



AN SCI 434 section 001 Syllabus Reproductive Physiology

COURSE INFORMATION

Reproductive Physiology
AN SCI 434 001 (3 Credits)
2019-2020 Fall [1202]

Description

Principles of reproductive physiology, improvement of fertility, and artificial insemination. Enroll Info: Jr st, An Sci/Dy Sci 101, or Zool 101 & 102; Zool 151 & 152 recommended

Prerequisite(s)

None

Breadths

B - Biological Science

Instruction Mode

Online (some classroom)

Section Level Com B

False

Department: ANIMAL SCIENCES

College: Agriculture and Life Sciences

Canvas Course URL

<https://canvas.wisc.edu/>



2019-2020 Fall [1202]

Term Start Date: Wednesday, 4-Sep-2019 **Term End Date:** Friday, 10-Jan-2020

Location and Schedule: Soils Building 270 TR 8:50 AM-9:40 AM

CRN: 604005216

How the Credit Hours are Met

The credit standard for this course is met by an expectation of a total of 135 hours of student engagement with the courses learning activities (45 hours per credit), which includes 25, 50 min. podcast lectures (21 hours), textbook reading and study of lecture material (3 hours/week, 45 hours), lab (2 hours/week, 30 hours), lab associated work with animals, lab write-ups, lab associated projects (2 hours/week, 30), additional review study for exams (9 hours).

Note that lectures are podcast, no live lecture is provided in this class, and view the canvas site for how to access. However, attendance for exams are required during the lecture period on that specific day. Attendance during lab is required and you can switch lab days during the semester as you work in groups and we have limited material.

INSTRUCTORS AND TEACHING ASSISTANTS

Instructor



JOHN PARRISH

✉ PARRISH@ANSCI.WISC.EDU

Instructor Availability

Dr. Parrish is available most labs and all work with animals. In addition to these class activities, the instructor can be contacted for office appointments via email from 9 – 5 PM, M-F. You may use Canvas to send email.

TA Office Hours

The graduate TA for the course is Jodi Berndtson <jberndtson@wisc.edu> and you should contact her via email for an appointment to meet with her if needed. She is present in all labs as well.

GRADING AND COURSE MATERIALS

Course Learning Outcomes (CLOs)

- 1 Students will identify structures and function of reproductive anatomy in the male and female of all livestock species, humans and pets. Further they will be able to extrapolate to unknown species related to specific species studied in class.
[S10360]
- 2 Students will be able to identify hormones, their production site, physiology impacts and how to manipulate specific hormones to control reproduction either positively or negatively.
[S10361]
- 3 Students will be able to summarize critical components of reproductive technologies involved in breeding, semen collection, gamete biology and embryonic development. Demonstration of ability to monitor and manipulate cyclicity, artificial insemination, and pregnancy detection in both cattle and pigs will be accomplished.
[S10362]
- 4 Students will be able to summarize events in reproduction from the cellular to whole animal level in livestock species, humans, pet species and wildlife.
[S10363]
- 5 Students will demonstrate ability to communicate via oral, written, podcast, and website modalities.
[S10364]
- 6 Global learning outcomes: Students will solve problems related to a foreign country or novel regions of the US, 2) display communication skills and in particular, strategies to communicate in a language other than English, and 3) display appreciation of ethical issues in global agriculture, wildlife management, federal grazing lands as they relate to reproduction manipulation.
[S10365]
- 7 Global learning impacts on students include: 1) illustrate how theory applies to application in the novel environment of a new culture, location, and ethical system, 2) recognize how differences based on cultural and ethnicity impact individuals, and 3) create human capacity for competitiveness in global agriculture.
[S10366]
- 8 Graduate students will be able to evaluate effective learning outcomes of a specific lab and access its impact on undergraduate students.
[S10367]

Grading

Grade Structure

Exams	
1st lecture Exam	100
2nd lecture Exam	100

3rd lecture Exam (given during final exam period)	104
Oral Exam (comprehensive)	80
Lab quizzes given on-line or in lab (12 at 10 points each)	120
Mexico Lab Project	
Progress points	30
Final project website written	80
Final project audio	30
Lab Project Questions	20
Cow Project	50
Lab Exercises	
Weekly lab write-up (12 at 5 points each)	60
Pig case lab (lab 10)	50
Pregnancy problem case study	10
Lab Extra – presentations and write-ups (10 points each)	40
Total Points	874

Changes to these grade items are at the discretion of the instructor.

