1 Course Details

1.1 Calendar Description

This multidisciplinary course provides an introduction to various aspects of mammalian reproduction of medical and veterinary significance. The course will cover the normal physiology and gross and micro anatomy of the female and male reproductive systems. Placentation, pregnancy and post-partum physiology will also be addressed. The impact of the reproductive biology on social and economic issues will be discussed.

Pre-Requisite(s): (1 of BIOM*3010, HK*3401, HK*3501, ZOO*2090), (1 of BIOM*3200, HK*3810, HK*3940, ZOO*3210, ZOO*3620), (BIOM*4070 or ZOO*3000)

1.2 Timetable

Timetable is subject to change. Please see WebAdvisor for the latest information.

1.3 Final Exam

Exam time and location is subject to change. Please see WebAdvisor for the latest information.

2 Instructional Support

2.1 Instructional Support Team

Instructor: Pavneesh Madan Dr.
Email: pmadan@uoguelph.ca
Telephone: +1-519-824-4120 x54480
Office: OVC 3605
3 Learning Resources

3.1 Required Resource(s)

Because of rapid advancements in reproductive biology, no single textbook appears to be sufficiently up-to-date or comprehensive enough to be recommended for the course. However, we will use Essential Reproduction (7TH Edition) by Johnson MH and Everitt BJ (2013) as a base model for this course.

3.2 Recommended Resource(s)


3.3 Additional Resource(s)

Course Manual (Notes)
Each lecturer will provide handouts, which will be posted on Courselink, as per the policy of the university. Students will be expected to be familiar with the manual content so as to be able to answer questions based on the material.

Reproduction (official journal of the Society for Reproduction and Fertility) (Article)
The mini reviews and supplements provide excellent summaries on a variety of topics related to reproductive biology and medicine.

Biology of Reproduction (official journal of the Society for the Study of Reproduction) (Article)
The mini reviews and supplements provide excellent summaries on a variety of topics related to reproductive biology and medicine.

Animal Reproduction Science (Article)
Consult for the latest comprehensive reviews on many aspects of reproductive biology, embryology and biotechnology.

Biology Of Reproduction (Article)
Consult for the latest comprehensive reviews on many aspects of reproductive biology,
embryology and biotechnology.

**Dom. Animal Endocrinology (Article)**
Consult for the latest comprehensive reviews on many aspects of reproductive biology, embryology and biotechnology.

**Endocrinology (Article)**
Consult for the latest comprehensive reviews on many aspects of reproductive biology, embryology and biotechnology.

**Fertility And Sterility (Article)**
Consult for the latest comprehensive reviews on many aspects of reproductive biology, embryology and biotechnology.

**Human Reproduction (Article)**
Consult for the latest comprehensive reviews on many aspects of reproductive biology, embryology and biotechnology.

**Reproduction (Article)**
Consult for the latest comprehensive reviews on many aspects of reproductive biology, embryology and biotechnology.

**Reproductive Biology (Article)**
Consult for the latest comprehensive reviews on many aspects of reproductive biology, embryology and biotechnology.

**Repro. Biol. & Endocrinology (Article)**
Consult for the latest comprehensive reviews on many aspects of reproductive biology, embryology and biotechnology.

**Repro. Fertility & Dev. (Article)**
Consult for the latest comprehensive reviews on many aspects of reproductive biology, embryology and biotechnology.

**Repro. In Domestic Animals (Article)**
Consult for the latest comprehensive reviews on many aspects of reproductive biology, embryology and biotechnology.

**Theriogenology (Article)**
Consult for the latest comprehensive reviews on many aspects of reproductive biology, embryology and biotechnology.

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### 4 Learning Outcomes

#### 4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. The fundamental anatomy, histology, physiology and endocrinology of the male and female reproductive systems in various mammalian species.
2. The basic patterns and periodicity of reproductive processes in mammals.
3. The basic diagnostic methods and approaches to solving problems in reproductive sciences/medicine.
5. The basic principles of scientific communication, oral and written, pertaining to reproductive physiology/medicine.

5 Teaching and Learning Activities

Lectures: Monday and Wednesday 9:30-11:20 a.m. (Rm 1642 OVC).

Methods of Presentation

The materials and issues will be presented in the form of lectures, labs and/or demonstrations. In addition, there will be a visit to the Toronto Zoo to showcase role of reproductive technologies in conservation and propagation of species.

