BSC-120 – Principles of Biology – Spring 2014

You are responsible for reading and understanding the contents of this syllabus.

~CONTACT INFO~

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- Use this email only, not the messaging system within MUOnline; I will not receive messages generated within MUOnline.
- Email is not texting; do not expect a response immediately. I may not respond to emails during non-work hours. I expect students to write professional emails.

Office: Science 364 Phone (304) 696-6467. I strongly prefer email.

OFFICE HOURS: 10:30am-noon Monday, Tuesday, Wednesday and Thursday. These hours are firm unless you are in a scheduled class—in which case, email me to set up an alternative time. These hours will also be posted on my office door.

LECTURE MEETINGS: Science 376 Lecture Time: M, W, F 9:00 a.m. – 9:50 a.m.

LAB MEETINGS: Science 210 Section 201: 10am-12pm Wednesday
Section 202: 12pm-2pm Wednesday
Section 203: 12pm-2pm Tuesday

~COURSE INFO~

COURSE DESCRIPTION: 4 credit hrs. This survey course introduces students to the biological principles common to all organisms, including the chemistry of life, cell biology, metabolism, heredity, and evolution through classroom lecture and laboratory activities.

Prerequisite: Minimum of 21 or better on Math ACT, *or* ≥C in MTH 121 or a higher math course

The course is intended for biology majors and pre-professional students, and will be taught at a level appropriate for these goals, meaning that it is heavily conceptual but reliant on underlying detail. On average, students need to spend 3-4 hours outside class actively studying, for every hour they spend in class.

COURSE OBJECTIVES: When you leave BSC-120, you should be able to:

- Apply the methods of science investigation –how we *do* science
- Describe and be able to predict the structure, behavior, characteristics, and function of biological macromolecules, the 'building blocks of life'

- Relate form and function at different levels of biological organization
- Explain how energy transformations occur and how energy flows through physical environments and living systems
- Describe the unity and diversity of life at the molecular and cellular levels
- Explain the transmission of genetic information through space and time
- Describe the evolutionary framework that is central to all of biology

REQUIRED COURSE MATERIALS:

1. A permanent notebook for taking notes during lecture and lab (for lecture)
2. Turning Technologies Response Card NXT: Rcxr-03 'clicker' (for lecture)
3. Text: Biology, 3rd edition by Brooker et al., 2013. (for home)
4. Software: McGraw-Hill 'Connect' access (for home) Navigate to: http://connect.mcgraw-hill.com/class/e_gillespie_spring_2014
5. BSC120 Laboratory Manual by Weinstein (for lab)
6. Short Guide to Writing in Biology by Pechenik (2013) or another edition (for lab)
7. Safety goggles (for lab)
8. Access to the course website through www.marshall.edu/muonline (also called Blackboard), where you will find various updates, announcements and materials throughout the semester. Your gradebook will be available here as well. If you cannot access the course, email me right away, because you are responsible for material posted here.

NOTE: There are different 'configurations' available at the MU bookstore for the text and Connect access. You can also purchase a text from various online sources that sell them used and purchase the Connect access directly from McGraw Hill. The important thing is to acquire these materials right away.

~EXPECTATIONS~

University education is a 'two-way street.' In other words, you (the student) and I (the lecturer) must work together in order for your experience to be successful. Your commitment to the class is critical!

My responsibility to you is to come to class prepared each and every day, to think critically about what you need to learn in this class in order to be successful biology majors, to be available to you for help during office hours, and to give you feedback about your progress in a timely manner.

Your responsibility to me is to come to class prepared each and every day, to study actively, to be responsible for your own learning process, and to address problems in a timely manner. **It is extremely difficult to pass this course if you are disengaged, attend poorly, or fail to address what you need help with on a continuing basis.**

I expect everyone to handle themselves in a professional manner in class, and I will ask that students who cannot do this leave for the day. I require that all electronic devices remain off and out of reach during lecture; if ringing phones become a habitual problem, I will ask those people to leave class. If asked to

leave for any reason, you will receive a zero on any quiz taken that day. I expect you to be professional and courteous in your email, during lecture/lab and during one-on-one contact with myself and your lab TA. If you blatantly and/or frequently disrespect any person in the lecture hall or lab, you will be asked to leave immediately and disciplinary action will be sought before you are permitted to return. In the event that you find yourself in this situation, you are responsible for all work missed.

