Biology 302 Developmental Biology
Fall 2005

Class and Lab meeting info: TT 1:15-4:15 in NLH 304/407
Professor: Dr. Deborah Eastman
Office/lab: 407 NLH
ext. 2445
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Course Objectives:

To introduce you to the many exciting facets of developmental biology.

To engage you in the experimental approaches used to study a variety of developmental processes in different organisms.

To develop your abilities to design experiments and analyze results.

To enhance your writing and critical thinking skills.

To promote your thinking about the social issues involved within the field of developmental biology.

Office hours: My official office hours (when I'll be in my office for sure) are Mon. 1:00-2:30 and Weds. 10:00-12:00. If you have any questions please come and see me during these hours. I will be in my office or lab most days from 9-12 and 1-5, unless I am teaching or in a meeting (see the schedule by my office door). If you have a conflict with the official office hours or have burning questions that can't wait you may call me to set up a convenient time to meet. You may also e-mail me with any questions you have and I will return an answer promptly.

Reading Material: The textbook for this course is "Developmental Biology"(7^{th} edition) by Scott F. Gilbert. We will also be looking at images, movies and additional text from two CD-ROMs, "An Interactive Guide to Developmental Biology: vade mecum2", by Mary Tyler and Ronald Kozlowski and "Differential Expressions", by Tyler, Kozlowski and Gilbert. I have prepared a laboratory manual that is available for printing out on our Web-CT site(see below). Journal articles and additional hand-outs will be available on-line or distributed in class.

Web Sites: A Web-CT site for the course is available through Course Web Pages site on the Academics home page. This site will contain information on class and laboratory assignments throughout the semester. You will also find links to interesting and helpful developmental biology sites. The author of the text we will be using, Scott Gilbert, has a great website at http://www.devbio.com. This site has informative and up-to-date topics/materials to complement his book.

Accommodations for Disabilities: If you have a physical or mental disability, either hidden or visible, which may require classroom, test-taking, or other reasonable modifications, please see me as soon as possible. If you have not already done so, please be sure to register with Susan L. Duques, Ph.D., in the Office of Student Disability Services, at Extension 5428.

Class Participation, Excused Absences and Late Assignment Policies: As a student in this course, your attendance and contributions are highly valued. I encourage you to attend all class meetings and engage in discussions. I will distribute weekly focus questions that will be used to guide our class discussions of the material. I encourage you to use these questions to focus your reading and bring in answers to class discussions. Attendance and participation in the laboratory is required. The majority of our lab activities will be on Tuesdays, but we will continue several experiments over into Thursdays. If you will miss any laboratory sessions for a college scheduled event or because of illness please notify me prior to the event. Absence without verified notification will cause you to lose 25 points from your total laboratory points. Five points per day will be deducted from class or lab assignments that are turned in late without prior notification.

Plagiarism: It is important that you understand the definition of plagiarism. In the sciences we rarely use direct quotes, rather we paraphrase and synthesize results and explanations from published articles/resources. This can be a hazy area for plagiarism. You should not just rearrange another author's words. The best way to stay clear of this is to read the resource, take notes in your own words and write from your own notes without having the primary source in front of you. The following information on plagiarism is from the Connecticut College Student Handbook: "PLAGIARISM adversely affects each member of the College community because it threatens the academic integrity of the institution; it is the student´s obligation to acknowledge all resources and cite them according to proper procedure. PLAGIARISM occurs when academic work does not reflect the student´s personal and original words, word-groupings or ideas. PLAGIARISM is a violation of the Student Code of Conduct and the Honor Code, regardless of intent. Ignorance or negligence is not considered an excuse for PLAGIARISM. PLAGIARISM consists of:

a. handing in a paper that is not one´s own work
b. using the language of another writer without proper documentation (e.g. footnotes, quotation marks, parenthetical documentation, bibliography);
c. using the ideas, arguments, or organization of another writer without proper acknowledgment;
d. submitting a paper as original work in one course when the paper has already received credit in another course (unless prearranged with the professor).

