

Endocrinology-Reproductive Physiology Program

SPRING SEMESTER, 2023

**OBS&GYN 711: Advanced Reproductive Endocrine Physiology
(Cross-listed as: Animal Sciences 875; Dairy Science 875)**

Pregnancy, Parturition and Lactation is a graduate or senior level course. This modular course in Endocrinology-Reproductive Physiology therefore should be considered an advanced course in Reproductive Physiology/Endocrinology/Reproductive Immunology. **The objectives of the course are to present an in-depth integrated curriculum on:**

- 1) Physiologic and Immunologic Principles of Pregnancy including species comparisons;
- 2) Recent Advances in the field;
- 3) Current Research Needs; and where applicable
- 4) Applications of Physiological Principles to Solving Reproductive Problems

Credits: 2 Credits

Location: Animal Science Building, 1675 Observatory Drive, Room 274

Time: 12:00-2:00pm, Tuesdays (Spring Semester, Odd Years)

Instructional Mode: This course is conducted face-to-face and does not involve any blended learning.

Course Designations and Attributes: Intended for second- or third-year graduate students. Continuation of OBS&GYN 710. It is expected that students in this course have a basic understanding in biochemistry, molecular biology, and physiology, as well as the understanding of basic concepts in general endocrinology and reproduction.

Suggested Prerequisites: Biochemistry 501 (General Biochemistry)

Animal Sciences 434 (Reproduction) or equivalent with the consent of instructor or senior status with consent of instructor.

Questions: Please contact course director Dr. Aleksandar Stanic-Kostic (stanickostic@wisc.edu)

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Date of Lecture	Topic	Lecturer
MODULE 1		
January 24, 2023	Introduction to Class, Placentation and Endocrinology and Comparative Placentation	Dr. Derek Boeldt
January 31, 2023	Angiogenesis, Growth factors and Pregnancy	Dr. Jing Zheng
February 7, 2023	Fundamentals of Immunology	Dr. Aleks Stanic
February 14, 2023	Maternal Recognition of Pregnancy	Dr. Milo Wiltbank
February 21, 2023	Student Presentations on Maternal Recognition of Pregnancy	Dr. Milo Wiltbank
February 28, 2023	Student Presentations on Maternal Recognition of Pregnancy	Dr. Milo Wiltbank
MODULE 2		
March 07, 2023	Parturition- case presentations	Dr. Kara Hoppe
March 14, 2023	Spring recess	
March 21, 2023	Autocrine Control of Milk Synthesis	Dr. Laura Hernandez
March 28, 2023	Lactogenesis Milk Synthesis-I	Dr. Laura Hernandez
April 4, 2023	Lactogenesis Milk Synthesis-II	Dr. Laura Hernandez

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MODULE 3

April 11, 2023	Immunology of Pregnancy-I Lecture	Dr. Aleks Stanic
April 18, 2023	Immunology of Pregnancy-II Lecture + student presentations	Dr. Aleks Stanic
April 25, 2023	Immunology of Pregnancy-III Lecture + student presentations	Dr. Aleks Stanic
May 2, 2023	Immunology of Pregnancy-IV Student presentations with Guest discussant	Dr. Aleks Stanic Guest:TBD
	Classes End	
May 2-7, 2023	Exam period	
	Deadline for Grade Submission	

INSTRUCTORS

Course Director:

Aleksandar Stanic-Kostic, MD, PhD, Assistant Professor of Obstetrics and Gynecology
stanickostic@wisc.edu, (virtual office hours available upon request)

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This course is team-taught by lecturers with expertise in each given subject area. Consistent with the reproductive theme of this course, instructors are OBGYN department faculty or Endocrinology and Reproductive Physiology (ERP) graduate training program faculty. Specific instructors for Spring 2023 are listed in the course meeting table above.

Instructor/s Availability: Depending on the topic/theme for the semester's offering, Course Director will either teach the course themselves or team-teach with other ERP faculty. In either scenario, Course Director will regularly attend every class meeting to ensure course objectives are met and student performance is evaluated consistently. Course director and instructors will have direct student contact throughout this course.

COURSE DESCRIPTION

Advanced learning opportunities in Endocrinology and Reproductive Physiology (ERP) areas, particularly reproduction and reproductive immunology, with an emphasis on human health whenever possible. Explore scientific questions core to the ERP graduate training program at research level with further in-depth instruction and a focus on cutting-edge knowledge and developments. Topics include pregnancy (ovulation through parturition); lactation biology; and reproductive immunology.

COURSE LEARNING OUTCOMES

1. Develop deep understanding of a reproduction topic.
2. Evaluate primary research articles and demonstrate critical reasoning with regard to methods and conclusions.
3. Demonstrate critical thinking with regard to course material through in-class interactive discussion with peers and faculty.
4. Integrate instruction material and personally-researched scientific texts to formulate individual thoughts on topics not directly covered in lecture.

This is consistent with Endocrinology and Reproductive Physiology (ERP) Program outcomes in that, by graduation, ERP students are expected to thoroughly understand endocrine systems and reproductive physiology from the whole animal level down to the subcellular signaling proteins and pathways responsible for physiological outcomes.

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This course focuses primarily on advanced topics related to reproduction and pregnancy.

GRADING

Grades are assigned using the following criteria:

Exams	20%
Student Presentations	60%
Other Learning Activities	10%
Participation	10%
Total	100%

Take-Home Exams. Examination will consist of one take-home exam for module 1 (non-cumulative). Students may utilize any allowable resources at their disposal in order to construct their answers. Answers will be graded with this in mind and sufficiently researched and in-depth answers with originally constructed ideas will be expected as a result. Detailed instructions and expectations will be provided by the instructor in advance. Exam will consist of 1-2 essay questions per lecture and students will have 1 week to return their answers in a private BOX folder. Answers for each question will be graded by the instructor of that lecture and posted in a private BOX folder.

Student Presentations. Majority of grading for this course will depend on student presentations in Modules 1, 2 and 3. Students will undertake a presentation exercise for each module. Presentations will be based on relevant readings and, as determined by the instructors, may be assigned by the instructor or selected by the students. Presentation requirements (e.g., format; required components; duration; and method of delivery) will be clearly delineated by the instructors in advance.

Other Learning Activities. Additional learning activities will be selected by the instructors, to ensure students meet the learning goals for each course offering. Examples of potential learning activities include engaging in and facilitating small- or whole-group discussions, engaging in journal clubs, and completing short in-class or homework assignments.

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Participation. Students are required to actively participate throughout the semester. Students are expected to ask clarifying questions, probe scientific implications and contributions, help make connections between topics, and provide thoughtful analyses of reading assignments. Classes devoted to case studies will be highly dependent on student participation and students should be ready to carry the conversation for longer periods of time. Outstanding participants will always achieve these benchmarks; a good contributor will usually achieve these benchmarks; an adequate contributor will sometimes achieve these benchmarks; an unsatisfactory participant rarely achieves these benchmarks.

This course is graded on the A-F grading scale. Assignment and final grades are not curved.

A: 90% - 100%

A/B: 85% - 89%

B: 75% - 84%

B/C: 70% - 74%

C: 60% - 69%

D: 50% - 59%

F: 0% - 49%

REQUIRED READING & RECOMMENDED TEXTS

This course is taught by several contributors on areas of reproductive endocrinology physiology. As the course theme may change from semester to semester, course directors are responsible for providing relevant readings in advance of the course. These readings will be made available to students free of charge. Students will identify further readings relevant to their course projects. Similarly, there is no recommended textbook. As this is an advanced topics course, knowledge gained from other, scientifically relevant classes should provide a broad basis for understanding of the topics.