Syllabus BSC 526 Developmental Biology

Course Number: BSC 526; CRN: 81126
Course Title: Developmental Biology
Fall 2016

INSTRUCTOR

Lecture: Dr. Kodeeswaran Parameshwaran
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             Web based course

Office Hours, Location, Phone & E-mail:
Monday: 10:00 am – 12:00 pm
Wednesday: 9.30 am – 12.30 pm
or by appointment **only**

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COURSE INFORMATION

TEXTBOOK (REQUIRED): Developmental Biology by Scott F. Gilbert 9th, 10th or 11th editions; Sinauer Associates, Inc., ISBN: 978-0-87893-978-7

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.

STUDENT LEARNING OUTCOMES:
Upon completion of this course the students will be able to:
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.

COURSE REQUIREMENTS

TEACHING METHOD

This is a fully online course. All course materials other than the text book will be posted in eCollege.

ASSESSMENT METHODS

There will be three types of assessments that will contribute to the grade. These are:
1. Quizzes
2. Exams
3. Assignments

Important information
1. There will not be any additional points extra credits. A student's grade will come only from the points he/she earns in these three types of assessments.

2. All assignments should be submitted before the deadlines. Late submissions will automatically receive ZERO points.
2. Exams and quizzes will be <u>usually</u> held on Fridays and Saturdays. Students can take the exam/quiz online during this 48 hour time window.
3. Students cannot take the exams or quizzes before the designated time. Trying this will result in losing your time without viewing the questions.
4. No requests to open the exams or quizzes earlier will be accepted.
5. Failure to take the exams or quizzes within the designated time will result in ZERO credit.
6. All requests for make-up exams/quizzes <u>must accompany supporting documents</u> (e.g. a doctor's note). The reasons for not taking an exam/zero within the designated should be acceptable, as outlined in your student handbook. Forgetting to take the exam/quiz will not be an acceptable reason.
7. It is the students' responsibility to check emails **and** eCollege for exam/quiz dates and assignment postings & deadlines.
8. <u>Once you start exam or quiz questions will appear one at a time. You have to answer the question before proceeding to the next question. You will not be able to review or change answers</u>.
9. Please read the instructions carefully before beginning the exam/quiz.

<u>Assignments:</u> There will also be two assignments. You will need to write an essay on the assigned topic or area.

<u>Quizzes:</u> There will be 4 quizzes.

<u>Exams:</u> Consist of multiple choice questions and short answer questions. Questions are drawn from the same test pool. There will be four exams among which the last exam will be a <u>cumulative final</u> exam.

<u>GRADING METHODS</u>
<u>Grading scale:</u>
The final course letter grade will be assigned based upon the following break-down:
90 - 100%   = A
80 - 89%   = B
70 - 79%   = C
60 - 69%   = D
00 - 59%   = F

<u>Distribution:</u>
Quiz   = 32% (4 quiz)
Exams   = 30% (3 exams; 10%/exam)
Assignment   = 8% (two; 4% for each)
Final Exam[*]   = 30%

*Final exam is a comprehensive exam that will cover all the chapters.

TECHNOLOGY REQUIREMENTS

Important Disclaimer: You might not need all the requirements listed in this section for this particular course. A computer installed with an internet browser as specified below, Acrobat Reader and Microsoft Office is considered to be sufficient. A current security software (against virus, malware and other malicious contents) is also necessary.

To fully participate in online courses you will need to use a current Flash enabled internet browser. For PC and Mac users the suggested browser is Mozilla Firefox.

• You will need regular access to a computer with a broadband Internet connection. The minimum computer requirements are:
o 512 MB of RAM, 1 GB or more preferred
o Broadband connection required courses are heavily video intensive
o Video display capable of high-color 16-bit display 1024 x 768 or higher resolution

• You must have a:
o Sound card, which is usually integrated into your desktop or laptop computer
o Speakers or headphones.
o *For courses utilizing video-conferencing tools and/or an online proctoring solution, a webcam and microphone are required.

• Both versions of Java (32 bit and 64 bit) must be installed and up to date on your machine. At a minimum Java 7, update 51, is required to support the learning management system. The most current version of Java can be downloaded at: JAVA web site http://www.java.com/en/download/manual.jsp

• Current anti-virus software must be installed and kept up to date.

