

SYLLABUS
Clinically Oriented Human Embryology (ANAT 6130)

COURSE DESCRIPTION:

ANAT 6130 is a new graduate course for certificate level designed to describe the mechanisms and clinical relevance of human embryology. The first half of the course will focus on developmental mechanisms and early development. The second half of the course will focus on development of organ systems in the human body. The syllabus is supplemented with additional educational material and assignment, which is appropriate for students enrolled in the graduate certificate in Anatomical and Translational Sciences. Online teaching and animations will provide thorough understanding on clinical correlations of human embryological development. The students will have six online clinical correlates as well as applied exercises using blackboard and discussion board on obstetrically relevant topics leading to a final written project on a clinical correlate.

LEARNING OBJECTIVES:

As a result of completing this course, students will be able to:

1. Describe early human development
2. Illustrate developmental control mechanisms
3. Describe the development of selected organ systems in the human body
4. Illustrate clinical correlates

CREDIT HOURS: 3

PREREQUISITES: An introductory course in biology or its equivalent. Enrollment in the Graduate Certificate in Anatomical and Translational Sciences or permission of the Director of the Graduate Certificate.

LECTURE CONTACT TIME/HOURS: two 1-hour 15-minute lectures per week.

METHOD OF ASSESSMENT: There will be two examinations during this course. Each will consist of 50 multiple-choice questions. Each question will be worth one point. Your final grade will be determined by the sum of the results of the two equally weighted (40%) examinations and 20% from the written assignment on a clinically-relevant project focused on one of the thematic lectures on human embryology.

FACULTY

1) Rosalyn A. Jurjus, M.D., Ph.D., Course Director
Assistant Professor of Anatomy and Regenerative Biology
461B Ross Hall GWU SMHS 2300 I St NW
e-mail: rajurjus@gwu.edu

2) Kurt E. Johnson, Ph.D., Assistant Course Director
Professor of Anatomy and Regenerative Biology

214 Ross Hall GWU SMHS 2300 I St NW
e-mail: kurtj@email.gwu.edu

OFFICE HOURS

Dr. Johnson: 11:00 -12:30 Tuesday and Thursday, or by appointment

Dr. Jurjus: 2:00-3:00pm Tuesday and Thursday, or by appointment

E-mail Communication: Your most efficient way to have questions answered or to communicate with the faculty is via e-mail. If our office hours are inconvenient, or if you have a quick question from lecture, please communicate via e-mail.

REQUIRED TEXTBOOK:

Gary C., Schoenwolf, Steven B., Bleyl, Philip R., Brauer, Philippa H., Francis-West (2008) *Larsen's Human Embryology, ed 4th*. Elsevier. This book presents in-depth coverage of both the clinical and molecular biological aspects of human development. It examines the relationship, between basic science and embryology and describes potential clinical disorders arising out of embryologic problems, as covered in the course. It has student consult online access to enhance student's knowledge.

Thomas W. Sadler *Langman's Medical Embryology* 13th ed, Lippincott, Williams & Wilkins, Baltimore. This textbook is concise, covers everything in the course, and has access to a useful Internet website with animations and practice questions for review.

READING LIST: Appropriate Reference Articles (TBD)

CLASS POLICIES

Attendance policy: mandatory

Late work: accepted with permission, penalty may be incurred if unduly late as determined by instructor
Religious Holidays: will be accommodated if requested

[NOTE: for university policies on teaching, see
<http://www.gwu.edu/~academic/Teaching/main.htm>]

ACADEMIC INTEGRITY

I personally support the GW Code of Academic Integrity. It states: "Academic dishonesty is defined as cheating of any kind, including misrepresenting one's own work, taking credit for the work of others without crediting them and without appropriate authorization, and the fabrication of information." For the remainder of the code, see: <http://www.gwu.edu/~ntegrity/code.html>

SUPPORT FOR STUDENTS OUTSIDE THE CLASSROOM

DISABILITY SUPPORT SERVICES (DSS)

Any student who may need an accommodation based on the potential impact of a disability should contact the Disability Support Services office at 202-994-8250 in the Marvin Center,

Suite 242, to establish eligibility and to coordinate reasonable accommodations. For additional information please refer to: <http://gwired.gwu.edu/dss/>

UNIVERSITY COUNSELING CENTER (UCC) 202-994-5300

The University Counseling Center (UCC) offers 24/7 assistance and referral to address students' personal, social, career, and study skills problems. Services for students include:

- crisis and emergency mental health consultations
- confidential assessment, counseling services (individual and small group), and referrals
<http://gwired.gwu.edu/counsel/CounselingServices/AcademicSupportServices>

SECURITY

In the case of an emergency, if at all possible, the class should shelter in place. If the building that the class is in is affected, follow the evacuation procedures for the building. After evacuation, seek shelter at a predetermined rendezvous location.

LECTURE TOPICS:

Part I Early Development and Developmental Mechanisms

1. Tuesday, September 1 Organizational Meeting and Introduction, Dr. Johnson
2. Thursday, September 3 Gametogenesis I, Dr. Johnson
3. Tuesday, September 8 Gametogenesis II, Dr. Johnson
4. Thursday, September 10 Fertilization and Cleavage, Dr. Johnson
5. Tuesday, September 15, *Assisted Reproductive Technologies**, Dr. Johnson
6. Thursday, September 17, Early Development and Implantation, Dr. Johnson
7. Tuesday, September 22, Gastrulation and Primary Germ Layers, Dr. Johnson
8. Thursday, September 24, Neurulation and Neural Induction, Dr. Johnson
9. Tuesday, September 29, Establishment of Basic Body Plan, Dr. Johnson
10. Thursday, October 1, *Placenta**, Dr. Johnson
11. Tuesday, October 6, Graduate Student Presentations, Dr. Johnson, Dr. Jurjus
12. Thursday, October 8, Graduate Student Presentations, Dr. Johnson, Dr. Jurjus
13. Tuesday, October 13, Cellular Mechanisms of Organ Formation, Dr. Jurjus
14. Thursday, October 15, Genetic Mechanisms of Organ Formation, Dr. Jurjus
15. Tuesday, October 20, Review for MidTerm
16. Thursday, October 22, MidTerm

Part II Development of Organs Systems

17. Tuesday, October 27, Development of Endocrine System, Dr. Johnson
18. Thursday, October 29, Development of Renal System, Dr. Johnson
19. Tuesday, November 3, *Development of Reproductive System**, Dr. Johnson
20. Thursday, November 5, Mechanisms of Sex Determination, Dr. Johnson
21. Tuesday, November 10, Development of Blood and Immune System, Dr. Ramezani
22. Thursday, November 12, Development of Eye, Dr. Stepp

23. Tuesday, November 17, Development of Pharyngeal Apparatus, Dr. Jurjus
 24. Thursday, November 19, *Development of Face**, Dr. Jurjus
 25. Tuesday, November 24, Development of GI and Respiratory System, Dr. Jurjus
 26. Thursday, November 26, Thanksgiving
 27. Tuesday, December 1, Graduate Student Presentations, Dr. Jurjus and Johnson
 28. Thursday, December 3, Graduate Student Presentations, Dr. Jurjus and Johnson
 31. Tuesday, December 8, Voluntary Class, Final Exam Review
- Reading/Study Period
Final Examination **TBD**

*topics with online clinical correlation modules and applications