UNIVERSITY OF SASKATCHEWAN

Department of Biology

COURSE SYLLABUS

COURSE TITLE:	BIOL 318 Comparative Animal Systems Physiology		
COURSE CODE:	24098	TERM:	Winter 2016
COURSE CREDITS:	3.0	DELIVERY:	Lecture & Practicum (Lab)
CLASS SECTION: LECTURE LOCATION: LECTURE TIME: WEBSITE:	01 room 124 Biology Bldg 9:30 to 10:20 am MWF via PAWS/Blackboard	START DATE: LAB LOCATION: LAB TIME:	6 Jan 2015 room 212 Biology Bldg 1:30-5:20 pm on Thursday

Course Description

An in-depth examination of cardiovascular, respiratory, osmoregulatory, digestive, and reproductive system physiology in animals. Examples are drawn from vertebrate and invertebrate models. Emphasizes endocrine and nervous coordination of cellular and whole animal body functions.
Prerequisite(s): BIOL 317 (formerly BIOL 217).
Note: Students with credit for BIOL 218 will not receive credit for this course.

Learning Outcomes

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

1. have an in depth understanding of physiological principles and processes associated with major animal organ systems

2. develop their problem-solving skills and be able to apply their theoretical knowledge to realistic medical, veterinary or other applied case studies.

3. have improved their scientific writing skills

4. be able to find and read up-to-date scientific literature relevant to course material

5. have competent oral presentation skills

6. be able to work with a group to accomplish complex tasks

7. understand the scientific knowledge discovery process and appreciate that new findings are continually transforming our understanding of how the animal body functions

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/learning_charter/

Course Overview

The course consists of 50 minutes of lecture on the MWF schedule, starting on Jan 6 2016 and ending on Apr 6 2014. This will result in 36 days of lectures during the term (approximately 30 hours of face-to-face instruction in the lectures). Six afternoons of hands-on lab exercises plus three afternoons for student presentations are also included in this course. Completion of the labs is a required course component. You will hone your scientific writing and oral communication skills through the preparation of group case reports, literature research assignments and a class presentation during the laboratory. In the hands-on exercises, you will work in small groups to solve problems associated with case studies drawn from medical, veterinary or other real-world situations. The case studies are used to provide a practical illustration of some of the major lecture concepts and are coordinated with lecture material as shown in the schedule below. You will have access to the internet and electronic University Library resources during the lab period. A one-page report summarizing your case study will be prepared as a group exercise during the lab period and submitted at the conclusion of the lab. Each student will also be assigned three recent scientific articles to read and understand. These will be spaced-out during the term and coordinated with other lab work and lecture material as shown in the Class Schedule below. You will be responsible for completing a one page summary of each article, and giving a 20 minute oral presentation on one of the articles. Note that the lab periods are scheduled for 3 hrs 50 minutes per afternoon; students must make themselves available for this entire time period.

Class Schedule

Week/ Dates	**Instructor Major Lecture Topics Laboratory Activity**	**Readings***	**Student Work Due/Other Types of Assessment**
Week 1 Jan 6 Jan 8	Nature and purpose of class; Circulatory System Physiology *No lab scheduled this week*	Textbook: Part V (Oxygen, Carbon Dioxide & Internal Transport)	Nothing due
Week 2 Jan 11 Jan 13 Jan 15	Circulatory System Physiology *Lab Period: Orientation & Intro to Literature Research Assignment #1 (cardiac physiology)*	Textbook: Part V Lab Folder: Instructions for Literature Research Assignments	Nothing due
Week 3 Jan 18 Jan 20 Jan 22	Circulatory System Physiology *Lab Period*: Case Study #1 (cardiac electrophysiology)	Textbook: Part V Lab Folder: Instructions for Case Study #1	Group Case #1 Report
Week 4 Jan 25 Jan 27 Jan 29	Circulatory System Physiology *Lab Period*: Case Study #2 (cardiac pharmacology)	Textbook: Part V Lab Folder: Instructions for Case Study #2	Group Case #2 Report
Week 5 Feb 1 Feb 3 Feb 5	Circulatory System Physiology Respiratory System Physiology *Lab Period:* Literature Research #1 - Student Presentations; Intro to Literature Research	Textbook: Part V Lab Folder: Instructions for Literature Research Assignments	Literature Research Assignment #1 Summary

