

BSCI 207 : PRINCIPLES OF BIOLOGY III – ORGANISMAL BIOLOGY

SPRING 2011 – MW 9-10 am BPS1250, F 9-10 (S0101) or 10-11 (S0102) am PLS1140

Drs. Todd Cooke (TC) and Jeff Jensen (JJ)

Text: Biological Science, 3rd Ed. Scott Freeman. 2008. Pearson Education, Inc. ISBN: 0-13-1409414950-8

Course Web Site: www.elms.umd.edu

"No one with an unbiased mind can study any living creature, however humble, without being struck with enthusiasm at its marvelous structure and properties" -- Charles Darwin

Date	#	Lecture (TC = Todd, JJ = Jeff)/ GAE (Group Active Engagement)	Readings	Other
(M) Jan. 24	1	L – Class expectations, and an Introduction to Life (JJ/TC)	1-15	Attitudes Survey available
(W) Jan. 26	2	INTRODUCTORY BIOLOGY BACKGROUND TEST		
(F) Jan. 30	3	GAE –Thermodynamics in biological systems - Energy for free (TC)	31-37; 58-60	

History and Diversity of Life				
(M) Jan. 31	4	L – Genomics: Common heritage of all life, and why history matters (TC)	Chap. 20; 543-48	Attitudes survey due
(W) Feb. 2	5	L - Deep Origins: The earliest signs of life and how we know (JJ)	45-50; 67-71; 74-79; 548-56	
(F) Feb. 4	6	GAE – Phylogenies and the Tree of Life (Last day of Schedule adjustment period) (JJ)	543-48 (review)	Expectations HW <u>and</u> Thermodyn. HW due

(M) Feb. 7	7	L - Prokaryotic Diversity I - What wonderful life (TC)	Chap. 28; 296-97; 420-21	Diagnostic M-up work due
(W) Feb. 9	8	L - Prokaryotic Diversity II - What wonderful life (even more) (TC)	Same as above	
(F) Feb. 11	9	GAE – Prokaryotic Bioenergetics: All that jazz about ETC's (TC)	187-92	Phylogeny HW due

(M) Feb. 14	10	L - Prokaryotic Bioenergetics II – It's easy being green (TC)	849-50; 198-200; 208-212	
(W) Feb. 16	11	EXAM 1 (75 pts.) – Periods 1-10		
(F) Feb. 18	12	GAE – Endosymbiosis and eukaryotic diversity (TC)	Chap. 29:604-06; 609-10	

(M) Feb. 21	13	L - The Origin and Diversity of Unicellular Eukaryotes - E Pluribus Unum (JJ)	Chap. 29; 593-607; 615-16	
(W) Feb. 23	14	L - Diversity of Unicellular Eukaryotes – It's not easy being green (or red or brown) (TC)	Chap. 29; 608-615; 617-623	
(F) Feb. 25	15	GAE – Diffusion as an organismal design constraint (TC)	982	Endosymbiosis HW due

(M) Feb. 28	16	L – Origin and Diversity of Plants - Making the land green (TC)	Chap. 30	
(W) Mar. 2	17	L – Origin and Diversity of Fungi - To be, or not to be ... motile (TC)	Chap. 31	
(F) Mar. 4	18	GAE – Introduction to Organismal Design (TC)	921-24	Diffusion HW due

(M) Mar. 7	19	L - The Origin and early evolution of animals - E Pluribus Unum (Squared) (JJ)	688-709, review 554-557	
(W) Mar. 9	20	L - Animals on the move (JJ)	712-34 (except taxonomic boxes)	
(F) Mar. 11	21	L - Animals - up and running (or flying, or swimming, or ...) (JJ) NOTE: Both sections meet at 9 am in BPS1250	737-62 (except tax.boxes)	Organismal Design HW due

(M) Mar. 14	22	L – An evolutionary perspective on organismal diversity (JJ)	558-64; 481-89	
(W) Mar. 16	23	EXAM 2 (75 pts.) – Periods 12-22		
		Fundamental Processes of Life		
(F) Mar. 18	24	L – Heads, tails, and everything in between - Building bodies (JJ) NOTE: Both sections meet at 9 am in BPS1250	434-35; 438-48; 460-65	

