

COURSE TITLE: BIOL 363 Population Ecology TERM: T2, 2014/2015
COURSE CODE: 27666 DELIVERY: Lecture and Practicum
COURSE CREDITS: 3.0 START DATE: January 5th 2015
CLASS SECTION: 01 LAB LOCATION: Room 212
CLASS LOCATION: Biology Room125 LAB TIME: Thursday, 1:30-4:20 pm
CLASS TIME: MWF 12:30-1:20 pm
WEBSITE: via Blackboard

Course Description

This course is designed for undergraduate students specializing in biology with emphasis in ecology; however, I encourage students from a variety of departments to take this course because the principles of population analysis cross several disciplines within the Colleges of Arts and Science, Agriculture, and Veterinary Medicine. The course includes 3 lectures and 1 lab per week.

Major topics include: links with evolutionary theory, population limitation and regulation, structured population models, population viability, competition, predation, parasitism and disease, population stability and pest outbreaks, dispersal, sampling, spatial aspects of populations, life histories, and conservation biology.

Prerequisites

Formal prerequisite(s): BIOL 228 and a course in statistics. BIOL 302 is recommended. Note: Students with credit for BIOL 263 or BIOL 473 may not take this course for credit.

Learning Outcomes

By the completion of this course, students will be expected to:

- 1) Be able to explain the structure and functioning of populations.
- 2) Develop and interpret simple population models
- 3) Appreciate how population ecology applies to our understanding of the ecology and evolution of microbial, plant, and animal systems.
- 4) Students will also develop their writing skills in the lab and through lecture exams that include essay-type questions.

Information on literal descriptors for grading at the University of Saskatchewan can be found at: <http://students.usask.ca/current/academics/grades/grading-system.php>

Please note: There are different literal descriptors for undergraduate and graduate students. More information on the Academic Courses Policy on course delivery, examinations and assessment of student learning can be found at:

<http://policies.usask.ca/policies/academic-affairs/academic-courses.php>

The University of Saskatchewan Learning Charter is intended to define aspirations about the learning experience that the University aims to provide, and the roles to be played in realizing these aspirations by students, instructors and the institution. A copy of the Learning Charter can be found at: http://www.usask.ca/university_secretary/LearningCharter.pdf

University of Saskatchewan Grading System (for undergraduate courses)

Exceptional (90-100) A superior performance with consistent evidence of

- a comprehensive, incisive grasp of the subject matter;
- an ability to make insightful critical evaluation of the material given;
- an exceptional capacity for original, creative and/or logical thinking;
- an excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently.

Excellent (80-90) An excellent performance with strong evidence of

- a comprehensive grasp of the subject matter;
- an ability to make sound critical evaluation of the material given;
- a very good capacity for original, creative and/or logical thinking;
- an excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently.

Good (70-79) A good performance with evidence of

- a substantial knowledge of the subject matter;
- a good understanding of the relevant issues and a good familiarity with the relevant literature and techniques;
- some capacity for original, creative and/or logical thinking;
- a good ability to organize, to analyze and to examine the subject material in a critical and constructive manner.

Satisfactory (60-69) A generally satisfactory and intellectually adequate performance with evidence of

- an acceptable basic grasp of the subject material;
- a fair understanding of the relevant issues;
- a general familiarity with the relevant literature and techniques;
- an ability to develop solutions to moderately difficult problems related to the subject material;
- a moderate ability to examine the material in a critical and analytical manner.

Minimal Pass (50-59) A barely acceptable performance with evidence of

- a familiarity with the subject material;
- some evidence that analytical skills have been developed;
- some understanding of relevant issues;
- some familiarity with the relevant literature and techniques;
- attempts to solve moderately difficult problems related to the subject material and to examine the material in a critical and analytical manner which are only partially successful.

Failure <50 An unacceptable performance

Class Schedule

Week	Topic
1 Jan 5-9	Density independent growth
2 Jan 12-16	Density dependent growth and Intraspecific competition
3 Jan 19-23	Population regulation
4 Jan 26-30	Population age structures
5 Feb 2-6	Metapopulation ecology
6 Feb 9-13	Life-history strategies
7 Feb 16-20	Mid-term Break
8 Feb 23-27	Interspecific competition
9 Mar 2-6	Mutualism
10 Mar 9-13	Host-parasite interactions
11 Mar 16-20	Predator-prey interactions
12 Mar 23-27	Special Topics in population ecology
13 Mar 30-Apr 3	Special Topics in population ecology
TBA	FINAL EXAM

Midterm and Final Examination Scheduling

Midterm and final examinations must be written on the date scheduled.