Final Grade

This will be assigned based on a percentage of the total possible points available. Grades are recorded simply as a score on a project, exam or lab exercise and then totaled at the end and expressed as a percentage of total available points. The final grade assignments will be made according to the following distribution:

A (100-93%), AB (88-92.99%), B (83-87.99%), BC (75-82.99%), C (65-74.99%), D (55-64.99%), F (<55%).

Grades are not curved or modified from the above scale. For example, the bottom A is 93%, that is $(0.93 * 874)$ or 812.82 points, 812 points is 92.91% and thus an AB. It is important to note that there is no rounding used in assigning the final grade. [In general, no bonus points are offered in this class.](#)

Attendance is not part of the grade unless it is a presentation. However, many items from lab are group assignments and you must participate in the group to get credit. Group peer evaluations do occur in this course and are recorded as deductions from the possible points listed above if a group member does not participate equally on a project.

Graduate Students

Graduate students are graded the same as undergraduates but require submission of a project agreed upon with the instructor in advance. In general this will be an evaluation of specific learning outcomes/objectives in specific labs and if they were successful.

Discussion Sessions

None

Laboratory Sessions

General Procedures

Students work in groups of up to 4 students to complete the lab exercise and turn in a written write-up of the lab exercise. The groups change each week. The document is submitted within canvas assignments as a word or google doc, 1 per group. The [Cow and Mexico projects](#) are also done as groups although these groups are semester long. All groups are assigned by the instructor via Canvas.

In case you miss lab - Much of the material in this class can be completed on-line if you are prevented from attending class. You will however miss out on any hands-on lab exercises or discussion that go on in the lab sections. We have full lab sections and

you cannot just attend another lab without prior instructor approval. If you miss your assigned lab for any reason, you will be required to complete a lab writeup on your own and submit a paper copy to your original lab instructor or TA.

Required Textbook, Software, & Other Course Materials

Textbook

Pathways to Pregnancy and Parturition, P.L. Senger, 3rd revised edition. While you may use older versions, you will be held to this version for exams. E-text access may be purchased from publisher for \$100 in 2019 <<http://www.currentconceptions.com>>. Web login worked best in my test.

EXAMS, QUIZZES, PAPERS & OTHER MAJOR GRADED WORK

Exams, Quizzes, Papers & Other Major Graded Work

Summary Exams

The exam in the summary period is simply on the last 1/3 of the lectures. The oral exam which students' sign up to take is comprehensive up until the time of the exam. Slots to take the oral exam are provided each day following thanksgiving recess until the final exam week. Potential questions for the oral exam are posted in advance and each student is randomly assigned to answer 1 of the questions via an audio podcast recording.

Relevant exam details

Lecture exams are based on lecture material and are potentially Soils 270 from 8:50 – 9:40AM, but we are looking at moving them to the Animal Science building to allow you more time (specifics announced in lab). Lecture exam 1 – Oct. 10, 2019. Lecture exam 2 – Nov. 14, 2019, Lecture exam 3 – Dec. 17, 12:25-2:25PM (location to be determined). These exams are in class only but will be electronic in canvas so you will need a suitable laptop (rent one from computer lab if needed). Only Dr. Parrish can grant a make-up for a missed exam. No electronic or paper resources can be used during exams. You are allowed to take more than the 50 minutes to complete the exams. Exam questions include multiple choice, true/false, matching, short answer, explain the image and essay.

Lab quizzes replace lab exams and will occur on-line and will be clearly indicated in Canvas as the semester progresses. On-line quizzes must be completed prior to the tuesday lab. Quizzes will be limited to 5 minutes and worth 10 points each. Quizzes are open only from 8 AM to 11:59AM on tuesday each week of class. All lab quizzes are cumulative, no notes or electronic devices are allowed, and must be taken as an individual. Question structure includes: multiple choice, true/false, short answer, and explain the image.

Homework & Other Assignments

Rules

Homework is to be submitted in Canvas assignments and will have clear deadlines. It is expected that if the work is a group project, each member of the group participated equally in the work or it is indicated differently at the time of submission.

Plagiarism is not allowed in any homework assignment and will result in a 0 if determined to be present.

OTHER COURSE INFORMATION

Other Course Information

SCHEDULE OF COURSE EVENTS – all lectures are on-line, labs are in person except for lab 0, section 301. See course materials which can be accessed via canvas or directly at <http://www.ansci.wisc.edu/jjp1/ansci_repro/index.html> to access specific lectures and labs for 2019.

