

**BIOL 1951H, Honors Biology: Cellular Processes**  
**Fall Semester 2008, Section A (CRN# 81102, 4 Credit hours)**  
**Department of Biology, College of Arts & Science, Valdosta State University**

**Lecture (BC 2022):**        **M & W 2:00 p.m. – 3:15 p.m.**

**Laboratory (BC 1085):**    **T – 8:00 - 9:50 a.m.**

**Instructor:** Dr. Brian C. Ring  
Office: BC 2092  
Office hours: **M / W** 3:30 p.m. – 4:30 p.m.  
Phone: 249-4841 (Dept. office 333-5759)  
email: bcring@valdosta.edu (**please use WebCT first**)

**Pre-Requisites:** None but reserved for students admitted to the Honors Program.

**Course Description:** An introduction to the fundamental principles of cell and molecular biology. Prokaryotic and eukaryotic development will focus on the relationship of structure and function. Cellular solutions to fundamental problems such as cell recognition, energy acquisition and conversion (metabolism), genetic transmission, and cellular reproduction will be discussed. Taught in an enriched, discussion, and project-oriented classroom environment.

**Course Objectives:** Upon completion of this course the student should be able to:

- 1) Communicate and describe life at the cellular level with a historical and contemporary perspective on humanity both in scientific curiosity and health;
- 2) Identify and discuss, among your peers, common methods and themes cells employ for motion, metabolism, gene regulation, reproduction and how multicellular life begins and maintains itself;
- 3) Demonstrate scholarly research skills through primary literature searches and written summaries related to the field of cell biology;
- 4) Develop practical laboratory knowledge and skills by guided hands-on experimentation and independent scientific investigation using the scientific method.

These objectives support all of the Honors Program Objectives (see below) and the University General Educational Outcome # 5 as listed in the VSU Undergraduate Catalogue.

**VSU University Honors Program Objectives:**

1. Effective written communication skills (including ability to use research).
2. Effective oral communication skills.
3. Effective quantitative skills.
4. The ability to analyze and synthesize a broad range of material.
5. The ability to make meaningful connections between various disciplines.
6. The ability to formulate a problem, develop a plan of action, and prove or disprove an hypothesis (or to create and produce an original work or do research).
7. The ability to take greater responsibility for own learning (demonstrate curiosity, motivation, risk-taking characteristics, and the ability to bring to bear logic and knowledge of the issue being discussed).

**Required Materials:**

**Text:** Boyce Rensberger. *Life Itself*. 1996. Oxford University Press (ISBN # 9780195108743)

**Laboratory Manual:** None. Materials will be provided by your instructor as hand-outs and may be made available by WebCT course website.

**Graded Course Components:** Your final grade will be based on your performance and participation in lecture and the laboratory as outlined below.

**Lecture/Discussion Sessions:** (350 pts, 70%) Students will be graded on their performance during lecture time based on the following criteria: **(1)** Chapter Summaries, **(2)** Quizzes, **(3)** Topic Papers, and **(4)** Participation. Students are responsible for reading the assigned material and completing the chapter summaries before coming to lecture/discussions. Chapter summaries may be collected at the beginning or end of a discussion session. Quizzes will be random and composed primarily of short answer. Two topic papers will be assigned with detailed instructions and the due dates are listed in the course outline below (Paper 1 due Sept. 29 &

Paper 2 due Dec. 3). Participation is key to the success of this course. We will use the chapter summaries as a guide to our readings and discussion of the course material, but this will not limit our discussion topics. Videos or other material related to the topic will also be presented during lecture time. Students are encouraged to critically think about cell biology as it relates to humanity and form their own questions or objective opinions to present among their peers. Cell biology relates to our everyday lives and it is important that students develop the basic knowledge of the field to contemplate throughout their life as life learners. Finally, there are **NO Assignment Make-ups**. Missed assignments are recorded as zero.

**Laboratory:** (150 pts, 30%) Students will be graded on their performance in laboratory based on two major criteria: **(1) Laboratory Reports** and **(2) Lab Project Proposal & Paper**. All lab reports are due within one week of finishing a lab, generally by the next lab session. The independent lab project proposal and paper will be described in class.

**Grade Calculation & Distribution:** Final grades will be based on a percentage of your cumulative points relative to the total points possible (e.g. 400/500 = 80% = B). See below chart.

Grade Calculation		Grade Distribution		
Category	Possible Points	Letter	Percentage	Point Range
Chapter Sums (12)	120	A	90-100%	450-500
Quiz (5)	100	B	80-89%	400-449
Topic Papers (2)	80	C	70-79%	350-399
Participation	50	D	60-69%	300-349
Lab Reports (10)	100	F	≤ 59%	≤ 299 points
Lab Project Paper	50			
<b>Total</b>	<b>500</b>			

**Notes on grading:** Students should note that a grade of "A" in this course represents an exemplary command of the material covered. To obtain this grade of excellence, it is recommended that students study daily, be prepared to participate in class discussion and laboratory sessions, and clarify with their instructor any problems regarding course information, as they arise. Additionally, the instructor may implement an overall curve based on class performance at the end of the course.

