



EQN*3060 Equine Reproduction

Winter 2019

Section(s): C01

Department of Animal Biosciences

Credit Weight: 0.50

Version 1.00 - January 04, 2019

1 Course Details

1.1 Calendar Description

Students will develop a solid foundation in reproductive endocrinology and physiology in the stallion and the mare, emphasis on physiology, breeding management and recognition of common reproductive problems in stallion, mare or foal. Practical experience includes dissection of reproductive tracts, semen collection and evaluation.

Pre-Requisite(s): BIOL*1090, EQN*2040
Restriction(s): Registration in BBRM.EQM

1.2 Course Description

Students will develop a solid foundation in reproductive endocrinology and physiology in the stallion and the mare, emphasis on physiology, breeding management and recognition of common reproductive problems in stallion, mare or foal. Practical experience includes dissection of reproductive tracts, semen collection and evaluation.

1.3 Timetable

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

Lectures M,W 1:00-2:20pm ANNU102

Labs M 8:30-10:30am ANNU110

1.4 Final Exam

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

Friday April 10, 2019 8:30-10:30am

Location TBA

2 Instructional Support

2.1 Instructional Support Team

Instructor:	Katrina Merkies
Email:	kmerkies@uoguelph.ca
Telephone:	+1-519-824-4120 x54707
Office:	ANNU 249
Office Hours:	By chance or appointment

2.2 Teaching Assistant(s)

Teaching Assistant:	Zijian Liu
Email:	zliu18@uoguelph.ca
Office:	ANNU106
Office Hours:	office hours by appointment only.

3 Learning Resources

3.1 Required Resource(s)

Required Texts (Textbook)

Brinsko, S.P., Blanchard, T.L., Varner, D.D., et al (2011) Manual of Equine Reproduction 3rd ed, St Louis: Mosby/Elsevier

Available in electronic format through Primo
<http://www.sciencedirect.com/science/book/9780323064828>

Brinsko, S.P., Blanchard, T.L. (2005) Manual of Equine Reproduction 2nd ed, St Louis: Mosby/Elsevier.

Available at the Reserve Desk in the Library

3.2 Recommended Resource(s)

Recommended Textbooks (Textbook)

1. Kainer, R.A., McCracken, T.O. (1998) Horse Anatomy Coloring Atlas 2nd ed .Loveland: Alpine Pub.
2. Reigel, R.J., Hakola, S.E. (1996) Illustrated Atlas of Clinical Equine Anatomy, Vol. 2 . Marysville: Equistar Pub.
3. Squires, E.L. (2003). Understanding the Stallion: your Guide to Horse Health Care and Management. Lexington: The Blood Horse Inc.
4. Schwiezer, C.M. (1998). Understanding the Broodmare: your guide to horse health care and management. Lexington: The Blood Horse Inc.
5. Schwiezer, C.M., Hillman, R.B. (1999). Understanding Breeding Management: your guide to horse health care and management. Lexington: The Blood Horse Inc.
6. Cable, C.S. (1998) Understanding the Foal: your guide to horse health care and management . Lexington: The Blood Horse Inc.
7. Giffin, J.M., Darling, K. (2004) Veterinary Guide to Horse Breeding. New York: Howell Book House.

3.3 Additional Resource(s)

Lab Manual (Lab Manual)

None

3.4 Other Resources

All course material is available on CourseLink.

Consult Library Course Guide for additional resources <https://guides.lib.uoguelph.ca/eqn3060>

3.4 Additional Costs

Student must wear steel-toed boots for labs occurring in the teaching barn.

4 Learning Outcomes

4.1 Course Learning Outcomes

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

1. Specific Learning Outcomes:

1. Identify the anatomical structure of both stallion and mare reproductive tracts
2. Explain the effects and mode of action of reproductive hormones in the stallion and mare
3. Describe the life cycle of spermatozoa and oocytes
4. Interpret behavioral signs associated with reproduction and foaling and recommend possible action
5. Describe how to handle both stallion and mare in breeding situations
6. Identify the key features required to manage a breeding farm compared to a non-breeding stable

5 Teaching and Learning Activities

5.1 Lecture

Topic(s):

DATE	LECTURES
Jan 7/9	Introduction to the course. Feral sexual

	<p>behavior.</p> <p>Male and female structure and function</p>
Jan 14/16	<p>Breeding farm management</p> <p>Gametogenesis, sperm maturation, physiology, morphology</p>
Jan 21/23	<p>Endocrine regulation of testes and male accessory organs</p> <p>Semen evaluation</p>
Jan 28/30	<p>Endocrine regulation of female reproductive tract</p> <p>Estrous cycle</p>
Feb 4/6	<p>Breeding behavior and techniques (live, artificial).</p> <p>Estrous cycle management, controlled breeding (cycle and ovulation rate)</p>
Feb 11/13	<p>AI and the AI industry, government regulation of equine biological imports (semen, embryos), stallion/broodmare quarantine. Cryopreservation (semen, oocytes)</p>
Feb 18/20	<p><i>Reading Week</i></p>
Feb	<p>Fertilization, fetal development, pregnancy</p>

