

## L41 2960Su/09 Principals of Biology I

### Instructor

Dr. Bonnie A. Templeton

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### Texts

A combined edition of

Ch 1-20 from:

Sadava, D., H.C. Heller, G.H. Orians, W.K. Purves and D.M. Hillis, *Life, The Science of Biology* 8<sup>th</sup> ed. Sinauer Associates, Inc. and W.H. Freeman & Co., 2007. (**S**)

Ch2,4, 28-30 from:

Berg, J.M., J.L. Tymoczko, and L. Stryer, *Biochemistry* 6<sup>th</sup> ed. W.H. Freedman & Co., 2007. (**B**)

### Texts on Reserve in the Biology Department Library

Berg, J.M., J.L. Tymoczko, and L. Stryer, *Biochemistry* 5<sup>th</sup> ed. W.H. Freedman & Co., 2002.

Griffiths, A,J,F, S.R. Wessler, R.C. Lewontin, W.M. Gelbart, D.T. Suzuki and J.H. Miller *An Introduction to Genetic Analysis*, 8<sup>th</sup> ed. W.H. Freeman & Co. 2005

Nelson, D. L. and M.M. Cox, *Lehninger, Principles of Biochemistry*, 4<sup>th</sup> ed. Freeman & Co, 2005

Alberts, B.,A. Johnson, J. Lewis, M. Raff, K. Roberts and P. Walter *The Molecular Biology of the Cell*, 5<sup>th</sup> ed. Garland Science 2008

Office Hours: After class and by appointment Tuesday and Thursday.

### Requirements

Four tests and the lab grade are equally weighted

Daily homework problems; the sum of all points earned on the daily homework problems may be substituted for your lowest test score.

Class attendance is highly recommended!!

### Schedule of Topics

June 8 Introduction to Biology  
\*Review Chemistry  
Carbon/Lipids

**S.** Ch 1  
**S.** Ch 2  
**S.** Ch 3 p38-41, 54-57

9 Carbohydrates Proteins	<b>S.</b> Ch 3 p49-54 <b>S.</b> Ch 3 p42-49 <b>B.</b> Ch 2 p25-54
10 Proteins cont. Nucleic Acids  Cells	<b>S.</b> Ch 3 p57-60; <b>B.</b> p107-112; 784-787 <b>S.</b> Ch 4
11 Cells	<b>S.</b> Ch 4
12 TEST	
15 Energy/Enzymes Enzyme kinetics	<b>S.</b> Ch 6 Berg 5. Ch 8.4-8.4.1 p200-205
16 Membranes Cation Channels	<b>S.</b> Ch 5
17 Signal Transduction Photosynthesis	<b>S.</b> Ch 15 <b>S.</b> Ch 8
18 Cellular Respiration History of Life on Earth	<b>S.</b> Ch. 7 Berg 5 Ch. 2;
19 Protein Synthesis—overview	<b>S.</b> Ch 12
22 TEST	
23 Regulation of Protein synthesis	<b>S.</b> Ch 13 p296-301; 318-324
24 RNA polymerase and transcription	<b>B.</b> Ch 29 p 821-839
25 RNA processing	<b>B.</b> Ch 29 p839-851
26 Translation: Prokaryotes	<b>B.</b> Ch 30 p857-878
29 Translation: Prokaryotes Translation: Eukaryotes	<b>B.</b> Ch 29 p879-883
30 TEST	

July	1 Chromatin & supercoiling DNA replication	<b>S.</b> Ch 11; <b>B.</b> Ch 28 p783-792 <b>S.</b> Ch 11; <b>B.</b> Ch 28 p793-804
	2 PCR & DNA sequencing	<b>S.</b> Ch 11 p250-253
	<b>3 HOLIDAY—NO CLASS</b>	
	6 Viruses; Bacterial Conjugation	<b>S.</b> Ch 13
	7 Mutagenesis & DNA repair	<b>B.</b> Ch. 28 p804-809
	8 Recombinant DNA	<b>S.</b> Ch 16 p352-364
	9 Genomics & Review	<b>S.</b> Ch 17
	10 TEST	

**Expectations:** Students are expected to attend class and read the assigned chapters. For your convenience, the lectures will be posted on the web at:

<http://nslc.wustl.edu/courses/Bio2690Su/bio2960.html>

User name: bio2960su                      password: dna

You may bring printed copies of the lectures to class to facilitate taking notes.

Washington University is committed to providing accommodations and/or services to students with documented disabilities. Students who are seeking support for a disability or a suspected disability should contact the Disability Resource Center (DRC) at 935-4062 or [drc@dosa.wustl.edu](mailto:drc@dosa.wustl.edu). The disability resource center is located in Gregg hall and is responsible for approving all accommodations for WU students.