

Human Embryology-BIO 409/5409
Syllabus
Spring 2014

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Credit: 3 hours

prerequisites: BIO 111, BIO 305 or BIO 306 and junior standing or graduate standing

PLEASE CHECK YOUR MC EMAIL FREQUENTLY.

Catalog Course Description: A study of human embryology with emphasis on the fundamental developmental processes. Topics include gametogenesis, fertilization, and development of the embryo from zygote through the differentiation of the neural tube. Additionally, topics involving development of selected human organ systems will be covered. Clinical analysis of birth defects will also be discussed.

Rationale for Course: The Mississippi College Mission Statement stipulates that *Mississippi College stimulates the intellectual development of its students through the . . . sciences*. A requisite to the preceding is an understanding of the embryological development of humans. This course follows human development from conception until birth. Discussion of birth defects will also accompany each stage of development. This course will greatly benefit students pursuing healthcare professions as well as those wishing to enroll in a biology graduate program. Human Embryology prepares students to “*utilize their skill, talents, and abilities as they pursue meaningful careers, life-long learning, and service to God and others*” as physicians, dentists, physical therapists, environmentalists, educators, and other biologically related professions.

Course Objectives and List of Topics

1. Students will comprehend the origin of the tissues, organs, and organ systems in the human embryo and fetus
2. Students will be able to describe the basic features of the first eight weeks of development of the embryo.
3. Students will be able to describe the basic features of fetal development.
4. Students will describe the development of the fetal membranes.
5. Students will be able to describe the development of the following systems:
 - a. Body cavities
 - b. Pharyngeal apparatus
 - c. Respiratory system
 - d. Digestive system
 - e. Urogenital system
 - f. Cardiovascular system
 - g. Skeletal system
 - h. Muscular system
 - i. Nervous system
6. Students will be able to describe environmental and genetic factors which may impede or impair human development
7. Students will describe clinical correlations that are associated with each topic.
8. Graduate students will create and present a PowerPoint presentation on a drug teratogen.

Methods of Instruction

Lecture coupled with written notes and powerpoints will be the main delivery of material. Videos and animations will also be utilized. Each night that an exam is not given, a quiz will be given. Each quiz is cumulative since the last exam. Students are expected to learn the clinical material is assigned boxes in each chapter.

Academic Integrity: Mississippi College students should display academic integrity in all situations. Honesty is expected from all students at all times. Dishonesty, such as cheating, plagiarism, and falsifying information, is a serious offense and is subject to severe penalty. Adherence to the Mississippi College “Honesty Policy” (Mississippi College Undergraduate Bulletin) will be followed.

Cell phones not allowed in the classroom after class begins. They are to be kept in your book bag, purse or pocket. Before class begins, turn cell phones OFF. Audio recording lectures is permitted. Videotaping lectures is NOT permitted.

During an exam

Touching a cell phone after an exam is passed out will result in a zero on the exam. Cell phones should be put away and turned off.

Failure to turn off recording devices during such times is considered cheating and will result in an F on the exam and possible disciplinary procedures for cheating

During exam or quiz review

Recording, video or audio or the taking of pictures during the review of quizzes and exams is NOT permitted. Taking notes is not permitted during the review of quizzes and exams. Exams and scan tron sheets must be returned before the student leaves the room. Failure to do so may result in an F on the exam and may be reported as cheating.

Violation of academic integrity policy will be considered a violation of our honor code and will go onto your permanent record. This may result in expulsion from the course or program. This violation will be reported to any graduate or professional school you apply as well as job applications

Methods of Instruction Methods of instruction will include lecture, discussion and video.

Notes will be placed on Moodle. You will need to print these and bring them to class. You will also be expected to know material from clinical cases in each chapter of the textbook.

Attendance and Make-up Policy:

Strict adherence to Mississippi College's class attendance policy will be followed. Any student whose absences, whether excused or unexcused, exceed 25% of the class meetings will receive a grade of "F" in the course. See *Graduate and Undergraduate Handbook and Catalog*

Attendance in class is expected. The student (not the instructor) is responsible for any instructions, assignments, or work missed during an absence. Tests missed during an unexcused absence will not be made up.

If you miss an exam, you will make it up on dead day at the end of the semester.

What counts as an "excused absence" is solely the judgment of the professor. Typically an excused absence is defined as an absence due to personal illness, or death of a relative. You must have a letter from your physician before an excused absence is granted if you miss due to illness.

Special accommodations at Student Counseling Services:

In order for a student to receive disability accommodations under Section 504 of the Americans with Disabilities Act, he or she must schedule an individual meeting with the Director of Student Counseling Services **immediately upon recognition of their disability** (if their disability is known they must come in before the semester begins or make an appointment **immediately** upon receipt of their syllabi for the new semester). The student must bring with them written documentation from a medical physician and/or licensed clinician that verifies their disability. If the student has received prior accommodations, they must bring written documentation of those accommodations (example Individualized Education Plan from the school system). Documentation must be current (**within 3 years**). The student must meet with SCS **face-to face** and also attend two (2) additional follow up meetings (one mid semester before or after midterm examinations and the last one at the end of the semester). Please note that the student may also schedule additional meetings as needed for support through SCS as they work with their professor throughout the semester. Note: Students must come in **each semester** to complete their Individualized Accommodation Plan (example: MC student completes fall semester IAP plan and even if student is a continuing student for the spring semester they must come in again to complete their spring semester IAP plan).

