

## COURSE SYLLABUS

COURSE TITLE:	BIOL 451 Ichthyology	TERM:	T2 2016/2017
COURSE CODE:	24496	DELIVERY:	Lecture & Practicum
COURSE CREDITS:	3.0	START DATE:	January 4 <sup>th</sup> 2017
CLASS SECTION:	01	LAB LOCATION:	Rm 307 Biology Bldg
CLASS LOCATION:	Rm 125 Biology Bldg	LAB TIME:	1:30 PM to 5:20 PM (M)
CLASS TIME:	12:30-1:20 (MWF)	WEBSITE:	Via Blackboard

### **Course Description**

Fish have become the most diverse vertebrates on Earth inhabiting every continent, fresh and salt waters, temperate and tropical regions, hot and cold deserts. We examine the evolution of fish and discuss the physical and physiological adaptations permitting fish to occupy this diversity of habitats. In addition, we examine the exploitation/conservation/management of fishes through aquaculture and commercial fisheries.

Prerequisites: BIOL 121 and 224 (formerly BIOL 203) and BIOL 228 (formerly BIOL 253). Note: BIOL 302 (formerly BIOL 401) is recommended.

### **Learning Outcomes**

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

- 1) Understand fish phylogeny and the physical changes/adaptations that have led to fish being the most diverse vertebrates on earth.
- 2) Understand fish taxonomy. Be able to list unique/ identifying features of key taxonomic groups.
- 3) Develop a rudimentary knowledge of aquaculture: Be able to discuss types of aquaculture systems, management strategies/challenges, fish diseases.
- 4) Develop a rudimentary knowledge of fisheries management: Be able to discuss management approaches for commercial versus recreational fisheries.
- 5) Fish physiology. Be able to discuss fish physiology in relation to environmental adaptation.

6) Understand and be able to discuss different forms of fish behavior, why a particular behavior may have evolved and the benefits acquired through that behavior.

**Note:** 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](http://www.usask.ca/university_secretary/LearningCharter.pdf)

More information on the Academic Courses Policy on course delivery, examinations and assessment of student learning can be found at:

[http://www.usask.ca/university\\_secretary/council/academiccourses.php](http://www.usask.ca/university_secretary/council/academiccourses.php)

## **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

## Course Overview

This course is designed to introduce you to the vast and exciting field of biology, with a focus on biological diversity, evolution, adaptations of organisms to specific environments, and the evolutionary and ecological factors influencing changes in biodiversity over time and space.

## Class Schedule

Week	Module	Labs
1 (Jan 4-6)	Introduction: Why study fish	<b>NO LAB</b>
2 (Jan 9-13)	Taxonomy/phylogeny of fish	Lab 1 - Introduction
3 (Jan 16-20)	Taxonomy/phylogeny of fish	Lab 2 – Fish Diversity
4 (Jan 23-27)	Fishes of Saskatchewan/Aquaculture	Lab 3 – Fish Ecology
5 (Jan 30 – Feb 3)	Fisheries Management/Conservation	Lab 4 – Fisheries Management
6 (Feb 6-10)	Fisheries Management/Conservation	Lab 5 – Fishes in the Sciences
7 (Feb 13-17)	Careers in Fisheries Science / Fish Anatomy	<b>Midterm Exam (Lecture material only)</b>
8 (Feb 20-24)	<b>Midterm Break</b>	<b>NO LAB – MIDTERM BREAK</b>
9 (Feb 27-Mar 3)	Fish Behaviour	Lab 6 – Fish Anatomy
10 (Mar 6-10)	Adaptive Radiation of Fishes	Lab 7 – Fisheries Management/Fish in Sciences Presentations
11 (Mar 13-17)	Adaptive Radiation of Fishes	Lab 8 – Fish Behaviour
12 (Mar 20-24)	Adaptive Radiation of Fishes	Lab 9 – Fish Identification
13 (Mar 27- 31)	Adaptive Radiation of Fishes	Lab 10 – Review/Open lab <b>Behaviour Lab Report Due</b>
14 (Apr 3-7)	Review Lecture	Lab Final

### Midterm and Final Examination Scheduling

Midterm and final examinations must be written on the date scheduled. Final examinations may be scheduled at any time during the examination period 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>

## **Mode of Final Examination**

### **Laboratory class information:**

1. Labs begin in the week of JANUARY 9th. Students are expected to attend and be on time for all scheduled labs. The lab schedule is provided on the previous page of this document.
2. All lab assignments must be completed to receive credit for the course.
3. No electronic devices allowed.
4. Any other questions regarding the lab should be directed to the laboratory instructors.

## **Instructor Information**

### **Contact Information**

Dr. Mike Pollock Instructor	<a href="mailto:Michael.pollock@wsask.ca">Michael.pollock@wsask.ca</a>	101-108 Research Drive 306-230-2314
Reid Bryshun TA	reid.bryshun@usask.ca	306-371-2121
Phil Anderson TA	p.anderson@usask.ca	306-241-7954

### **Office Hours**

By appointment

## Required Activities Outside of Class Time

None

## Required Resources

None

## Readings/Textbooks

None

## 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 or lecture notes will be ideally provided to you as a courtesy 24hrs prior to lecture. It is recommended but not required that you download or print these slides/notes.

## Grading Scheme

Midterm	20%
Lab assignments/final	40%
Final	40%
Total	100%

## Evaluation Components

### Midterm

**Value:** 20% of final grade  
**Due Date:** See Course Schedule  
**Length:** 3 hours  
**Type:** Short answer and essay. (Based on lecture material only)

### Lab

**Value:** 40% of final grade  
**Date:** See Course Schedule  
**Length:** 4 hours  
**Exam Type:** Comprehensive

### Final Exam

**Value:** 40% of final grade  
**Date:** Date to be set  
**Length:** 3 hours  
**Type:** Comprehensive short answer and essay (based on lecture material only)

## Submitting Assignments

Assignments must be printed off and handed in to the TAs in person.

## **Late Assignments**

Late assignments will be penalized with 10% off the final assignment grade per day (including weekend days).

## **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](mailto: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.

## **Student Supports**

### **Student Learning Services**

Student Learning Services (SLS) offers assistance to U of S undergrad and graduate students. For information on specific services, please see the SLS web site <https://www.usask.ca/ulc/>.

### **Student and Enrolment Services Division**

The Student and Enrolment Services Division (SESD) focuses on providing developmental and support services and programs to students and the university community. For more information, see the SESD web site <http://www.usask.ca/sesd/>.