University of Florida Department of Physiology and Aging

GMS 6419 Medical Endocrinology and Reproduction - Course Syllabus

Course Number: GMS 6419

Credit Hours: 3

Format: Online, asynchronous

Course Director: Shi Jin, Ph.D., Lecturer, Department of Physiology and Aging

Course Administrator: Taylor Greene, Academic Specialist III, Department of Physiology and Aging

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Course Description

Medical Endocrinology and Reproduction (GMS6419) teaches the functions of the endocrine and reproductive systems of human body at a level required for clinical medicine and basic research in medical physiology. The course covers normal physiology, as well as selected diseases. Concepts are taught using a combination of lectures, online research assignments, and online problem sets. The research assignments are designed to help the student understand the integration of cardiovascular physiology with genetics, genomics, molecular biology, and cellular physiology as a basis for a better understanding of human disease. The ultimate goal is for students to develop an understanding of the integrated functions of the normal body and "problem solving" and "critical thinking" skills in evaluating clinical situations. Each recorded lecture lasts between 20 and 30 min.

Learning Outcomes

After successfully completing this course, students will be able to:

1. Understand the function of hormones, including the different endocrine axes and the processes that
they control.
2. Understand the hormonal control of reproduction.
3. Understand how hormonal systems act in an integrated manner to regulate overall body functions.
4. Understand how failure of these normal physiologic functions and integrations are associated with
some diseases.
5. Demonstrate the ability to apply physiological principles of clinical and basic science relevancy by
multiple choice examinations, research assignments, and quiz exercises.

Course Goals

Physiology is the science of how the body functions, and is the basis for understanding modern clinical medicine and the biomedical sciences. This course will provide: 1) a foundation understanding of the basic functions of the endocrine system; 2) integration of individual facts in order to understand how organ systems work independently and interdependently in the body. One example of this integration is in the understanding of normal reproduction. Other examples covered in this course include understanding developmental anomalies in the endocrine system.

Target Audience

This course is designed to meet the needs of individuals wanting to pursue a career in medicine, biomedical research, or in teaching topics related to physiology and medicine. For example, this course is designed to provide critical knowledge for individuals who wish to teach cardiovascular physiology at the secondary and post-secondary levels. However, this course will also provide a foundation for students who are wishing to attain or enhance knowledge of medical endocrinology and reproduction.

Prerequisites

BA/BS with at least five science courses in biology, chemistry, and/or physics; minimum GPA 2.0. Graduate student faculty advisors must email the course director a short note affirming their student‘s qualification to take the course. Co-enrollment or prior passing grade in GMS 6440 required for enrollment in this class.

Course Contacts
Instructor: Shi Jin, Ph.D. (Email via Canvas, response in 1-2 business days)

Course Administrator: Taylor Greene (Email via Canvas, response 1-2 business days)

Learning Resources

Recorded lectures and notes (PDF)

Clinical case studies

Recommended Texts(not required, but highly recommended):

1. "Ganong's Review of Medical Physiology, 26th Edition" 2019. Authors: Kim E. Barrett, Susan M. Barman, Heddwen L. Brooks, & Jason X.J. Yuan. ISBN: 9781260122404. Free online: https://accessmedicine.mhmedical.com/book.aspx?bookid=2525.
2. "Berne & Levy Physiology, 7th Edition" 2018. Authors: Bruce M. Koeppen & Bruce A. Stanton. ISBN: 9780323393942.

VPN: Important instructions for getting to the reading materials linked in the course:

Many of the links to the course readings are journal articles, books and other items held by the UF Libraries.To get to those materials you must first log into a secure connection called a virtual private network or VPN. Once you are logged into the UF VPN, go back into the course and click on the reading links.

How to install the UF VPN:

1. Review the instructions on how to install the VPN client for your computer.

2. Download the latest Cisco Anyconnect clientLinks to an external site. --- select from the list the one that's appropriate for your computer's operating system. You will be prompted to enter your Gatorlink login credentials (Once installed it will automatically update, so no need to do additional downloads).

3. Open the Anyconnect client and log in with your Gatorlink credentials whenever you need to get to readings. (It is preferred that you use the Anyconnect client you downloaded, but if you are ever in a pinch and can't get to the Anyconnect client, you can log into VPN from the web, at https://vpn.ufl.eduLinks to an external site.)

