



BSC 492.01E, CRN: 84906

DEVELOPMENTAL BIOLOGY

COURSE SYLLABUS: FALL 2026

Course Location and Times: MWF, 10:00-10:50am; BA245

INSTRUCTOR INFORMATION

Instructor: Hunkar Gizem Yesilyurt, PhD

Office Location: Science Building, STC 255

Office Hours: MWF 11am-12pm, W 2-4pm. For other times, please email for an appointment.

University Email Address: HunkarGizem.Yesilyurt@etamu.edu

Preferred Form of Communication: Email

Communication Response Time: less than 48 hours

COURSE INFORMATION

Textbook (required): Developmental Biology by Barresi, 13th edition; 2023, Sinauer Associates, Inc., ISBN: 9780197574591, ISBN(EB): 9780197574591.

COURSE DESCRIPTION

This course is designed to explore the fundamental concepts and mechanisms that regulate animal development from fertilization of the egg to formation of the adult organism, including such topics as cycle of life, differential gene expression, cell-cell communication, fertilization, early development, formation of germ layers (ectoderm, mesoderm, endoderm) and their derivatives, inductive cell/tissue interactions, stem cells, organogenesis, environment-genetics-birth defects, evolutionary changes and more. Students registered for this course are expected to have strong knowledge in biology, cell biology and chemistry. Prerequisites: **BSC 303**, a grade of "C" or more must be earned in the course; **BSC 305** a grade of "C" or more must be earned in the course.

The syllabus/schedule are subject to change.

STUDENT LEARNING OUTCOMES

1. Describe the general cycle of life in animals beginning with an unfertilized egg through maturation to adulthood.
2. Explain the sequence of events and the mechanisms directing various stages of animal development including gametogenesis, fertilization, cleavage, gastrulation, organogenesis, larval stages and maturity.
3. Explain the role of differential gene expression in embryonic development.
4. Describe how cell-cell communication and tissue induction processes direct the differentiation of cells, tissues, organs during embryogenesis.
5. Describe the general similarities and differences between invertebrate and vertebrate development.
6. Describe the similarities and differences among the classes of vertebrates with respect to embryonic patterns of cleavage, gastrulation and organogenesis.
7. Think **experimentally and critically** about the concepts and phenomena described above.

COURSE REQUIREMENTS

MINIMAL TECHNICAL SKILLS NEEDED

Proficiency in using the D2L Brightspace Learning Management System through myLeo Online

- Proficiency in use of Microsoft Word, and PowerPoint

-Other relevant graphics programs for preparing effective PowerPoint presentations

INSTRUCTIONAL METHODS

Instruction will consist of in-class lectures and discussions. Learning will also be achieved through at-home reading of relevant chapters in the textbook. PowerPoints of all lectures will be made available in the D2L Learning Management System at myLeo Online, posted within 24 hours of that day's lecture. Class announcements and reminders for important events will also be regularly posted through this system. They will also be announced in class. Course progress can be monitored through the online system.

STUDENT RESPONSIBILITIES OR TIPS FOR SUCCESS IN THE COURSE

- Dedicated study time to read chapters in the textbook for relevant materials covered each week in class as noted in course schedule.
- Regularly check both myLEO Online and university email accounts for announcements or class emails.
- Attend and participate in discussions during lecture.
- Attend exams, submit assignments on time.

GRADING

Final grades in this course will be based on the following scale:

A = 90%-100%

B = 80%-89%

C = 70%-79%

D = 60%-69%

F = 59% or Below

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ASSESSMENTS

3 Term Exams – 60 points each = 180 points

Cumulative Final Exam = 100 points

5 Quizzes = 50 points,

2 Assignments = 70 points

Bonus for a Group/Individual Presentation: 20 points

Total = 400 points (100%).

Course Specific Procedures/Policies

Assignments: At home assignments will be assigned two times during the semester (70 points). In addition, a group or individual presentation on a selected topic or research paper in developmental biology will be your contribution to the active learning process (20 points; details to be discussed in the class). Be sure to check D2L announcements for updates.

Quizzes and Exams: Consist of multiple-choice questions (70-80%) and essay-type answer questions (20-30%). The quizzes will be approximately from 2-3 chapter(s). The term exams will be taken at the date and time specified in the course schedule below and the final exam will be cumulative and follow the university final exam schedule. Some questions for quizzes and exams from a given chapter may be derived from the same Test Pool and repeated.