	Assignment #2 (renal physiology)		
Week 6 Feb 8 Feb 10 Feb 12	Respiratory System Physiology *Lab Period:* Case Study #3 (respiratory physiology)	Textbook: Part V Lab Folder: Instructions for Case Study #3	Group Case #3 Report
Week 7 Feb 15 Feb 17 Feb 19	Midterm Break *No lectures or lab scheduled this week*		
Week 8 Feb 22 Feb 24 Feb 26	Osmoregulatory Physiology *Lab Period:* Case Study #4 (renal physiology)	Textbook: Part VI Lab Folder: Instructions for Case Study #4	Group Case #4 Report
Week 9 Feb 29 Mar 2 Mar 4	Osmoregulatory Physiology Midterm Exam - 50 minutes during lab period on Mar 3 (to end of Respiratory System Physiology)	Textbook: Part VI	
Week 10 Mar 7 Mar 9 Mar 11	Digestive System Physiology *Lab Period:* Literature Research #2 - Student Presentations; Intro to Literature Research Assignment #3 (endocrine physiology)	Textbook: Part II Lab Folder: Instructions for Literature Research Assignments	Literature Research Assignment #2 Summary
Week 11 Mar 14 Mar 16 Mar 18	Digestive System Physiology *Lab Period:* Case Study #5a (gastointestinal physiology)	Textbook: Part II Lab Folder: Instructions for Case Study #5a	Group Case #5 Powerpoint exercise
Week 12 Mar 21 Mar 23	Endocrinology & Reproductive Physiology *Lab Period:* Case Study #5b (gastointestinal physiology)	Textbook: Chapters 16 & 17 Lab Folder: Instructions for Case Study #5b	Group Case #5 Report
Mar 25	Good Friday – no lecture		
Week 13 Mar 28 Mar 30 Apr 1	Endocrinology & Reproductive Physiology *Lab Period:* Literature Research #3 - Student Presentations	Textbook: Chapters 16 & 17	Literature Research Assignment #3 Summary
Week 14 Apr 4 Apr 6	Endocrinology & Reproductive Physiology Course wrap-up *No lab period this week*		Nothing due – Study for the final!
	Final Exam during regular exam period (Apr 9 to 30)		

* Additional readings may be assigned as the course proceeds. These will be noted during the lectures or in the lab folders as appropriate.

Instructors:

Contact Information:

Dr Tracy Marchant	room 322 Biology bldg tracy.marchant@usask.ca	966-4420
Ms Sheri Fisher (lab coordinator/instructor)	room G77.3 Thorvaldson sheri.fisher@usask.ca	966-4431
Ms Rachel Parkinson (teaching assistant)	room 326 Biology bldg rachel.parkinson@usask.ca	966-4447

Office Hours: Generally-speaking, the instructors above will be available in their offices on a drop-in basis. However, please note that all instructors have other commitments that may take them away from their office. Specific appointments can be set by email or through a phone call. Email responses to specific questions about course material are at the discretion of each instructor; information about individual policies will be provided in the lecture or laboratory by each instructor.

Instructor Profiles & Other Information: Dr Marchant is a regular faculty member/professor in the Department of Biology. She holds advanced degrees (MSc, PhD) and teaches and conducts research in the general area of animal physiology. Ms Fisher also holds an advanced degree (MSc) and is responsible for coordinating and teaching in the laboratories for BIOL 318. Ms Parkinson is an MSc student in the Department of Biology and is responsible for teaching and grading in the laboratories for BIOL 318..

Required Resources

Textbooks

Hill, Wyse & Anderson. 2012. Animal Physiology 3 ed, Sinauer.