4. Log into the course in Canvas at http://elearning.ufl.edu/Links to an external site. and click on the links to the reading materials.

Borrowing from the UF Library: Distance learners may borrow materials from the UF Libraries. They may also borrow from associated non-UF libraries using Interlibrary Loan (ILL). See the main library site for distance learners at http://guides.uflib.ufl.edu/distancelearnersLinks to an external site.. See more on ILL -- including an FAQ specially for distance learners -- at http://cms.uflib.ufl.edu/accesssupport/InterlibraryLoanLinks to an external site..

Course Schedule

Unless otherwise noted, all assignments are due on the dates specified in the course Assignment page.

Lecture 1: Introduction to Endocrinology
Lecture 2: Hypothalamus and Pituitary I
Lecture 3: Hypothalamus and Pituitary II
Problem Set 1: Hypothalamus and Pituitary
Lecture 4: Adrenal Medulla I
Lecture 5: Adrenal Medulla II
Problem Set 2: Adrenal Medulla
Lecture 6: Calcium/Phosphate Regulation I
Lecture 7: Calcium/Phosphate Regulation II
Lecture 8: Calcium/Phosphate Regulation III
Lecture 9: Calcium/Phosphate Regulation IV
Problem Set 3: Calcium/Phosphate Regulation
Lecture 10: Fluid Balance and Cardiovascular Control
Lecture 11: Growth Hormone I
Lecture 12: Growth Hormone II
Functional Genomics Research Assignment 1: Pituitary Dwarfism
Lecture 13: Glucose Regulation I
Lecture 14: Glucose Regulation II
Lecture 15: Glucose Regulation III
Problem Set 4: Growth Hormone and Glucose Regulation
Functional Genomics Research Assignment 2: Type I Diabetes
Lecture 16: Sexual Differentiation I
Lecture 17: Sexual Differentiation II
Lecture 18: Steroidogenesis
Problem Set 5: Sexual Differentiation
Lecture 19: Male I
Lecture 20: Male II
Problem Set 6: Male Reproductive Physiology
Lecture 21: Female I
Lecture 22: Female II
Lecture 23: Female III
Lecture 24: Female IV
Problem Set 7: Female Reproductive Physiology
Functional Genomics Research Assignment 3: Congenital Adrenal Hyperplasia
Lecture 25: Pregnancy I
Lecture 26: Pregnancy II
Lecture 27: Pregnancy III
Lecture 28: Pregnancy IV
Lecture 29: Carbohydrate Metabolism in Pregnancy
Lecture 30: Clinical Correlation: Assisted Reproductive Technologies I
Lecture 31: Clinical Correlation: Assisted Reproductive Technologies II
Lecture 32: Integration-Pregnancy I
Lecture 33: Integration-Pregnancy II
Lecture 34: Integration- Pregnancy: A view from the fetus
Problem Set 8: Pregnancy

Lecture 35: Adrenal Cortex I
Lecture 36: Adrenal Cortex II
Problem Set 9: Adrenal Cortex
Lecture 37: Thyroid I
Lecture 38: Thyroid II
Lecture 39: Clinical Correlation: Thyroid I
Lecture 40: Clinical Correlation: Thyroid II
Problem Set 10: Thyroid

Final Examination must be scheduled with ProctorU.

Technical Requirements

To access the course and view the online videos, a high-speed internet connection is required, as well as a web browser with the latest Microsoft Silverlight plugin installed.

Technical Support: If you have technical difficulties *related to this course*, such as not being able to open a link or video recording, please email course administrator, Taylor Greene in Canvas. If you are having *general* technical issues such as e-Learning account or VPN issues, please contact the UF Help Desk at helpdesk@ufl.edu or 352-392-4357.

Grade Breakdown:

- Final Exam: 20%
- Functional Genomics Research Assignments: 30%
- Problem Sets: 50%

Grading Scale:

A 93-100% | A- 90-92%

B+ 87-89% | B 83-86% | B- 80-82%

C+ 77-79% | C 73-76% | C- 70-72%

D+ 67-69% | D 63-66% | E <63%

Final Exam & ProctorU

The final exam consists of multiple-choice questions covering lecture material. It will be monitored by ProctorU, a UF-approved proctoring service allowing remote exams while ensuring academic integrity. The exam must be scheduled and started no later than 8:00 PM EST on the due date.