Midterm Exam will be FEB 13, at 1:30pm in room 212 Biology (this exam will be written during the lab period)

Final examinations may be scheduled at any time during the examination period (April 11th – April 30th); students should therefore avoid making prior travel, employment, or other commitments for this period. If a student is unable to write an exam through no fault of his or her own for medical or other valid reasons, documentation must be provided and an opportunity to write the missed exam may be given. Students are encouraged to review all examination policies and procedures:

<http://students.usask.ca/academics/exams.php>

Laboratory Schedule

Week	Topic
1 Jan 5-9	NO LAB
2 Jan 12-16	Population growth models (Evaluation: Sample problem, Graph submission, material on quiz 1 = Approximately 4% of total mark)
3 Jan 19-23	Life Tables (Evaluation: Sample problem, Life table development, material on quiz 1 = Approximately 4% of total mark)
4 Jan 26-30	Key-Factor Analysis (Evaluation: Pre marked intro, Lab report = Approximately 7.3% of total mark) INTRODUCTION DUE JAN 30@12:00 pm, FULL REPORT DUE FEB 27@12:00 PM
5 Feb 2-6	Leslie Matrices (Evaluation: Sample problem, material on quiz 1 = 2.2% of total mark)
6 Feb 9-13	MIDTERM EXAM (in lab period)
7 Feb 16-20	MIDTERM BREAK
8 Feb 23-27	Population Census Techniques: Mark and Recapture (Evaluation: Lab report = Approximately 7.3% of total mark) FULL REPORT DUE MAR 20@12:00 PM
9 Mar 2-6	Interspecific Competition (Evaluation: Sample problem, Assignment = Approximately 4.4% of total mark) ASSIGNMENT DUE MAR 13 in lab @1:30 PM
10 Mar 9-13	Predator-Prey Interactions: Functional Response (Evaluation: Lab report = Approximately 7.3% of total mark) FULL REPORT DUE APR 2@12:00 PM
11 Mar 16-20	Tutorial time for Mark and Recapture and Functional Response for predator-prey
12 Mar 23-27	Population Viability Analysis (Evaluation: Assignment in Lab = Approximately 3.6% of total mark)
13 Mar 30-Apr 3	NO LAB
TBA	FINAL EXAM

Instructor Information

Contact Information (Lecture)

Dr. Michael Pollock
101-108 Research Drive
Ph: 306-230-2314
Michael.pollock@wsask.ca

Office Hours

Upon request

Contact Information (Lab)

Scott Halpin
Room 150 Biology
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scott.halpin@usask.ca

Resources

Readings/Textbooks (not required)

Rockwood RL, 2006. Introduction to Population Ecology. Blackwell Publishing

Textbooks are available from the University of Saskatchewan Bookstore:

www.usask.ca/consumer_services/bookstore/textbooks

Downloads

These will be available as appropriate through the course Blackboard. The only document that you are required to download and read is the course syllabus. Please note that instructor's Powerpoint slides/lecture notes will be provided to you as a courtesy. We will endeavor to have the lecture/PowerPoint slides/notes posted sometime in advance of the lectures; however, this will not be guaranteed.

Grading Scheme

Mid-term exam	20%
Final exam	40%
Lab reports (3) + in lab assignments/quizzes)	40%
Total	100%

Integrity Defined (from the Office of the University Secretary)

The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students should read and be familiar with the Regulations on Academic Student Misconduct (<http://www.usask.ca/secretariat/student-conduct-appeals/StudentAcademicMisconduct.pdf>) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (<http://www.usask.ca/secretariat/student-conduct-appeals/StudentNon-AcademicMisconduct.pdf>)

For more information on what academic integrity means for students see the Student Conduct & Appeals section of the University Secretary Website at: <http://www.usask.ca/secretariat/student-conduct-appeals/forms/IntegrityDefined.pdf>

Examinations with Disability Services for Students (DSS)

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Disability Services for Students (DSS) if they have not already done so. Students who suspect they may have disabilities should contact DSS for advice and referrals. In order to access DSS programs and supports, students must follow DSS policy and procedures. For more information, check <http://students.usask.ca/health/centres/disability-services-for-students.php>, or contact DSS at 966-7273 or dss@usask.ca.

Students registered with DSS may request alternative arrangements for mid-term and final examinations. Students must arrange such accommodations through DSS by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by DSS.

Acknowledgements

Course Contributor(s)