

Human Embryology (ANG6930)

Syllabus – Fall 2018

Meeting Times: Tuesday 10:40am-12:35pm (4-5 period)
Thursday 11:45am-12:35pm (5 period)
TUR 1208H

Instructor: Dr. Valerie Burke DeLeon
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University of Florida
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Office hours: Turlington B374; TBD and by appointment

Course Description: This course combines self-directed study of human anatomy with lectures on human embryology and review of literature on comparative embryology. Prior knowledge of human or mammalian anatomy is useful but not required. Our study of embryology will depend on anatomical vocabulary and a general understanding of spatial relationships. The primary goal of this course is to develop an intuitive understanding of embryological processes using humans as a model system. We will focus on embryology (tissue level processes), with less emphasis on developmental biology (molecular processes). We will adopt a systemic approach to the body, and for each system will discuss a paper addressing that system in a comparative context. Based on student interest, we may also discuss clinical implications of embryological malformations. Students will take turns each week presenting assigned journal articles for discussion. Grades are based on weekly quizzes, two written exams, and submission and presentation of a literature review paper.

Course Objectives:

- 1) You will become fluent in the terminology and vocabulary used to describe human embryology.
- 2) You will be able to trace the origin and destination of specific cells and tissues from the zygote to definitive organ structures.
- 3) You will be able to describe the spatial relationships of important embryological structures and recognize them in 2D and 3D images.
- 4) You will apply your knowledge of embryology to describe sources of phenotypic variation (in both phylogenetic and clinical contexts).

Course Materials:

Required text: Schoenwolf GC, et al (2014) **Larsen's Human Embryology**, 5th ed. Elsevier/Churchill Livingstone.

This is the textbook that will provide the basis for instruction. If you can get access to an earlier edition of the text (e.g., 4th edition), that would be sufficient. Reading assignments *in preparation for* each Tuesday lecture are noted in the Course Schedule below. Boxes in the text provide interesting information and context, but are not required reading unless specified. Additional journal articles will be

assigned for reading each week and provided through library links or available for download through Canvas (our course management system).

Self-directed study of Anatomy: Prior to each Tuesday lecture, students should review the anatomical study material presented in Canvas for that week. Competency is demonstrated by achieving a perfect score on the weekly Online Quizzes. Quizzes are available in Canvas. Quizzes should be completed without referencing any study materials. Quizzes can be repeated multiple times, and feedback will be provided, until a score of 100% is achieved.

Journal articles for discussion: Each Thursday, one student will present a journal article for discussion. Students may present the suggested article, or may propose a different article for discussion (with prior approval). The sign-up sheet and format for presenting articles will be discussed on the first day of class.

Literature review project: All students will choose an embryology-related topic of their choice (subject to approval by Dr. DeLeon) and conduct a literature review on the topic. Each student will prepare and present a 15-20minute Powerpoint presentation to share the highlights of their literature review with the class. Presentations will be shared with the class on the last full week of class. Parameters and expectations for the presentations will be discussed in class. These are intended to be fun and informative, so please talk to Dr. DeLeon in advance if you have any concerns about this requirement.

Grading: Grades are based on **midterm (20%)** and **final (30%)** exams. Thirty-six percent (**36%**) is based on completion of the online quizzes (12 x 3%), and fourteen percent (**14%**) of your grade is based on presentation of the literature review project. **Exams** will be a combination of objective (true/false and multiple choice) and subjective (short answer and essay) questions. Content includes information discussed in class (derived from the text and from assigned articles). Daily objectives will be distributed to help direct your studying. The final exam is cumulative. Make-up exams *may* be allowed under extraordinary circumstances.

Communication: Email is the best way to reach Dr. DeLeon (vdeleon@ufl.edu). Please use “Human Embryology” in the subject line.

Attendance: Our learning environment depends heavily on discussion, and each student has a responsibility to attend and contribute to the class. Attendance is required. If you have to miss a class, please make arrangements in advance. Repeated, unexcused absences will each result in a grade deduction of five (5) percentage points.

Course Evaluations: You are encouraged to share your opinions at any time with Dr. DeLeon in person or by email. In addition, students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

University Policy on Accommodating Students with Disabilities: Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The

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Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

University Policy on Academic Misconduct: Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at <http://www.dso.ufl.edu/students.php>.

Course Schedule:

Date		Topic	Reading	Quiz
August	23	Introduction to the course	skim Intro and Ch1 (for next week)	
	28	Introduction to Embryology	Ch 2-3; skim Ch 4	Quiz 1
	30	Issue: Homology	TBD	
September	4	Extraembryonic tissues	review Ch 2	Quiz 2
	6	Issue: Primate placentation	TBD	
	11	Heart and vascular system	Ch 12; skim Ch 13	Quiz 3
	13	Issue: Heart septation defects	TBD	
	18	GI/Respiratory systems	Ch 11, 14	Quiz 4
	20	Issue: Situs inversus	TBD	
	25	Urogenital system	Ch 15-16	Quiz 5
	27	Issue: Indeterminate sex	TBD	
October	2	Musculoskeletal system	Ch 8	Quiz 6
	4	Issue: Muscle homology	TBD	
	9	Review		
	11	Midterm		
	16	Limbs	Ch 20	Quiz 7
	18	Issue: Limb proportions	TBD	
	23	Nervous system	Ch 9; skim Ch 10	Quiz 8
	25	Issue: Encephalization	TBD	
	30	Bone Growth		Quiz 9
November	1	Issue: Craniosynostosis		
	6	Skull and Teeth		Quiz 10
	8	Issue: Comparative skulls		
	13	Pharyngeal arches	Ch 17	Quiz 11
	15	Issue: Cleft palate	TBD	
	20	Special senses	Ch 18-19	Quiz 12
	22	Thanksgiving	NO CLASS	
	27	present papers		
	29	present papers		
December	4	Review		
	13	FINAL EXAM	7:30am-9:30am	