**Mid-term and Attendance:** Students will have several lecture and laboratory assignments to determine their overall grade by the Mid-Term and decide whether to withdraw at the deadline date (**10/19/2008**). Attendance in this course is mandatory and each missed lecture will result in 5 points lost from your participation grade and missed course time equivalent to greater than 20% will result in a failing grade as per University policy. Attendance may be taken at any time during the lecture or laboratory and used as an indicator of class participation as noted. Laboratories in particular are important not to miss as you will not be able to prepare your reports. If you miss more than 2 laboratory sessions you will fail this course as per University policy. If you are late, your attendance may not be acknowledged. The student is responsible for all material missed regardless of the reason for absences. In the event that a student will miss a lab, s/he should notify the instructor in writing by email and be prepared to provide documentation of the excused absence. It is the instructor's prerogative to accept the excuse or not. **ABSOLUTELY NO LECTURES OR LABORATORIES CAN BE "MADE UP."**

**Student identification:** Students should have in their possession at all times their VSU student identification card. In order to verify the identification of students officially enrolled in the course, it is the instructor's prerogative to request official student photo identification cards at any time during lecture or during exams.

**Academic Dishonesty (e.g. cheating or plagiarism):** A student cheating or plagiarizing will be penalized by receiving a zero for the assignment and will be reported to the dean of students. Refer to the Student Code of Ethics in the VSU Student Handbook.

**Privacy Act (FERPA):** The Family Educational Rights and Privacy Act (FERPA) prohibit the public posting of grades by social security number or in any manner personally identifiable to the individual student. No grades can be given by email or over the telephone, as positive identification can not be made by this manner.

**Students with Disabilities:** Students requesting classroom accommodations or modifications because of a documented disability must let me know and must also contact the Access Office for Students with Disabilities located in room 1115 Nevins Hall. The phone numbers are 245-2498 (voice) and 219-1348 (tty).

Keep track of your lecture grades here:

## TENTATIVE LECTURE & LABORATORY OUTLINE:

Week:	Date:	Topics:	Chapter:	Laboratory Topic:
<b>1</b>	Aug. 18 (M)	Course Introduction & Objectives	--	Introduction, Safety, & Writing a lab report
	Aug. 20 (W)	<b>A Particle of Life</b>	<b>1</b>	
<b>2</b>	Aug. 25 (M)	Continued	--	<b>L1: Scientific Method</b>
	Aug. 27 (W)	<b>Molecular Motors</b>	<b>2</b>	
-	Sept. 01 (M)	<b>Labor Day- No class</b>	--	<b>NO LAB</b>
<b>3</b>	Sept. 03 (W)	Continued	--	
<b>4</b>	Sept. 08 (M)	<b>Animation</b>	<b>3</b>	<b>L2: Osmosis &amp; Diffusion in Cells</b>
	Sept. 10 (W)	Continued	--	
<b>5</b>	Sept. 15 (M)	<b>The Living Room Cell</b>	<b>4</b>	<b>L3: Photosynthesis</b>
	Sept. 27 (W)	Continued	--	
<b>6</b>	Sept. 22 (M)	<b>How Genes Work</b>	<b>5</b>	<b>L4: DNA Isolation &amp; Digestion</b>
	Sept. 24 (W)	Continued	--	
<b>7</b>	Sept. 29 (M)	Continued <b>Topic Paper 1 Due</b>	--	<b>DNA Electrophoresis</b> <b>L5: Microscopy &amp; Mitosis</b>
	Oct. 01 (W)	<b>One Life Becomes Two</b>	<b>6</b>	
<b>8</b>	Oct. 06 (M)	Continued	--	<b>L6: Meiosis &amp; Fertilization</b>
	Oct. 08 (W)	<b>Two Lives Become One</b>	<b>7</b>	
	<b>Oct. 09 (R)</b>	<b>Midterm- last day to drop course</b>	--	
<b>9</b>	<b>Oct. 13 (M)</b>	<b>Fall Break- NO CLASS M &amp; T</b>	--	<b>NO LAB</b>
	Oct. 15 (W)	Continued	--	
<b>10</b>	Oct. 20 (M)	<b>Constructing A Person</b>	<b>8</b>	<b>Lab Proposal</b> Discussion & Set-up
	Oct. 22 (W)	Continued	--	
<b>11</b>	Oct. 27 (M)	Continued	--	<b>Lab Experiment</b> Cont.-
	Oct. 29 (W)	<b>Pumping Protein</b>	<b>9</b>	
<b>12</b>	Nov. 03 (M)	Continued	--	<b>L7: Muscle Cells</b>
	Nov. 05 (W)	<b>Heal Thyself</b>	<b>10</b>	
<b>13</b>	Nov. 10 (M)	<b>In Self Defense</b>	<b>11</b>	<b>L8: Immune Cells</b>
	Nov. 12 (W)	Continued	--	
<b>14</b>	Nov. 17 (M)	Continued	--	<b>L9: Cell Metabolism</b> <b>Lab Paper Due</b>
	Nov. 19 (W)	<b>Revolution</b>	<b>12</b>	
<b>15</b>	Nov. 24 (M)	Continued	--	<b>NO LAB</b>
	<b>Nov. 26 (W)</b>	<b>Thanksgiving Break- NO CLASS</b> Wed.-Fri.	--	
<b>16</b>	Dec. 01 (M)	<b>The Immortality Within</b>	<b>13</b>	<b>L10: Energy Budget &amp; Composition</b>
	Dec. 03 (W)	Continued, <b>Topic Paper 2 Due</b>		

**Note:** Lab schedule subject to change. Handouts describing each lab will be provided prior to each lab. Keep track of your lab grades using the guide below

Type	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	P1	P2	Total
Possible	10	10	10	10	10	10	10	10	10	10	10	40	<b>150</b>
Achieved													

L= Lab Report, P1= proposal, and P2= paper.