• Run a browser check through the Pearson LearningStudio Technical Requirements website. Browser Check
http://help.ecollege.com/LS_Tech_Req_WebHelp/en-us/#LS_Technical_Requirements.htm#Browset
Running the browser check will ensure your internet browser is supported.
Pop-ups are allowed.
JavaScript is enabled.
Cookies are enabled.

• You will need some additional free software (plug-ins) for enhanced web browsing. Ensure that you download the free versions of the following software:
o Adobe Reader https://get.adobe.com/reader/
o Adobe Flash Player *(version 17 or later)* https://get.adobe.com/flashplayer/
o Adobe Shockwave Player https://get.adobe.com/shockwave/
o Apple Quick Time http://www.apple.com/quicktime/download/
.

• At a minimum, you must have Microsoft Office 2013, 2010, 2007 or Open Office. Microsoft Office is the standard office productivity software utilized by faculty, students, and staff. Microsoft Word is the standard word processing software, Microsoft Excel is the standard spreadsheet software, and Microsoft PowerPoint is the standard presentation software. Copying and pasting, along with attaching/uploading documents for assignment submission, will also be required. If you do not have Microsoft Office, you can check with the bookstore to see if they have any student copies.

• For additional information about system requirements, please see: System Requirements for LearningStudio
https://secure.ecollege.com/tamuc/index.learn?action=technical

ACCESS AND NAVIGATION:
Pearson LearningStudio (eCollege) Access and Log in Information
This course will be facilitated using Pearson LearningStudio, the learning management system used by Texas A&M University-Commerce. To get started with the course, go to myLeo and from the top menu ribbon select eCollege. Then on the upper left side of the screen click on the My Courses tab. http://www.tamuc.edu/myleo.aspx
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@tamuc.edu**.**
Note: It is strongly recommended you perform a "Browser Test" prior to the start of your course. To launch a browser test login to Pearson LearningStudio, click on the My Courses tab, and then select the Browser Test link under Support Services.

Pearson LearningStudio Student Technical Support
Texas A&M University-Commerce provides students technical support for the use of Pearson LearningStudio.
Technical assistance is available 24/7 (24 hours, 7 days a week).

If you experience LearningStudio (eCollege) technical problems, contact the LearningStudio helpdesk at 1-866-656-5511 (toll free) or visit Pearson 24/7 Customer Support Site http://247support.custhelp.com/

The student help desk may be reached in the following ways:

☐ **Chat Support:** Click on *'Live Support'* on the tool bar within your course to chat with a Pearson LearningStudio Representative.

☐ **Phone:** 1-866-656-5511 (Toll Free) to speak with Pearson LearningStudio Technical Support Representative.

Accessing Help from within Your Course: Click on the *'Tech Support'* icon on the upper left side of the screen inside the course. Then you will be able to get assistance via online chat or by phone.

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 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.

Policy for Reporting Problems with Pearson LearningStudio

Should students encounter Pearson LearningStudio based problems while submitting assignments/discussions/comments/exams, the following procedure must be followed:

1. Students must report the problem to the help desk. You may reach the helpdesk at 1-866-656-5511.

2. Students must file their problem with the helpdesk and obtain a helpdesk ticket number

3. Once a helpdesk ticket number is in your possession, students should email me to advise me of the problem and provide me with the helpdesk ticket number.

4. I will call the helpdesk to confirm your problem and follow up with you

PLEASE NOTE: Your personal computer and internet access problems are not a legitimate excuses for filing a ticket with the Pearson LearningStudio Help Desk. Only Pearson LearningStudio based problems are legitimate reasons to contact the Help Desk.

You strongly are encouraged to check for your internet browser compatibility **BEFORE** the course begins and take the Pearson LearningStudio tutorial offered for students who may require some extra assistance in navigating the Pearson LearningStudio platform.

myLeo Support

Your myLeo email address is required to send and receive all student correspondence. Please email helpdesk@tamuc.edu or call us at 903-468-

6000 with any questions about setting up your myLeo email account. You may also access information at myLeo. https://leo.tamuc.edu

Learner Support

The One Stop Shop was created to serve you by providing as many resources as possible in one location. http://www.tamuc.edu/admissions/onestopshop/

The Academic Success Center provides academic resources to help you achieve academic success.

http://www.tamuc.edu/campusLife/campusServices/academicSuccessCenter/

FREE MobilE APPS

The Courses apps for phones have been adapted to support the tasks students can easily complete on a smaller device. Due to the smaller screen size course content is not presented.