Tentative Schedule (Subject to change) - Fall 2019

Week	Date	Title	Reading in Text
1	Sept 3 or 4	Lec 0 - Introduction, course structure course access (On-Line only)	
	Sept 3 or 4	Lab 0- Introduction and how lab works (section 301 this is online for you as classes does not yet start but you must do it).	
	Sept 5	Lec 1 - Female reproductive tract anatomy	Chapter 1, 2
2	Sept 10-12	Lec 2 - Comparative female anatomy	Chapter 1, 2
		Lec 3 - Male reproductive tract anatomy	Chapter 3
		Lab 1 - Female anatomy, follicular aspiration	
		Cow project - check for heat this week	
3	Sept 17-19	Lec 4 - Male reproductive tract comparative and microscopic anatomy	Chapter 3
		Lec 5 - Embryogenesis of the pituitary gland, sexual differentiation of the male and female	Chapter 4
		Lab 2 - Male anatomy, epididymal sperm	
4	Sept 24-26	Lec 6 and 7- Endocrinology of Reproduction	Chapter 5
		Lec 6 and 7- Endocrinology of Reproduction	Chapter 5
		Lab 3 - Endocrinology	
5	Oct 1-3	Lec 8 - Puberty	Chapter 6
		Lec 9 - Reproductive cycles in the female	Chapter 7
		Lab 4 - Hormone manipulation, puberty	
6	Oct 8	Lec 10 - Artificial Insemination	Chapter 12, pp 266-269
	Oct 10	Lecture Exam I (8:50 - 9:40 AM, early exam at 8:00AM, rm 128, 150)	
	Oct 8-9	Lab 5 - Applied anatomy and breed your cows via timed AI	
		Cow project - timed AI of your cow	
7	Oct 15-17	Lec 11 - Follicular phase of the estrous cycle, follicular waves, oogenesis, ovulation	Chapter 8
		Lec 12a - Luteal phase of the estrous cycle and the menstrual cycle	Chapter 9
		Lec 12b - Estrous Synchronization (Induction of Ovulation)	Chapter 9
		Lab 6 - Histology, breed sows	
8	Oct 22-24	Lec 13 - Spermatogenesis	Chapter 10
		Lec 14 - Epididymal maturation, ejaculation and semen	Chapter 10, 11
		Lab 7 - Estrus and endocrine disruption	
		Cow Project - Check for return to estrus and AI if needed	
9	Oct 29-Oct 31	Lec 15a,b - Sexual behavior	Chapter 11
		Lec 16 - Gamete transport	Chapter 12
		Lab 8 - Control of female cycles	
10	Nov 5-7	Lec 17 - Fertilization	Chapter 12
		Lec 18 - Gametogenesis at the chromosomal level: mitosis and meiosis	
		Lab 9 - Applied male anatomy, semen collection, semen evaluation, cryopreservation and spermatogenesis	
	Nov 4 - 8	Pig Farrowing view on-line as this becomes available	
11	Nov 12	Lec 19 - Embryo Development	Chapter 13
	Nov 14	Lecture Exam II (8:50 - 9:40 AM, early exam 8:00 AM, rm 128 150)	
	Nov 12-13	Lab10 - Impact of the male on meat production: A case scenario in swine	
12	Nov 19-21	Lec 20 - Placentation and maternal recognition of pregnancy	Chapter 13, 14
		Lec 21 - Pregnancy and fetal development	Chapter 14
		Lab10 - Impact of the male on meat production: A case scenario in swine	
13	Nov 26-27	Lec 22 - Parturition	Chapter 14, 15
		Lab 11 - Placentation, fetal membranes and fetal growth	

Thanksgiving Recess Nov. 28 - Dec 1

14	Dec 3-5	Lec 23 - Biotechnology	
		Lec 24 - Reproduction of humans	Chapter 16
		Lab 12 - Pregnancy, Male Fertility and Parturition	
		Cow Project - Check cow for pregnancy status via ultrasound	
15	Dec 10	Cow Project - Pregnancy status and Reflection due	
	Dec 11	Lec 25 - Reproduction of dogs and cats	
	Dec 10-11	Mexico Project Presentations	

ACADEMIC POLICIES



ACADEMIC INTEGRITY

By enrolling in this course, each student assumes the responsibilities of an active participant in UW-Madison's community of scholars in which everyone's academic work and behavior are held to the highest academic integrity standards. Academic misconduct compromises the integrity of the university. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. This includes but is not limited to failure on the assignment/course, disciplinary probation, or suspension. Substantial or repeated cases of misconduct will be forwarded to the Office of Student Conduct & Community Standards for additional review. For more information, refer to <https://conduct.students.wisc.edu/academic-integrity/>



ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

McBurney Disability Resource Center syllabus statement: "The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA." <http://mcburney.wisc.edu/facstaffother/faculty/syllabus.php>



DIVERSITY & INCLUSION

Institutional statement on diversity: "Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals.

The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world." <https://diversity.wisc.edu/>