SPRING BREAK – MARCH 21-25

(M) Mar. 28	25	L – Evolutionary developmental biology (JJ)	444-448 review	
(W) Mar. 30	26	L – Shoots and roots: Building bodies II (TC)	Chap. 36	
(F) Apr. 1	27	GAE – Introductory discussion: Major themes in organismal function (JJ)		
(M) Apr. 4	28	L - Gas Exchange I - Moving molecules (JJ)	803; 978-88	
(W) Apr. 6	29	L - Gas Exchange II: Clever tricks (JJ)	“”	
(F) Apr. 8	30	GAE – Comparative features of circulatory systems: Sharing the wealth (TC) (Last day to drop with a “W”)	Chap. 37; Chap. 44: 994-1003	Organismal Function HW due
(M) Apr. 11	31	L – Animal Circulation – Playing with pressure (JJ)	994-1003	
(W) Apr. 13	32	L - Comparative transmembrane transport I – Everybody’s doing it (TC)	105-107; 832; 845-46; 934-40	
(F) Apr. 15	33	GAE - Bioenergetics of transmembrane transport – One mechanism, many functions (TC)	Same as a above	Circulation HW due
(M) Apr. 18	34	Comparative Transmembrane transport II – Diverse applications in animals (JJ)	957-973; 934-54	
(W) Apr. 20	35	L – Electrical and Chemical signaling I: www.excite.org(anism) (TC)	Chap. 45: 1006-22	
(F) Apr. 22	36	L – Electrical and Chemical signaling II: www.excite.org(anism) (TC) Both sections meet at 9 am, BPS1250		
(M) Apr. 25	37	EXAM 3 (75 pts.) – Periods 24-34		
(W) Apr. 27	38	L – Neural systems: Integrating the organism (JJ)	1022-27; 1030-32	
(F) Apr. 29	39	L – Sensory mechanisms: Making sense of the environment (JJ) Both sections 9 am, BPS1250	1030-45	Attitudes Survey available
(M) May 2	40	L - Motility I - Running the race (TC)	121; 141-47; 611-12; 1046-49	
(W) May 4	41	L - Motility II - Muscles and Machines (JJ)	1046-51	
(F) May 6	42	GAE – Biomechanics: If I had a lever ...	1045-46	
(M) May 9	43	L – Animal locomotion	Same as above	Attitude survey due Biomechanics HW due Tues., 5/10 5 pm on-line
(M) May 16		Final Exam (130 pts.) - 8-10 AM!!! Comprehensive, emphasis 36-43		

GRADING: Course total = 450 pts.

Diagnostic Exam (30 pts): We will administer a 30 pt. exam on Wednesday, 1/26. A score of “adequate” is required for all sections in order to receive the 30 points. Students with less than adequate scores on one or more sections will be required to complete other work to receive the 30 pts.

General Attitudes Survey (2 @ 10 pts. = 20 pts.): A brief survey will be administered via the course web site at the beginning and end of the course. Each is worth 10 pts.

Homework assignments (9 @ 15 pts. each, lowest dropped = 120 pts): Homework assignments based on the Group Activity Exercises (GAE) will be distributed during most weeks. We encourage each group to schedule a regular meeting time every week between Sunday and Wednesday to discuss and work on the homework based on the preceding GAE. *However, any written work you turn in should be your own, so write your assignments on your own after the group meeting!* Written assignments that are very similar in wording and organization will be considered plagiarism, awarded zero points, and referred to the Office of Judicial Programs. The penalty for late work is 10%/day. No work will be accepted more than five days late.

Exams (280 pts.): There will be three midterms (75 pts. each, lowest dropped = 150 pts.) and one comprehensive final (130 pts.). NOTE: We do not give make-up exams - if you miss a midterm, that exam will automatically be treated as the dropped exam.

Clickers: We will use clickers in this course, but no points will be specifically assigned to clicker responses.

Lecturers:

Dr. Todd Cooke; tjcooke@umd.edu
HJPatterson 2206; 301-405-1628
Office hours: MW 11-12 and by appt.

Teaching Assistants:

Graduate TA: Juannan Zhou; ohioplayers@gmail.com
Undergraduate TA: Hafsa Mustafa; hafsa.hmustafa@umd.edu
Guided Study Sess. leader/Schedule: Turna Mukherjee/M and W 4-5. Location TBA