

# Course Syllabus: BIOL 4500/6500: Summer 2017

## Cell Biology CRN 50794

**Lecture:** MTWR 8:00 – 9:25 a.m. (BC 1025),  
**Lab:** MW 9:35 – 12:25 p.m. (BC 2070)

**Instructor:** Dr. Russ Goddard, BC 2090, 249-2642

**email:** [rgoddard@valdosta.edu](mailto:rgoddard@valdosta.edu)

**Office Hours:** T: 9:30 a.m. – 12:30 p.m.

Note: All official correspondence must be sent to the above VSU email address. Dr. Goddard does not use BlazeView email and any email sent to that location will not be read so don't waste your time!

**Course Catalog Description:** BIOL 4500 Cell Biology (3-3-4). Prerequisites: BIOL 1107K, BIOL 1108K, BIOL 3200, CHEM 1211/1211L, CHEM 1212/1212L. **The organization and function of cellular structures in animal, plant, and microbial systems. Emphasis on the molecular basis of metabolism, transport, mobility, nerve conduction, and the cell cycle.**  
BIOL 6500 Cell Biology (3-3-4). Prerequisite: Admission into the graduate program or instructor permission.

**Text:** Molecular Biology of the Cell, 6e. 2015. Alberts, B., A. Johnson, J. Lewis, D. Morgan, M. Raff, K. Roberts, P. Walter. Garland Science Publishers. ISBN: 978-0-8153-4432-2 (hardcover); 978-0-8153-4464-3 (paperback). Available in the bookstore.

Publisher Web Page: <http://www.garlandscience.com/>; Click on Students tab.

Laboratory: Handouts sometimes provided.

### Grading:

**Lecture Exams** There will be four lecture exams each worth 100 points. The tentative schedule for these exams is:

Monday, 19 June 2017

Thursday, 13 July 2017

Thursday, 29 June 2017

Tuesday, 25 July 2017

The final exam period for this course is scheduled for Wednesday, July 26<sup>th</sup> from 8:00 a.m. - 10:00 a.m. Currently there are no plans to use this time period or to provide a comprehensive final exam for the course. Depending on student input, this may change so leave this time period for completing any added course assignment during the semester.

**Lab.** Lab grading will be based on attendance, punctuality, performance contribution in group activities, lab assignments, lab homework, and occasional lab quizzes. All lab assignments are expected to be sent to Dr. Goddard in electronic format unless otherwise specified.

**Attendance:** Students who miss class (lecture or laboratory) will lose points toward their final grade. Don't miss class.

**Grading:** The final grades will be based on a percentage of your cumulative points relative to the total points possible: Guaranteed grade distribution is as follows (Max. pts = 600 for BIOL 4500; 750 for BIOL 6450):

#### Guaranteed Distribution:

A = 90-100%  
B = 80-89%  
C = 70-79%  
D = 60-69%  
F = ≤ 59%

#### Points available: BIOL 4500:

Lecture Exams: 400 pts  
Lab 200  
Total: 600 pts

#### Points available: BIOL 6500:

Lecture Exams: 400 pts  
Lab 200  
Research paper 50  
Research Presentation: 50 pts  
Total: 700 pts

Currently no grad students registered.

**FERPA:** The Family Educational Rights and Privacy Act (FERPA) prohibits the posting of grades by social security number or in any manner personally identifiable to the individual student. Grades will not be posted by social security number or by name.

No grades can be given over the telephone or by email, as legal sources cite problems with positive identification by this manner, or with using a relatively public forum (email).

**Students with Disabilities:** Students requesting classroom accommodations or modifications because of a documented disability should contact the Access Office for Students with Disabilities. The phone numbers are 245-2498 (voice) and 219-1348 (tty).

It is expected that both the students and instructor will abide by the University policy on academic integrity found in the Student Code of Conduct on Page 60 of the student handbook: (<http://www.valdosta.edu/academics/academic-affairs/vp-office/academic-honesty-policies-and-procedures.php>).

The following lecture schedule should be considered tentative. I'm assuming much of the information in the "Basic Genetic Mechanisms" section of our book is covered in our required genetics course. The lecture outline for this course focusses on protein function in cells although some knowledge of genetic mechanisms is also required. Your requests (i.e. students) for specific topics may also change the organization of lectures in a fluid manner.

**Tentative Lecture and Laboratory Schedule:**

<b>Lecture:</b>				<b>Laboratory:</b>	
<b>Lecture</b>	<b>Date:</b>	<b>Topic :</b>	<b>Chapter Reading(s) - pages</b>	<b>Day(s)</b>	<b>Exercise</b>
1	7 June	Intro. / Cells and Genomes	1 - 42	7 June	Microscopy Review and Cell Size Determination
2	8 June	Cells and Genomes	1 - 42		
3	12 June	Cell Chemistry and Bioenergetics	43 - 108	12 June	Microscopy Review and Cell Size Determination
4	13 June	Energy Conversion: Mitochondria and Chloroplasts	753 - 812		
5	14 June			14 June	Phagocytosis in Tetrahymena
6	15 June	Proteins	109 - 173		
7	19 June	<b>EXAM 1</b>		19 June	Cell Fractionation
8	20 June	Analyzing Cells, Molecules, and Systems	439 – 528		
9	21 June	Visualizing Cells	529 - 564	21 June	Membrane Permeability
10	22 June	Membrane Structure	565 - 596		
11	26 June			26 June	Staining of polytene chromosomes from <i>Drosophila</i>
12	27 June	Membrane Transport of Small Molecules and the Electrical Properties of Membranes	597 – 640		
13	28 June	Cell Signaling	813 - 888	28 June	Mitochondrial Isolation and Analysis
14	29 June	<b>EXAM 2</b>			
15	3 July			3 July	Chemotaxis and Movement of the slime mold <i>Physarum polycephalum</i>
	3 July	(Mid-term)			
	4 July	Holiday; No Classes			Motility in the Green Alga, <i>Ernodesmis</i>
16	5 July	The Cytoskeleton (Actin)	889 - 962	5 July	Protein Purification
17	6 July				
18	10 July	The Cytoskeleton Microtubules and IFs	889 - 962	10 July	Quantification of Protein
19	11 July				
20	12 July	Intracellular Compartments and Protein Sorting	641 – 694	12 July	SDS-PAGE
21	13 July	<b>EXAM 3</b>	1035 - 1090		
22	17 July	Intracellular Membrane Traffic	695 - 752	17 July	SDS-PAGE
23	18 July	Cell Junctions and the Extracellular Matrix	1035 - 1090		
24	19 July	The Cell Cycle	963 – 1020	19 July	TBD
25	20 July	Development of Multicellular Organisms	1145 - 1216		
26	24 July	Cell Death	1021 - 1034	24 July	Lab Clean-Up; Required
27	25 July	Last Class Day; <b>EXAM 4</b>			
	26 July	Final Exam Period: 8:00 – 10:00 a.m. in lecture classroom	Currently not gonna happen!		