The Courses app is free of charge. The mobile Courses Apps are designed and adapted for different devices.	**iPhone –** Pearson LearningStudio Courses for iPhone **Android** – LearningStudio
App Title:	Courses - Phone
Operating System:	**iPhone** - OS 6 and above **Android** – Jelly Bean, Kitkat, and Lollipop OS
iPhone App URL:	https://itunes.apple.com/us/app/pearson-learningstudio-courses/id977280011?mt=8
Android App URL:	https://play.google.com/store/apps/details?id=com.pearson.lsphone

Once downloaded, search for Texas A&M University-Commerce, and it should appear on the list. Then you will need to sign into the myLeo Mobile portal. The Courses App for Android and iPhone contain the following feature set:
• View titles/code/Instructor of all Courses enrolled in online
• View and respond to all discussions in individual Courses
• View Instructor Announcements in individual Courses
• View Graded items, Grades and comments in individual Courses
• Grade to Date
• View Events (assignments) and Calendar in individual Courses
• View Activity Feed for all courses
• View course filters on activities
• View link to Privacy Policy
• Ability to Sign out
• Send Feedback

LearningStudio Notifications
Students can be alerted to course activities via text on their mobile phones or up to two email addresses.
Based on their preferences, students can automatically receive a push notification with every new: course announcement, threaded discussion post, grade, and/or assignment without having to login to the course. Enrolled students will automatically receive email notifications for announcements and can opt out of this feature. To receive text notifications, students must opt in. To begin setting up notifications, go into your course in LearningStudio and click on the bell-shaped Notifications icon on the main menu ribbon.
By default the student's university email address will appear. This cannot be changed in LearningStudio. Additional email addresses may be added by clicking the Add button. After all of the other selections are completed be sure to click the Save and Finish button.

COMMUNICATION AND SUPPORT
Interaction with Instructor Statement
The instructor's communication response time and feedback on assessments are stated clearly.

UNIVERSITY STATEMENTS

Course Specific Procedures/Policies
Attendance/Lateness, Late Work, Missed Exams and Quizzes and Extra Credit

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.

University Specific Procedures
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 in the Student Guidebook.
http://www.tamuc.edu/admissions/registrar/documents/studentGuidebook.pdf*.*

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: Netiquette
http://www.albion.com/netiquette/corerules.html

TAMUC Attendance
For more information about the attendance policy please visit the Attendance webpage and Procedure 13.99.99.R0.01.
http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx
http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf

Academic Integrity
Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:
Undergraduate Academic Dishonesty 13.99.99.R0.03
http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf
Graduate Student Academic Dishonesty 13.99.99.R0.10
http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf

ADA Statement
Students with Disabilities
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
Texas A&M University-Commerce
Gee Library- Room 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
Email: Rebecca.Tuerk@tamuc.edu

Website: Office of Student Disability Resources and Services
http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/

Nondiscrimination Notice
Texas A&M University-Commerce 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

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce 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 A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations. For a list of locations, please refer to ((http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf) and/or consult your event organizer). Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

More information is available in this link:
http://www.tamuc.edu/academics/colleges/educationHumanServices/departments/educationalLeadership/important-information.aspx

COURSE CALANDAR*
Week 1 (1) Developmental Anatomy and Genetics; (2) Cell-Cell Communication
Week 2 Continuation of (1)
Week 3 (3) Fertilization
Week 4 (4) Early Development in Sea Urchins and Snails
Week 5 Continuation of (4)
Week 6 (5) Development of Drosophila

Week 7   Continuation of (5)
Week 8   (6) Amphibian and Fish Development
Week 9   (7) Development of Birds
Week 10   (8) Mammalian Development
Week 11   (9) Ectoderm and Organogenesis
Week 12   (10) Mesoderm and Organogenesis
Week 13   (11) Development of Limbs
Week 14   (12) Sex Determination
Week 15   (13) Postembryonic Development; (14) Evolutionary Aspects

Cumulative Final: <u>**Last week of the semester**</u>

***Please check the academic calendar
(https://ems.tamuc.edu/MasterCalendar/) for details on holidays and
start and end dates of the current semester. First day of class is
August 29, 2016.**

***ALL DATES AND CHAPTERS COVERED ARE TENTATIVE AND SUBJECT
TO CHANGE.**

***QUIZ, EXAM AND ASSIGNMENT DETAILS WILL BE ANNOUNCED
BY/IN EMAIL OR eCOLLEGE OR BOTH.**