Student Evaluation: Grades will be based on the points that you earn from class meeting assignments, laboratory assignments, exams and class participation. 620 total points will be available as follows:

Hour Exams	2 @ 100 pts.	=	200 pts.
Final Exam	1 @ 150 pts.	=	150 pts.
Class Assignments	5 @ 10 pts.	=	50 pts.
Scientific Paper	1 @ 100 pts.	=	100 pts.
Journal article critiques	2 @ 10 pts.	=	20 pts.
Laboratory Notebook	60 pts.	=	60 pts.
Class participation	40 pts.	=	40 pts.
	Total	=	**620 pts**

Your final grade will be determined by the percentage of points that you earn as follows:

97-100%	A +
93-96%	A
90-92%	A-
87-89%	B+
83-86%	B
80-82%	B-
77-79%	C+
73-76%	C
70-72%	C-
67-69%	D+
63-66%	D
60-62%	D-
< 60%	F

Important Dates for the Fall 2005 Semester:

Sep. 15	Change of course period ends
Oct. 13	Last day to do unsat./sat. option; voluntary course drop begins
Oct. 13-17	Fall Break-No classes
Nov. 26	Thanksgiving- No classes
Dec. 2	Voluntary course drop period ends
Dec. 15	Last day of classes
Dec. 16	Review day
Dec. 17-22	Final exams

Developmental Biology Bio 302
Class Meeting Syllabus Fall 2005

Class Dates:	Class Topic	Readings:
Sep. 1	Introduction to Developmental Biology Course Information	G: Ch. 1
Sep. 6	Introduction to Animal and Plant Development	G: Ch. 2; Ch. 20
Sep. 8	Cell Specification Morphogenesis, Cell Adhesion,	G: p. 51-69 G: p. 69-77
Sep. 13	Metamorphosis and Regeneration	G: p. 575-78; 592-601
Sep. 15	Fertilization	G: p. 183-97; 197-214
Sep. 20	Fertilization Cleavage and Early Development in Urchins	G: p. 683-86; 221-239
Sep. 22	Genetics from the Dev. Biologist's Point of View A Historical Perspective	G: p. 89-93; 686-91
Sep. 27	Techniques	G: p. 93-105
Sep. 29	**EXAM I**	
Oct. 4	Differential Expression	G: p. 107-137; 691-93
Oct. 6	Projects	
Oct. 11	Cell Signaling Events During Development	G: p. 143-163
Oct. 13	FALL BREAK	
Oct. 18	Cell Signaling Events During Development	G: p. 164-175
Oct. 20	Early development in Plants	Howell: Ch. 3; Ch. 11

Oct. 25	Cleavage and Early Development: Amphibians	G: p. 221-227; 305-317
Oct. 27	Cleavage and Early Development: Worms	G: p. 227-258
Nov. 1	Early Development in Vertebrates: Fish and Birds	G: p. 345-363
Nov. 3	Early Development in Vertebrates Mammals	G: p. 363-373; 693-703
Nov. 8	**EXAM II**	
Nov. 9	PANEL DISCUSSION ON STEM CELLS AND CLONING Common-Hour	
Nov. 10	Axis Formation: Flies	G: p. 263-299
Nov. 15	Axis Formation: Frogs and Mammals	G: p. 321-338; 375-384
Nov. 17	Neural Development: CNS	G: p. 391-421
Nov. 22	Neural Development: Neural Crest and Axons	G. p. 427-458
Nov. 24	**Thanksgiving Break- No Class**	
Nov. 29	Mesoderm and Endoderm Paraxial and Intermediate Mesoderm	G: p. 465-485
Dec. 1	Lateral Plate Mesoderm and Endoderm	G: p. 491-518
Dec. 6	Tetrapod Limbs	G: p. 523-543
Dec. 8	Evo-Devo	G: p. 751-780
Dec. 13	Wrap-up	

Exam/Paper Dates:

Exam I	Sep. 29
Exam II	Nov. 8
Scientific Paper	Dec. 13th at 5:00 PM in my office
Final Exam	Scheduled during Dec. 17-22

Biology 302 Developmental Biology
Laboratory Schedule
Fall 2005

Week of	Laboratory
Sep. 6	Intro. to Dev. Biol. Starfish development, Plant Development
Sep. 13	Regeneration: Spirostumum, Hydra, Planaria, Lumbriculus; Library
Sep. 20	Immunocytochemistry in Sea Urchin Embryos Journal Article Discussion-Critique
Sep. 27	Projects
Oct. 4	Projects
Oct. 11	Projects
Oct. 18	Journal Article Discussion-Critique
Oct. 25	**Differential Gene Expression in the** Model Plant Arabidopsis: Enhancer Traps
Nov. 1	Gastrulation and Organogenesis During Vertebrate Development: Zebrafish and Chicks
Nov. 8	Differential Gene Expression during fly axis formation: Reporter Genes; Set up Projects
Nov. 15	Projects
Nov. 22	Projects Journal Article Discussion-Critique
Nov. 29	Projects
Dec. 6	Projects
Dec. 13	Wrap-up