This is available from the University of Saskatchewan Bookstore:
http://www.usask.ca/consumer_services/bookstore/textbooks

Laboratory Instructions for BIOL 318 (will be available as a free download from the course Blackboard)

Electronic Resources

The laboratory portion of this course will require a working knowledge of computers and various computer programs, including MS Excel, Word and Powerpoint. Computers will be used extensively to search the internet and access University Library resources and prepare reports in the laboratory. You will need to access your University computer account during the laboratory; make sure you know your university nsid and password and how to log on to your account. Further details are in the lab folders.

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 Dr Marchant's Powerpoint slides may be provided to you as a courtesy. You are not required to download or print these slides. While I will endeavour to have the lecture Powerpoint slides posted sometime in advance of the lecture, I will not guarantee this.

Supplementary Resources

From time to time, your instructors may make supplementary material available to you through the course Blackboard. This material will not replace the lecture or lab experience and you are encouraged to attend all lectures and take your own notes. A number of paper-based resources for the laboratory may be placed on reserve for you in the Natural Sciences Library; information about these is provided in the lab folders as appropriate.

Grading Scheme

Midterm Exam	25
Final Exam	40
Group Case Reports/Description (six X 2.5% each)	15
Literature Research Summary (3 X 5% each)	15
Oral Presentation (one)	5
Total	100%

Evaluation of Student Performance

Midterm Exam

Value: 25% of final course grade
Date: Mar 3 (to be written at 2 pm during the lab period)
Length: 50 minutes
Format: a mix of multiple choice questions and those requiring a written answer.
Description: Will include lecture material to the end of Respiratory Physiology. Calculators allowed. No phones, laptops, tablets or other materials allowed.

Final Exam

Value: 40% of final grade
Date: Consult the Final Exam Schedule when it is released.
Length: 3 hours
Format: a mix of multiple choice questions and those requiring a written answer.
Description: The exam is comprehensive in that it will cover all lecture material. However, material delivered since the midterm exam will be emphasized. Calculators allowed. No phones, laptops, tablets or other material allowed. Students should plan to be in Saskatoon during the final exam period (Apr 9 to 30) as the BIOL 318 final exam could be scheduled on any day during this period.

Group Case Reports:

Value: 15% of final grade
Due Date: See Course Schedule for exact dates
Format: Each group of students will prepare five one-page report about the case they studied in the lab. Each report is to be submitted electronically to their laboratory demonstrator prior to the end of the lab period when the case was studied. Each group will also prepare a powerpoint case description for their fellow student to analyze in the laboratory.
Description: Comprehensive information about the format and style to be used for these reports is contained in the lab folder and will be explained in detail during the orientation lab in week two of the course. Each report will consist of one page of writing plus a separate page for the references used to prepare the case report. Students are required to know and understand what constitutes plagiarism and

the University's Regulations on Academic Student Misconduct (see below). Five cases will be studied by each group and each case report will be worth 2.5% of the final grade. The powerpoint case description is to be prepared following the format of the other case descriptions prepared by Dr. Marchant and will consist of 5 to 7 powerpoint slides

Publication of the Case Report: Each group case report will be posted on the course Blackboard so that other students can read and learn from the case. The grade assigned to the report will remain confidential (ie will not be posted).

Literature Research Summaries:

Value: 15% of final grade

Due Date: See Course Schedule for exact dates

Format: Each student will independently prepare a one-page summary of the research article they were assigned to study in the lab. Each summary is to be submitted electronically to their laboratory demonstrator prior to the start of the lab period when presentations are given on each research topic.

Description: Comprehensive information about the format and style to be used for these summaries is contained in the lab folder and will be explained in detail during the orientation lab in week two of the course. Each summary will consist of one page of writing plus a separate page for the references used to prepare the summary. Students are required to know and understand what constitutes plagiarism and the University's Regulations on Academic Student Misconduct (see below). Three articles will be studied by each student and each summary will be worth 5% of the final grade.

Publication of the Literature Research Summary: Each summary will be posted on the course Blackboard so that other students can read and learn from the literature research assignment. The grade assigned to the summary will remain confidential (ie will not be posted).