Tentative Course Schedule (Subject to Change)

Week of	Topics (Book Chapters)
(Starting 8/21) 8/24	Welcome / Syllabus / Course Orientation (1) Developmental Anatomy and Genetics
8/31	(2) Cell-Cell Communication
9/7	(2) Cell-Cell Communication cont'd (3) Fertilization and Sex Determination
9/14	(3) Fertilization and Sex Determination cont'd Exam #1 (Units 1-3; Fri, Sep 18th)
9/21	(4) Early Development in Sea Urchins and Snails
9/28	(5) Development of Drosophila
10/5	(6) Amphibian and Fish Development <u>Assignment #1 due Oct 11th (Sunday midnight)</u>
10/12	(7) Development of Birds
10/19	(8) Mammalian Development Exam #2 (Units 4-7; Wed, Oct 21st)

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10/26	(8) Mammalian Development cont'd
11/2	(9) Ectoderm and Organogenesis
11/9	(10) Mesoderm and Organogenesis
11/16	(11) Endoderm and Development of Limbs Exam #3 (Units 8-11; Fri, Nov 20th)
11/23	(12) Postembryonic Development Thanksgiving Break (11/26-27)
11/30	(13) Evolutionary Aspects <u>Assignment #2 due Dec 4th (Friday midnight)</u>
Finals Week	Final Exam – Mon, Dec 7th 10:30am-12:30pm (60% Cumulative (Topics1-11), 40% on Topics 12-13)

Makeup Policy: The student is responsible for requesting a makeup when they are unable to attend the regularly scheduled examination and must schedule the makeup within 2 days of the absence. Makeup exams will be scheduled only in the event of an EXCUSED absence (as defined in the Student's Guidebook). If the test is not made-up, the student will receive a zero for that exam.

TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by East Texas A&M University have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

Zoom Video Conferencing Tool

https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom_Account.aspx?source=universalmenu

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@etamu.edu.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at

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home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

TECHNICAL SUPPORT

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

STUDENT RESPONSIBILITIES FOR COURSE

CWID AND PASSWORD

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@etamu.edu.

TECHNOLOGY-RELATED ISSUES

Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a ETAMU campus open computer lab, etc.

TECHNOLOGY REQUIREMENTS AND SUPPORT

MINIMAL TECHNICAL SKILLS NEEDED

Students will need reliable computer and internet access for this course. Students must be able to effectively use myLeo email, myLeo Online D2L, and Microsoft Office.

LEARNING MANAGEMENT SYSTEM (LMS) – D2L

All course sections offered by East Texas A&M University have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are the technical requirements:

- View the [Learning Management System Requirements Webpage](#).
- Learn more on the [LMS Browser Support Webpage](#).

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TECHNICAL SUPPORT

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found on the [Brightspace Support Webpage](#).

COMMUNICATION AND SUPPORT

INTERACTION WITH INSTRUCTOR STATEMENT

If you have any questions or are having difficulties with the course material, please contact your instructor. Correspondence will always be through university email (your “myLeo” mail) and announcements in myLeo online (D2L). You will not RECEIVE email through D2L, so be sure to check your ETAMU email for communication. Students are encouraged to check university email daily.

INCLUDE THE FOLLOWING IN EMAILS WITH INSTRUCTOR:

- Course name and subject in the subject line
 - Salutation (example: Good afternoon, Dr. Jackson)
 - Proper email etiquette (no “text” emails – use proper grammar and punctuation)
 - Student name and CWID after the body of the email (possibly add to student signature on email)
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COURSE AND UNIVERSITY PROCEDURES/POLICIES

SYLLABUS CHANGE POLICY

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

STUDENT CONDUCT

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The [Code of Student Conduct](#) is described in detail online in the [Student Guidebook](#).

Students should also consult the [Rules of Netiquette Webpage](#) for more information regarding how to interact with students in an online forum.

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ETAMU ATTENDANCE

For more information about the attendance policy, please view the [Attendance Webpage](#) and the [Class Attendance Policy](#)

ACADEMIC INTEGRITY

Students at East Texas A&M University are expected to maintain high standards of integrity and honesty in all their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty University Procedure 13.99.99.R0.03](#)

[Undergraduate Student Academic Dishonesty Form](#)

[Graduate Student Academic Dishonesty University Procedure 13.99.99.R0.10](#)

[Graduate Student Academic Dishonesty Form](#)

USE OF ARTIFICIAL INTELLIGENCE

East Texas A&M University acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources

STUDENTS WITH DISABILITIES-- ADA STATEMENT

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
East Texas A&M University

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Velma K. Waters Library Rm 162
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
Email: studentdisabilityservices@etamu.edu
Website: [Office of Student Disability Services](#)

NONDISCRIMINATION NOTICE

East Texas A&M University will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information, or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

CAMPUS CONCEALED CARRY STATEMENT

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in East Texas A&M University buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and ETAMU Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all East Texas A&M University campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

EAST TEXAS A&M SUPPORTS STUDENTS' MENTAL HEALTH – COUNSELING SERVICES

The Counseling Center at East Texas A&M University, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit www.tamuc.edu/counsel

MENTAL HEALTH AND WELL-BEING

The university aims to provide students with essential knowledge and tools to understand and support mental health. As part of our commitment to your well-being, we offer access to Telus Health, a service available 24/7/365 via chat, phone, or webinar. Scan the QR code or go to https://studentsupport.telushealth.com/us/about#download_app to download the app and explore the resources available to you for guidance and support whenever you need it.

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