Course Description

An introduction to parasitism. The lecture component of the course will cover how parasites have evolved, their diverse life strategies and their impact on the natural world. The lab component will cover most parasitic groups (protozoan, helminth and arthropod parasites) and their characteristics (morphology, life cycles, behavior, systematics and life history).

Learning Objectives

By the end of the course (ZOOL 581), successful students will be able to:

- Distinguish the major groups of animal parasites.
- Interpret and describe photographs/schematics of parasites/parasite-induced pathology.
- Critically evaluate published data.
- Design experiments to answer a scientific problem/question.
- Relate basic concepts in parasitology to real-world examples.

Schedule*

Day	Date	Lecture	Instructor
Mon	Jan-8	(1) Intro	Finney
Wed	Jan-10	(2) Basic Concepts	Finney
Fri	Jan-12	(3) Symbiosis	Finney
		Lab 1: Example Parasites	
Mon	Jan-15	(4) Arms Race 1	Finney
Wed	Jan-17	(5) Arms Race 2	Finney
Fri	Jan-19	(6) HIGHLIGHT: reducing the encounter filter	Finney
		Lab 2: Protozoa	
Mon	Jan-22	(7) How to become a parasite 1	Finney
Wed	Jan-24	(8) HIGHLIGHT: Helminths	Gilleard
Fri	Jan-26	(9) HIGHLIGHT: Malaria	Pillai
		Lab 3: Myxozoa, Digenea & Aspidobothrea	
Mon	Jan-29	(10) HIGHLIGHT: Leishmania	Peters
Wed	Jan-31	(11) How to become a parasite 2	Finney
Fri	Feb-02	(12) How to be a parasite 1	Finney
		Lab 4: Cestoidea	
Mon	Feb-05	(13) How to be a parasite 2	Finney
Wed	Feb-7	(14) HIGHLIGHT: Rendez vous in space & time	Finney
Fri	Feb-09	(15) How to be a parasite 4	Finney
		Lab 5: Monogenea and Acanthocephala	
Mon	Feb-12	(16) How to be a parasite 5	Finney
Wed	Feb-14	(17) How to be a parasite 6	Finney
Fri	**Feb-16**	**Midterm 1**	Finney
		No Lab	
Mon	Feb-18	READING WEEK	
Wed	Feb-21	READING WEEK	
Fri	Feb-23	READING WEEK	
Mon	Feb- 26	(18) How to be a host 1	Finney
Wed	Feb-28	(19) How to be a host 2	Finney
Fri	Mar-02	(20) HIGHLIGHT: Parasite-induced pathology	Finney
		Lab 6: Nematoda	
Mon	Mar-05	(21) HIGHLIGHT: Host immunity	Finney
Wed	Mar-07	(22) How to be a mutualist 1	Finney
Fri	Mar-09	(23) How to be a mutualist 2	Finney
		Lab 7: Arthropoda	

Mon	Mar-12	(24) Alice and the Red Queen 1	Finney
Wed	Mar-14	(25) Alice and the Red Queen 2	Finney
Fri	Mar-16	(26) HIGHLIGHT: Parasite evolution	Wasmuth
		Labs 8: Adaptations for host finding and attachment	
Mon	Mar-19	(27) Sexual Selection and Parasitism 1	Finney
Wed	Mar-21	(28) Sexual Selection and Parasitism 2	Finney
Fri	**Mar-23**	**Midterm 2**	Finney
		No Lab	
Mon	Mar- 26	(29) Parasites in space and time 1	Finney
Wed	Mar- 28	(30) Parasites in space and time 2	Finney
Fri	Mar- 30	GOOD FRIDAY	
		Labs 9: Adaptations for feeding, reproduction and dispersal	
Mon	Apr-02	(31) Parasites in space and time 3	Finney
Wed	Apr-04	(32) Parasites in space and time 4	Finney
Fri	**Apr-06**	**Lab exam**	
		No Lab	
Mon	Apr-09	(33) Emerging Disease and the Future Arms race 1	Finney
Wed	Apr-11	(34) Emerging Disease and the Future Arms race 2	Finney
Fri	Apr-13	(35) FINAL REVIEW SESSION	Finney