Lab Presentation:

Value: 5% of final grade

Date: See Course Schedule; exact dates are assigned randomly.

Format: 30 minute Powerpoint presentation

Description: Each student will be required to give one presentation detailing the article they studied for a Literature Research Assignment. Presentation topics are assigned randomly in the lab orientation period during week two.

Publication of the Lab Presentation: Each Powerpoint will be posted on the course Blackboard so that other students can read and learn from the presentation. The grade assigned to the presentation will remain confidential (ie will not be posted).

Submitting Assignments/Feedback to Students

Students will work collaboratively with other group members to prepare a one-page summary of each case study assigned to them. The case reports will be graded by the teaching assistant who will also watch for plagiarism. Reports will be graded and returned on a schedule such that students will have regular feedback about their work after they have submitted the first two reports. Each student must independently write a one-page summary for each of the three research articles assigned to them. These will be graded by the Ms Parkinson who may consult with Dr Marchant. Grades will be assigned based on the quality of the writing including formatting, grammar, spelling, scientific writing and other aspects of the report. Additional information about the format of the reports is contained in the lab folder on Blackboard; students must read this carefully. The oral presentation will be evaluated by the Ms Fisher, Ms Parkinson and other students in the lab section. A rubric and weighting scheme for assessing the presentation will be posted on Blackboard. Presenters will be provided with written feedback about their performance. Marks from the midterm exam will be available 7 to 10 days after the exam, well in advance of the last day to withdraw deadline.

Attendance Expectations/Late Assignments/Missed Lab Deadlines

Students are expected to attend all scheduled lab periods. Lab work submitted after the deadline will be penalized by a 10% reduction in the mark assigned to the work for each day that the work is late. Students who miss a deadline due to a protracted illness or extenuating personal circumstances are required to contact the lab coordinator (an email or phone call to Fisher is fine) on the day the assignment is due and discuss the reasons why the deadline is being missed. There are no exceptions to this policy; students who fail to proactively advise the lab coordinator that they will miss the deadline will be subject to the 10% per day penalty. Depending on the situation, additional documentation may be requested from the student. Deadline extensions will only be provided when the protracted illness or extenuating personal circumstance is verifiable. Ms Fisher may consult with Dr Marchant during this verification process. Similar procedures must be followed if a student is going to miss giving their scheduled lab presentation. If a student is unable to attend a laboratory period through no fault of his or her own for medical or other valid reasons, an opportunity to complete the group lab work at another time may be given. Note that each situation will be judged separately and the instructors may choose not to allow the lab work to be completed at another time. In that case, the student will be assigned a grade of 0 (zero) for any work that was missed

Criteria That Must Be Met to Pass

Students must write the final exam in order to pass the course. Students who do not write the final exam will be assigned a final course grade of 49%, or lower depending on their performance in other aspects of the course, along with a grade comment of INF (Incomplete Failure). The final grade will be adjusted if a deferred final exam is written (see below).

Midterm and Final Examination Scheduling

Midterm and final examinations must be written on the date scheduled. Final course examinations may be scheduled at any time during the examination period (Apr 9 to 30); students should therefore avoid making prior travel, employment, or other commitments for this period. If a student is unable to write the midterm 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 who miss the final exam must contact the College of Arts & Science and apply for a deferred final exam. Deferred exams may utilize a different format than the regular exam, at the sole discretion of the instructor.

University of Saskatchewan Grading System

Students in BIOL 318 are reminded that the University has established a grading system to be used in all of its courses. Information on literal descriptors for grading at the University of Saskatchewan (reproduced below) can be found at:
http://students.usask.ca/current/academics/grades/grading-system.php

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

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/academic-misconduct.php 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/non-academic-misconduct.php

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/resources.php

Examinations through 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/current/disability/ 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. Students who are in need of accommodation for other aspects of BIOL 318 must present the appropriate letter from DSS to the course instructors. Accommodation for the midterm and final exam must be made through regular DSS procedures.