Good Habits:

- Read ahead AND frequently review what we've already covered. *Evidence suggests that cramming is virtually always unsuccessful*.
- Take advantage of the resources provided to you: Lecture time, office hours, LA sessions, on-campus tutors (In Laidley Hall and in Science Building), and online tools associated with your textbook.
- Ask questions in class! Students who participate actively tend to do better than those who don't. Your questions tell me what you need clarified right away.
- Develop a strategy that works. Set aside proper study time and use it well. Set up a study group that is reliable and effective. Set aside time to attend LA sessions and tutoring hours.
- If you feel overwhelmed, come see me. I can't help you if I don't know that you need help. Seek help long before your exam, so that you can make necessary changes to your study habits.
- Be considerate of your classmates, your lecturer, and your lab instructor. Be on time. Respect your classmates' questions. Respect my time and effort. Stay engaged until we dismiss each day.
- Pay attention to your health and take care of yourself! Manage your physical and mental stress. Seek help before you get overwhelmed.
- In short, be actively involved in your education! We're here to help, but the person who is impacted most by your progress, and is most responsible for your progress is…..YOU. Don't waste your chance.

~GRADING INFO~

GRADING: A=100 -90; B=89-80; C=79 -70; D=69-60; F ≤59. 'Incomplete' grades will be given only if a student has completed 75% of the anticipated coursework and in extraordinary circumstances, as determined in consultation with the Department Chair and/or Dean of Students. Incomplete grades must be resolved as prescribed by the University.

Four lecture exams together constitute **55%** of total course grade. You will be tested on lecture notes, readings from the text and any other materials assigned. Please note your exam dates right away. I will not give your exam to you on a different date for reasons such as, but not limited to, a scheduled vacation or routine medical appointments. It is entirely your responsibility to plan ahead so that you are present on exam dates. No makeup exams will be permitted without an official excuse sent directly to me by the Dean of Student Affairs. Examples of university-approved excuses include documented illness or injury,

University-related travel, etc…. Approved makeup exams must be taken within five school days of returning to campus. Any makeup exams will consist of 10 essay questions.

Online Connect assignments (22, or one for each chapter we cover) will constitute an additional **10%** of your course grade. These are important 'low-risk/low-impact' assignments that guide your studying and allow you to test your mastery well in advance of exams.

Classroom closed-book 'clicker' quizzes (~20 of them) will together constitute **10%** of your course grade. These quizzes have no provision for makeup; exemption from that quiz will be granted with an official excuse from the Dean of Student Affairs only. You will not have an opportunity to view the quiz questions outside of the quiz.

The remaining **25%** of your course grade will come from your laboratory performance. You will receive a separate syllabus from your lab TA. You are expected to read and understand that syllabus.

Please be aware that I do not offer bonus work, extra credit or curves to improve your grade. Your only route to a good grade is mastery of the material.

ATTENDANCE: Attendance in all lectures is expected. You are expected to be present for the entirety of lecture; because it is extremely disruptive, you may not leave lecture early for any reason, unless you are having a medical emergency, in which case someone will escort you to the biology office. If you leave during class, any quiz grade from that day will be replaced with a zero, as though you were absent.

ACADEMIC ACCOMMODATION: Marshall University is committed to equal opportunity in education for all students, including those with physical, learning and psychological disabilities. University policy states that it is the responsibility of students with disabilities to contact the Office of Disabled Student Services (DSS) in Prichard Hall 117, phone 304-696-2271 to provide documentation of their disability. The DSS Coordinator will then send a letter to each of the student's instructors outlining the academic accommodation he/she will need to ensure equality in classroom experiences, outside assignment, testing and grading. The instructor and student will meet to discuss how the accommodation(s) requested will be provided. For more information, please visit http://www.marshall.edu/disabled

I strongly encourage you to seek assistance from these resources if you have any of these disabilities. Be aware that you must be evaluated by a qualified professional on- or off-campus prior to receiving these services. I cannot make these modifications outside the direction of the Office of Disabled Student Services.

WITHDRAWAL: If you feel that you cannot complete the course, keep the Withdrawal deadline, MAR 28, clearly in mind. You must administratively withdraw. Do not simply stop attending (you will receive an F!)