5.1 Lecture

Week 1

Topic(s): Course intro and Reproductive Biology Around Us - Overview

Class #1 - Jan 07, 2019
Lecturer: Pavneesh Madan

Week 1

Topic(s): Review: Anatomy of Female & Male Reproductive Tract; Reproductive Endocrinology

Class #2 - Jan 09, 2019
Lecturer: Madan

Week 2

Topic(s): Review: Reproductive Endocrinology (Contd)

Class #3 - Jan 14, 2019
Lecturer: Madan
Topic(s): Guidance session for “Ignite Talks”, “Repro Dragon’s Den” and “Amazing Repro Race”

Class #4 - Jan 16, 2019
Lecturer: Madan

Week 3

Topic(s): Genetic & Environmental Determinants of Sex

Class #5 - Jan 21, 2019
Lecturer: Allan King

Week 3

Topic(s): Disorders of sexual development

Class #6 - Jan 23, 2019
Lecturer: King

Week 4

Topic(s): Making Sperm & Eggs

Class #7 - Jan 28, 2019
Lecturer: Laura Favetta

Week 4

Topic(s): Making Embryos

Class #8 - Jan 30, 2018
Lecturer: Favetta

Week 5

Topic(s): Implantation and placentation

Class #9 - Feb 04, 2019
Lecturer: Chandra Tayade
Week 5

Topic(s): Parturition & Post Partum

Class #10 - Feb 06, 2019

Lecturer: Madan

Week 6

Topic(s): 'Ignite Talks’ (Student Presentations)

Class #11 - Feb 11, 2019

Week 6

Topic(s): 'Ignite Talks’ (Student Presentations)

Class #12 - Feb 13, 2019

Week 7

Topic(s): Winter Break

Class #13 - Feb 18, 2019

Week 7

Topic(s): Winter Break

Class #14 - Feb 20, 2019

Week 8

Topic(s): Reserve Snow Day/Reserve Ignite Talks Day

Class #15 - Feb 25, 2019

Week 8

Topic(s): Human Sexuality - Lifestyle factors and reproductive health

Class #16 - Feb 27, 2019

Lecturer: Robin Milhausen

Week 9
Topic(s): Developing products - Science to Business
Class #17 - Mar 04, 2019
Lecturer: Dave Hobson

Week 9
Topic(s): Lab Module
Class #18 - Mar 11, 2019
Lecturer: Madan/Favetta

Week 10
Topic(s): Addictions, Mental Health & Reproduction
Class #19 - Mar 11, 2019
Lecturer: Francesco Leri

Week 10
Topic(s): Endocrinology of Stress in Reproduction
Class #20 - Mar 13, 2019
Lecturer: Neil MacLusky

Week 11
Topic(s): The “Amazing Repro Race”
Class #21 - Mar 18, 2019
Lecturer: Madan/King

Week 11
Topic(s): Applications of Reproductive Biotechnologies
Class #22 - Mar 20, 2019
Lecturer: Gaby Mastromonaco
Week 11

Topic(s): Field trip to “Toronto Zoo”, 2000 Meadowvale Rd, Toronto, ON M1B 5K7

Field Trip - Mar 23, 2019 (Saturday)

Lecturer: Mastromonaco

Week 12

Topic(s): “Repro Dragon’s Den” & Proposal Submission

Class #23 - Mar 25, 2019

Lecturer: Invited Panel

Week 12

Topic(s): “Repro Dragon’s Den” & Proposal Submission

Class #24 - Mar 27, 2019

Lecturer: Invited Panel

Week 13

Topic(s): Regulating and Restoration of Fertility in Humans

Class #25 - Apr 01, 2019

Lecturer: Crystal Chan

Week 13

Topic(s): Course wrap up and Q/A

Class #26 - Apr 03, 2019

6 Assessments

Methods of Evaluation

Students will be expected to actively participate in the regular classroom discussions. They will also prepare oral and written presentations and reports. One of the course objectives is to provide all students with the opportunity to learn the basics of reproductive biology and then
apply that understanding to the solving of reproductive problems. Thus, evidence of sufficient command of the basic science will be an integral part of all evaluations. Utilization of the current scientific literature in preparing the presentations will be expected.

6.1 Assessment Details

Classroom & Social Media Participation/Discussion (5%)
Students are strongly encouraged to participate in class discussions. They will be expected to provide evidence of having read both popular and scientific literature and to have thought about varying aspects of reproductive biology. The grade will recognize and reward your effort in reading, thinking and presenting your ideas in class.

Ignite Talks (Student Presentations) (20%)
Ignite (Ignite Talks) is a series of events where speakers have five minutes to talk on a subject accompanied by 20 slides, for 15 seconds each, automatically advanced.

However for this course the modified Ignite talks will be 10 minutes long. The speaker will be allowed to use maximum of 40 slides without any automatic advancement.