Important Notes:

- You will need a government issued photo ID, high-speed Internet connection, a webcam (internal or external), **Desktop or laptop computer running Windows 10 or later, Mac OS 11.0 or later. Tablets, including iPads, Chromebooks, and smartphones are not supported.**
- **Final exams must be scheduled at least 72 hours prior to the due date**. As a result, issues that arise on the day of the exam—such as delayed ProctorU account setup, limited time slot availability, or technical problems with Internet or computer access—will not be considered valid excuses for missing the exam deadline.

Exam Preparation Steps:

1. Create your ProctorU account Links to an external site.(https://go.proctoru.com/session/new)
2. Review Equipment Requirements & Test your computerLinks to an external site. (https://support.proctoru.com/hc/en-us/articles/24692181239309-Equipment-RequirementsLinks to an external site.)
3. Schedule your exam Links to an external site.(https://support.proctoru.com/hc/en-us/articles/25852622025741-How-to-Schedule-Reschedule-or-Cancel-an-Exam)
4. Read the ProctorU Test Taker Library for more information and resources about what to expect for your text taking experience.Links to an external site.(https://support.proctoru.com/hc/en-us/categories/115001818507-Test-Taker-Library)

Late Work Policy

Assignments

For assignments that require manual grading (e.g., research papers, projects), the following will apply:

- Unless you have an approved excused absence, a 10% deduction will be applied for each week the assignment is late.

Final Exam

- Make-up exams will only be permitted with approval of an excused absence. **Failure to take the final exam without such approval will result in a score of zero.**

Accommodations for Students with Disabilities
Students requesting accommodations must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student, who must then provide this documentation to the course director when requesting an accommodation. Contact the Disability Resources Center, https://dso.ufl.edu/ for information about available resources for students with disabilities.

Academic Honesty

Online classes are subject to the same requirements of academic honesty as all on-campus classes. Please review and be familiar with the Student Conduct Code and Student Honor Code, which can be found at https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code. UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Student Honor Code specifies a number of behaviors that violate the code, and the possible sanctions. Furthermore, you are obliged to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult the instructor or course coordinator.

Plagiarism

Plagiarism is presenting another person's work as your own. Cheating and plagiarizing are against the University of Florida Student Conduct Code. Submissions in this course are checked via Turnitin (http://www.turnitin.com), a service that compares documents with each other as well as with pages on the Internet and with other assignments previously submitted by other students. If portions of your document were directly copied and pasted from another student's assignment (past or present) or from the Internet, that constitutes plagiarism. Any form of plagiarism will be investigated as set out by the University of Florida Student Conduct Code. From your citations and references, the reader of your paper should be able to tell the source of all your outside information. It may be acceptable to place a few comments in quotes with a citation, but it is never acceptable to copy and paste a long string of text from a source, even if it is cited and even if you change a few words. Anything from another source that is not in quotations must be paraphrased. Also, please note that UF policies require that you create original work for each course. Thus, students are not permitted to submit papers they prepared previously outside of this class, such as for high school or other UF courses.

Artificial Intelligence (AI) Use Policy:

For this graduate level course, GMS6419 Medical Endocrine and Reproductive Physiology, it is imperative that all work submitted is your own. The use of AI tools, including but not limited to, generative language models, code generation tools, and automated essay writer, is strictly prohibited for all assignments. Any work found to have been produced with the aid of such AI tools will result in a zero for that assignment. This policy is in place to ensure the integrity of your learning experience and to respect the academic standards of this course. If you have any questions about this policy or need assistance with your work, please do not hesitate to reach out to your instructor.

GatorEvals UF Faculty Evaluation: Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/

Professionalism Expectations: Maintain honesty, respect, responsibility, and integrity in all course interactions.

Course Disclaimer

This course (including all materials, ideas, research or clinical observations written or electronically conveyed) is for educational purposes only. The course does not substitute for and does not provide clinical or treatment recommendations or endorsements for the treatment of any individual person's condition.

Syllabus changes: You will be notified if there are major changes to the syllabus.