25/27	detection, endocrinology of pregnancy
Mar 4/6	Placentation, early embryonic development ET, IVF, cryopreservation of embryos, ART
Mar 11/13	Gestation, parturition Foaling (normal and malpresentation)
Mar 18/20	Postpartum period, lactation, neonatal care, maternal behavior, weaning. Post foaling problems mare and foal
Mar 25/27	Reproductive problems in the mare – infertility and abortion
Apr 1/3	Reproductive problems in the stallion - infertility. Castration. Review

5.2 Lab

Topic(s):

DATE	LABS
Jan 7	<i>No lab in first week</i>
Jan 14	Breeding soundness exams of the mare and stallion
Jan 21	Dissection of male reproductive tract

Jan 28	Stallion semen evaluation
Feb 4	Dissection of female reproductive tract
Feb 11	Estrous cycle manipulation and introduction to reproductive technologies
Feb 18	<i>Reading Week</i>
Feb 25	<i>Midterm exam</i>
Mar 4	Assembling the AV. Processing and storage of liquid semen.
Mar 11	<i>Field trip – Deerpath Breeding</i>
Mar 18	Dissection of pregnant mare tracts and placentae
Mar 25	Parturition and Dystocia, milk calcium testing
Apr 1	<i>Field trip – TBD</i>

*lab dates subject to change

6 Assessments

6.1 Marking Schemes & Distributions

Grading Policies

The assignment of grades is based on the clearly defined standards published in the Undergraduate Calendar as follows:

- **80 - 100 (A) Excellent.** An outstanding performance in which the student demonstrates a superior grasp of the subject matter, and an ability to go beyond the given material in a critical and constructive manner. The student demonstrates a high degree of creative and/or logical thinking, a superior ability to organize, to analyze, and to integrate ideas, and a thorough familiarity with the appropriate literature and techniques.
- **70 - 79 (B) Good.** A more than adequate performance in which the student demonstrates a thorough grasp of the subject matter, and an ability to organize and examine the material in a critical and constructive manner. The student demonstrates a good understanding of the relevant issues and a familiarity with the appropriate literature and techniques.
- **60 - 69 (C) Acceptable.** An adequate performance in which the student demonstrates a generally adequate grasp of the subject matter and a moderate ability to examine the material in a critical and constructive manner. The student displays an adequate understanding of the relevant issues, and a general familiarity with the appropriate literature and techniques.
- **50 - 59 (D) Minimally Acceptable.** A barely adequate performance in which the student demonstrates a familiarity with the subject matter, but whose attempts to examine the material in a critical and constructive manner are only partially successful. The student displays some understanding of the relevant issues, and some familiarity with the appropriate literature and techniques.
- **0 - 49 (F) Fail.** An inadequate performance

Evaluation criteria used gives a measure quality of performance and not merely activity, including consideration of the student's ability to use correctly and effectively the language appropriate to the assignment. Lab assignments must be submitted in paper form at the end of lab. Due dates are explicitly stated in the assignment information.

6.2 Assessment Details

Course Assignments and Tests (0%)

Date due	Assignment	Weighting	Learning outcomes
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			assessed
	Midterm exam	30%	1-6
	Lab assignments		1-6
Jan 14	1. BSE	4%	5,6
Jan 21	2. Male tract dissection	4%	1
Jan 28	3. Semen evaluation	4%	1,3
Feb 4	4. Mare tract dissection	4%	1,3
Feb 11	5. Estrous cycle	4%	1-6
Mar 4	6. Semen storage	4%	1-3,5,6
Mar 11	7. Field trip 1	4%	6
Mar 18	8. Pregnant tract dissection	4%	1,2,4,5
Mar 25	9. Foaling	4%	1,2,3-6
Apr 1	10. Field trip 2	4%	6

*lab due dates subject to change

All lab assignments must be handed in at the end of each lab period.

Final examination date and time: April 10, 2019 8:30-10:30am

Final exam weighting: 30%

7 Course Statements

7.1 Grading Policies

Missed Assessments & Classes:

Alternate assessments will be offered only to students with documented medical, psychological, or compassionate reasons for missing a scheduled assessment [see Academic Consideration]. It is the student's responsibility to obtain notes/ learning materials from a missed class.

Late assignments without the aforementioned documentation will be accepted with a penalty of 20% per day, up to a maximum of three days late. Assignments submitted later than 3 days will not be accepted and will result in a zero grade.

7.2 Course Policy on Group Work

Assignments are expected to be individual work unless otherwise noted, and are graded as such.

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>