Students are encouraged to submit drafts of the presentations for a feedback before the day of presentation.

Ignite Talks will be graded based on the following criteria:

- Content, analysis of facts and synopsis of current understanding of the subject,
- Organization of material, quality of visual aids, delivery of scientific content and brevity.

However for this course the modified Ignite talks will be 10 minutes long. The speaker will be allowed to use maximum of 40 slides without any automatic advancement.

Students are encouraged to submit drafts of the presentations for a feedback before the day of presentation.

Ignite Talks will be graded based on the following criteria:

- Content, analysis of facts and synopsis of current understanding of the subject,
- Organization of material, quality of visual aids, delivery of scientific content and brevity.

Repro Dragon’s Den (Student Group Presentations/Written Proposals) (25%)
In consultation with the instructors, students (divided into groups) will work on a topic in reproductive biology. The students should be assimilating the material presented in the course and come up with a new idea for a scientific grant or a business idea. The written report can be in form of a 5-page scientific grant proposal (NSERC format) or a 5-page business proposal. Both the proposals should be written in grammatically correct English.

Scientific grant proposals.Business proposals will be graded on the following criteria:

- Content, identification of problem, innovativeness for addressing the solution, evidence of analysis and thoughtful consideration to previous literature, clarity of presentation,
Repro Amazing Race (20%)
Team of two will race in competition to answer puzzles/questions based on exhibits related to reproductive biology across OVC. The exhibits would be related to topics covered during lectures and will help to review the whole course before the final exam. After answering the questions/solving a puzzle at the station, they will get a clue to go to the next station on campus and follow the same procedure. A total of six stations will be set up. The team to answer all questions correctly in the shortest possible time will be winners and will be awarded special prize donated by some Sponsors.

Final Exam (30%)
This exam will comprise of multiple choice questions designed to test the students integration of the material presented up to this time. In addition, some of the questions will test logic, ability of student to analyze, present or discuss scientific data from scientific literature.

7 Course Statements

7.1 Examination Guideline
Eligibility
Student eligibility for this process is at the discretion of the Chair. For students with three or more exams in a 48-hour period in the first week of the final exam schedule (which includes an exam in a course offered by the Department of Biomedical Sciences) the department will offer a second writing of the exam in the second week of the final exam period. This policy would not apply to exams requiring complicated set-up, such as lab exams.

Process
The second sitting will be scheduled by the Chair’s Office and all such second writings will be offered all together only on one day and time to be decided by the Chair and invigilated by the course instructor and by the course TA (if one is assigned and deemed necessary) or invigilator. Following completion of the exam, the instructor/TA will mark the final exam and submit the grade to the registrar no later than 7 days after the last final exam is scheduled that semester.

Eligible students can request this privilege by sending an e-mail message by the 40th class day to the Department Chair. The Chair will consult with the instructor/course coordinator with a copy to Kim Best (kbestb@uoguelph.ca) regarding consideration of the request. In their request, the student MUST list their complete final exam schedule and a verbatim copy of the following statement:

“This is an accurate representation of my final exam schedule for the current semester as issued by the Registrar’s office. I understand that if I have misrepresented my exam schedule and am granted permission to write the [course code] exam at the later date on that basis, I
will have violated the University's academic misconduct policy which may result in a grade of zero for the [course code] final exam. I understand that steps will be taken to verify my course enrollment and final exam schedule."

*Although we will make every effort possible to accommodate these requests, circumstances may not allow accommodation in all situations, and so we cannot guarantee that requests will be approved. All email requests will receive a written response from the Chair regarding status of approval.*

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8 University Statements

8.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

8.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml

Graduate Calendar - Grounds for Academic Consideration
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml

8.3 Drop Date

Courses that are one semester long must be dropped by the end of the fortieth class day; two-semester courses must be dropped by the last day of the add period in the second semester. The regulations and procedures for course registration are available in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Dropping Courses
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml

Graduate Calendar - Registration Changes
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml

8.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.
8.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance and not later than the 40th Class Day.

More information can be found on the SAS website https://www.uoguelph.ca/sas

8.6 Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity, and it is the responsibility of all members of the University community-faculty, staff, and students-to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff, and students have the responsibility of supporting an environment that encourages academic integrity. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Undergraduate Calendar - Academic Misconduct
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml

Graduate Calendar - Academic Misconduct
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml

8.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless
further permission is granted.

8.8 Resources

The Academic Calendars are the source of information about the University of Guelph’s procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars
https://www.uoguelph.ca/academics/calendars