Student Counseling Services is located in Alumni Hall Room #4 or they may be contacted via email at : mbryant@mc.edu or rward@mc.edu or by phone at [601-925-7791](tel:601-925-7791).

Text:

**Moore, K. L., Persaud, T. V. (2003). *The Developing Human* 9th edition (8th is ok also)
Cochard, L. (2002). *Netter's Atlas of Human Embryology*.**

Notes.

You will find your notes on Moodle

You are expected to have these at each class. These notes are not all inclusive. You will need to add to these notes during class each week.

Evaluation Methods: Five 100 point exams will be given.. Quizzes will also be given weekly. Exams and quizzes will be largely objective in format, e.g. true-false, multiple choice, fill-in-the-blank, diagrams for labeling, etc. Some short discussion and/or listing type questions may be included on the quizzes and exams as well. Clinical material from assigned boxes will be tested on each exam.

Each night, in which there is no exam, you will have a short quiz on previous material. Each quiz is worth 5 points. I will count your top 8 scores. Quizzes that are missed for any reason will count as a drop quiz.

Graduate Student assignment:

Working in groups, graduate students will present a drug teratogen and its effects to the class. You will need to discuss the drug mechanism (how it works) and the mechanism by which the drugs causes birth defects. You must use visuals, therefore, PowerPoint is required. You will receive a rubric that will indicate how this will be graded. You will also be tested on your presentation. This assignment is worth 40 points.

Undergraduate student assignment

You are to choose one of the graduate student presentations and take detailed notes. On the exam following the presentation, you are to write the following from memory. **YOU MUST DO THIS ON THE FOLLOWING EXAM OR POINTS WILL BE DEDUCTED**

- Name of drug
- Normal use of the drug
- List the birth defect(s) the drug may cause
- Describe the birth defect and how the drug induces the defect.

This assignment is worth 15 points. This is not bonus nor is it a part of your exam.

Grades will be calculated using a point system

Grading Scale:

Undergraduate student may earn a total of 555 points.

The undergraduate grading scale is as follows:

500-555 points	90.00% – 100%	A
444-499 points	80% – 89.999%	B
389-443points	70.00% - 79.999%	C
333-388 points	60.00% - 69.999%	D
332 points and below	0 - 59.999%	F

Graduate students can earn up to 580 points. The graduate grading scale is as follows:

522-580 points	90.00-100	A
499-521 points	86.00-89.99	B+
464-498 points	80.00-87.99	B
441-463 points	76.00-79.99	C+
406-440 points	65..00 -77.99	C
348-405 points	60.00 -64.99	D
347 points and below	Below 60.00	F

Early Alert System

Mississippi College has adopted the practice of finding students early in the semester who may be exhibiting behaviors that could ultimately have a negative impact on their academic progress. These behaviors are often called “red flag” behaviors and include, but are not limited to, excessive absences, poor test grades, and lack of class participation or evidence of non-engagement. Identifying these behaviors early gives the instructor the opportunity to raise the “red flag” on behalf of a particular student so that the student can take the appropriate action to redirect his/her progress. The system alerts the student, the student’s advisor, and the Office of Student Success.

These messages are intended to help a student recognize an area of concern and to encourage him/her to make some choices to improve the situation. When a student receives an Early Alert message, the student should quickly make an appointment to talk with his/her professor about the situation. Also, students can make full use of the Office of Student Success to set academic goals and connect to campus resources.

Tutors

David Nguyen
Madison Myer

THE INSTRUCTOR RESERVES THE RIGHT TO ALTER THIS SYLLABUS. THIS MAY INCLUDE CHANGING EXAM DATES.

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<u>Date</u>		<u>Chapter</u>	<u>Exam/quiz</u>
Jan	14	1 and 2	
Jan	21	3 and 4	Quiz 1
Jan	28	5 and 6	Exam 1 (1-6)
Feb	4	7	Quiz 2
Feb	11	7 and 9	Quiz3
Feb	18	9	Exam 2 (4-6)
Feb	25	10 and 11	Quiz 4
Mar	4	11 and 12	Quiz 5
Mar	11	Spring Break-class does not meet	
Mar	18	12	Exam 3 (7-11)
Mar	25	14-16, 13	Quiz 6
Apr	1	13	Quiz 7
April	8	13	Quiz 8
April	15	17	Exam 4 (11, 12, 14-16)
April	22	17-18	Quiz 9
April	29	20	Quiz 10
May	6		Final exam (13, 17,18 and 20)

Final is May 6 at 6:00 PM in MSB 202.

Important Dates

January 20 – MLK Holiday
January 21 – Last Day to Drop a class with 100% refund.
March 10-16 – spring Break
March 21 – Last day to drop a class – 0% refund
April 21- Monday- Easter Holiday