

Advanced Molecular Genetics Biology 566

Spring 2008, Jan. 23 – May 9, TR, Online

Instructor:

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Date	Lecture	Topic	Reading
Jan. 22	1	Introduction, Central Dogma	G&S 1-26, 143-181
24	2	Prokaryotic – RNA Polymerase and Transcription Regulation	G&S 26-55
29	3	Prokaryotic – Regulation of Prokaryote Gene Expression	G&S 42-57
31	4 & 5	Regulation of Eukaryotic Gene Expression,	G&S 50-114
Feb. 5	6	Recruitment and Chromatin	G&S 115 - 140
		Exam 1	
7	7	Yeast Silencing	Silenced Chromatin in Yeast (Review)
12	8	X-chromosome inactivation	X Chromatin Inactivation (Review)
14	10	Signal Transduction: Signals and receptors	Signal Transduction: Chapters 1 and 2
19	11	Signal Transduction: Structurally Conserved Protein Modules	Signal Transduction, Chapter 18
21	12	Signal Transduction: Signally through G-Proteins	Signal Transduction, Chapter 4
		Exam 2	
26	13	Signal Transduction: Effector Enzymes Coupled to AC & PLC	Signal Transduction, Chapter 5
28	14	Signal Transduction: Calcium ion signaling	Signal Transduction, Chapter 7 and 8
Mar. 4	15	Signal Transduction: Phosphorylation	Signal Transduction, Chapter 9
6		Exam 3	
18	16	Signal Transduction: Dephosphorylation	Signal Transduction, Chapter 17
	17	Signal Transduction: Pathways operated by RPTKs	Signal Transduction, Chapter 11
20	18	Signal Transduction: Pathways operated by non-RPTKs	Signal Transduction, Chapter 12
25	19	Signal Transduction: Pathways operated PI3K & PKB	Signal Transduction, Chapter 13

27	20 & 21	Signal Transduction: Role of Cell Adhesion Molecules and Apoptosis	Signal Transduction, Chapter 14
Apr. 1	22	Signal Transduction: Leukocyte Trafficking	Signal Transduction, Chapter 15
3	23	Signal Transduction: Receptor bound protein s/t kinases	Signal Transduction, Chapter 16
		Exam 4	
8		Review Project: Ravi Atluri, Li Peng Bi	
10		Review Project: Lakshmi Bollu, Sri Kiran Botta	
15		Review Project: Kelly Burton, Madhuri Jonnalagadda	
17		Review Project: Chia Hui Lin, Sailaja Marpuri	
22		Review Project: Sondra Massey, Satish Perikala	
24		Review Project: Priyusha Pokala, Kishore Polireddy	
29		Review Project: Shobha Silparasetty, Sanjay Varikuti	
May 1		Review Project: Yinu Wang, Xipeng Zhang	
7	Final	All Review Discussion Comments and Surveys Due	

Prerequisites: Biology 495 or consent of instructor.

This course will consider the molecular mechanisms for gene expression and regulation. 3 hr. credit.

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Required Texts

Genes and Signals by Mark Ptashne and Alexander Gann, Cold Springs Harbor Press, 2002. ISBN 0-87969-633-8

Signal Transduction by B.D. Gomperts, I.M. Kramer, and P.E.R. Tatham, Elsevier Academic Press, 2003. ISBN 0-12-289632-7

Additional Papers and Reviews listed in reading assignments will be available as .pdfs on web.

Participation

Students are expected to read the assignment before attending the online class. After viewing the online lecture, you will answer questions and submit them to your instructor via email. **The topic field of the email MUST contain the letters B566, or the assignment may not be graded.**

The answers to all questions throughout the course must be in your own words. If you do choose to quote either the text or an online source you must put “ “ around the quote and include the complete reference in (). Failure to give proper credit (considered plagiarism), or extensive cutting/pasting from published sources, will result in a grade of 0 for the assignment and jeopardize your grade for the course.

Discussion Board

A blackboard discussion forum has been set up for each of the lectures, 1-23. If you have questions during the reading, lecture or in completing the assignments, post your question on the discussion forum for that lecture. I have found that if one student has a question that often others do also and so I will use these forums to post my answers. If you have a

question, look on the discussion board first to see if someone else has already asked that question.

Student Projects

Each student will be required to select a topic in molecular genetics and present a summary review of the advancements that have occurred in the topic within the last two years. The topic of the review paper must be pre-approved by the instructor. The reviews should cover the primary published literature and not un-supported web sites. A list of all of the articles used in the review should be give in the Literature Cited section and proper citations of these references should be included in the body of the text in order to support the major concepts. I expect that the reviews will be in your own words and use few quotations. You are welcome to include figures from the articles to help in your explanations but make sure that they are properly referenced so that readers can identify the source.

Review papers will be posted to the Discussion Board and the authors will be required to answer questions from the class participants. Each student will be required to read and evaluate each review.

Exams

There will be Four exams given, each worth 100 points. Exams will be comprehensive over the material covered since the last exam. Exams must be completed in the timeframe that they are made available on Blackboard unless prior arrangements are made with the instructor. No make up exams will be given.

Daily Assignments

All students are expected to stay on the schedule provided above. Each day, an assignment will be given as part of the lecture. The assignment will be due within 48 hours of the scheduled class. For example, topics scheduled for Tuesday must have related assignments submitted by midnight on Thursday. Topics scheduled for Thursday must have related assignments submitted by midnight on Saturday. Late assignments will not be accepted unless prior arrangements are made with the instructor.

Assignments are to be submitted by email to the instructor and the email topic must include the letters B566. Hand delivered or printed assignments will not be accepted unless requested by the instructor.

Answers to assignment questions must reflect the student's understanding and should be in their own words (see **Participation** above)

Point Summary:

Exam 1 100

Exam 2 100

Exam 3 100

Exam 4 100

Daily Assignments 23 @ 10 pts each = 230

Review Project for Discussion Board 110

Review Project Evaluations, 16 @ 10 pts each = 160

Total = 900 points

Grades: A = 90-100%, B = 80-89.99%, C = 70-79.99%, D = 60-69.99%, F = 0 - 59.99%.

Policies

Academic Integrity - It is expected that each student will do his/her own work at all times and contribute equitably in all group projects.

Academic Misconduct - Dishonesty, in any form (cheating on quizzes or exams, plagiarism, copying another's assignment answers, etc.) will result in a failing grade.

Disabilities: "Students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the Office for Student Disability Services, Room 445, Potter Hall. The OFSDS telephone number is (270) 745-5004 V/TDD. Please DO NOT request accommodations directly from the professor or instructor without a letter of accommodation from the Office for Student Disability Services."

Withdrawals: If you wish to withdraw from the course you should do so by the dates mandated by the University. Be sure you are aware of these dates because credit for the course will not be changed after the university's designated time. You also cannot drop the class or Withdraw after the designated time. Be aware that it is YOUR responsibility to drop the class. Do not assume that I will do this for you.

When you have finished reading this syllabus, you must send a signed email to your instructor indicating whether or not you will abide by this syllabus and the prescribed policies.
