

BIOL 4668 – EUKARYOTIC MOLECULAR GENETICS
Spring, 2007

Professors:

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(Prior appointment by E-mail is strongly recommended for a meeting during office hours and required for any meeting outside of the office hours)

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Required textbook:

J.D.Watson, T.A. Baker, S.P. Bell, A. Gann, M. Levine, R. Losick (2004) Molecular Biology of the Gene (5th edition). Pearson / Benjamin Cummings / CSHL Press.

Additional sources:

B. Lewin (2004) Genes VIII. Pearson Prentice Hall.

Scientific reviews and research papers (to be posted on WebCT)

TENTATIVE SYLLABUS

Week 1:	01/09	Introduction / Techniques in Molecular Genetics I	Ch. 1, 20
	01/11	Techniques in Molecular Genetics II	Ch. 20
Week 2:	01/16	Techniques in Molecular Genetics III	Ch. 20
	01/18	Model Genetic Systems I	Ch. 21
Week 3:	01/23	Model Genetic Systems II	Ch. 21
	01/25	Protein Structure	Ch. 5
Week 4:	01/30	Overview of DNA and Chromatin Structure	Ch. 6, 7
	02/01	Transcription and RNA Processing I	Ch. 12, 13
Week 5:	02/06, 02/08	Transcription and RNA Processing II, III	Ch. 12, 13
Week 6:	02/13	Protein Biosynthesis	Ch. 14, 15
	02/15	EXAM I - Covers ch. 1, 5-7, 12, 13, 20, 21	
Week 7:	02/20	Protein Folding and Degradation	Outside sources
	02/22	Gene Regulation I, II	Ch. 17, 18
Week 8:	02/27	Gene Regulation III	Ch. 17, 18
	03/01	Comparative Genomics I	Ch. 19
Week 9:	03/06	Comparative Genomics II	Ch. 19
	03/08	Non-Mendelian Inheritance I	Outside sources
		HOMEWORK*	
Week 10:	03/13	Non-Mendelian Inheritance II	Outside sources
	03/15	Protein Assembly Disorders I	Outside sources
Week 11:	03/20, 03/22	SPRING BREAK	
Week 12:	03/27	Protein Assembly Disorders II	Outside sources
	03/29	DNA Replication and Repair I	Ch. 8, 9
Week 13:	04/03(tentative)	EXAM II - Covers ch. 14, 15, 17-19 and Outside sources*	
	04/05	DNA Replication and Repair II	Ch. 8, 9
Week 14:	04/10	DNA Replication and Repair III	Ch. 8, 9
	04/12	Homologous Recombination I	Ch. 10
Week 15:	04/17, 04/19	Homologous Recombination II, III	Ch. 10
Week 16:	04/24, 04/26	Transposition I, II	Ch. 11
	05/03, 8AM	FINAL EXAM – Covers ch. 8-11 and 16	

*Timing of the Homework and Exam II is tentative and can be changed; follow further announcements.

NOTE:

- 1) Only eukaryotic material is covered in each chapter, except for the cases when prokaryotic materials are used for the comparison.
- 2) Most lectures use outside sources (provided via WebCT) in addition to the textbook.
- 3) If you have previously taken BIOL 4469 (Mol. Biology) or BIOL 7668 (Euk. Mol. Genetics - graduate), you can not get additional credit for BIOL 4668.
- 4) Exam will be given only during class hours on the dates specified in the syllabus.
- 5) There will be no early finals.

Exam rules:

Students are allowed to use notes (no more than 5 pages per person, could be double-sided, handwritten or printed, stapled or clipped together; you can use only your own notes and can not ask another person for his/her notes).

Textbooks, folders, binders, notebooks, paper printouts, cell phones or laptops are not allowed.

Grading:

Each Exam – 30%

Homework – 10%

Extra points (up to 5% total) could be given for in-class activity