ACADEMIC DISHONESTY—Academic dishonesty will not be tolerated, and cheating will be pursued vigorously. This includes, but is not limited to, exams, in-class (clicker) quizzes, lab papers, etc… If work is intended to be done with a group, you will receive explicit instructions indicating that you have permission to exchange work with other students. Any appearance of cheating (looking around at other

people's answer sheets/clickers during exams or quizzes, being caught with an electronic device on during a quiz or exam, etc…) will result in a zero on that assignment without discussion. More blatant forms of cheating will be referred for disciplinary action. If you have any questions, please ask, rather than take a chance.

UNIVERSITY POLICIES AND PROCEDURES: Additional information can be found in the Marshall Undergraduate Catalogue at http://www.marshall.edu/wpmu/academic-affairs/?page_id=802

THE LEARNING ASSISTANT PROGRAM (http://www.marshall.edu/LAProgram) is a program that allows former successful undergraduate BSC120 students (called LAs), to assist current BSC-120 students with course material. This will be an excellent time for you to get extra review, listen to other students' questions and self-assess your preparedness. You are strongly encouraged to take advantage of this program. Each week, LAs will offer "co-seminars" to reinforce BSC-120 course content. This semester's co-seminar times will be determined by the LAs during the first week of class.

Tentative Class Schedule Spring 2014

Week #	Week of	Day	Topic	Chapter in text	LearnSmart module *due* 8am	LearnSmart module *available*
1	Jan 13	M	Course overview			2
		W	Study Strategies & Pre-test			3
		F	The Chemical Basis of Life I	2	2	
			Lab: Lab safety			
2	Jan 20	M	Martin Luther King, Jr. Day —No class			
		W	The Chemical Basis of Life II	3	3	4
		F	The Chemical Basis of Life II	3		
			No labs			
3	Jan 27	M	General Features of Cells	4	4	5
		W	General Features of Cells	4		
		F	Membrane Structure	5	5	6
			Lab: Scientific measurement			
4	Feb 3	M	Membrane Structure	5		7
		W	Energy; Enzymes; metabolism	6	6	
		F	Respiration	7	7	
			Lab: Hypothesis testing (see Brooker chapter 1)			
5	Feb 10	M	Respiration	7		8

		W	Fermentation, Secondary metabolism	7		
		F	Photosynthesis	8	8	
			Lab: Biological molecules			
6	Feb 17	M	**Exam 1 (Chapters 2-7)**			
		W	Exam discussion			
		F	Photosynthesis	8		9
			Lab: Microscope and cells			
7	Feb 24	M	Photosynthesis	8		
		W	Cell Communication	9	9	10
		F	Cell Communication	9		11
			Lab: Diffusion & Osmosis			
8	Mar 3	M	Multi-cellularity	10	10	
		W	DNA structure	11	11	12
		F	DNA replication	11		
			Lab: Experiment—Measuring Blood Glucose			
9	Mar 10	M	Gene Expression	12	12	13
		W	Gene Expression	12		
		F	Gene Regulation	13	13	14
			Lab: Enzyme kinetics			
10	Mar 17	M	Spring Break			
		W	Spring Break			
		F	Spring Break			

			No labs			
11	Mar 24	M	Gene Regulation	13		
		W	Mutation, DNA repair and Cancer	14	14	15
		F	**Exam 2 (Ch. 8-13)**			
			Lab: Column Chromatography			
12	Mar 31	M	Mitosis	15	15	16
		W	Meiosis	15		17
		F	Patterns of Inheritance I	16	16	
			Photosynthesis			
13	Apr 7	M	Patterns of Inheritance II	17	17	18
		W	Patterns of Inheritance II	17		19
		F	The Genetics of Viruses and Bacteria	18	18	
			Lab: Gene Expression & Mutation, RNAi			
14	Apr 14	M	Developmental Genetics	19	19	
		W	**Exam III (Ch. 14-18)**			21
		F	Developmental Genetics	19		22
			Lab: Mendelian genetics			
15	Apr 21	M	Genomes, Proteomes & Bioinformatics	21	21	
		W	Origin and History of Life	22	22	23
		F	Origin and History of Life	22		24
			Lab: Microevolution			
16	Apr 28	M	Evolution	23	23	

	W	Population Genetics	24	24
	F	Post-test		
		No labs		
May 9	F	**Exam IV (Ch. 19, 21-24) 8am-10am**		