

Biology of Bacteria - BIO 320 (3 credits)

Course Logistics

Instructor: Dr. Greg Colores

Lecture: Tues. and Thurs. from 11:00 am – 12:15 pm

Room: Brooks 201

Office hours: Tues. 1-3 and Wed. 2-4 in Brooks 185.

Office phone: 774-3412

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Text: *Madigan and Martinko. 2006. Brock Biology of Microorganisms. 11th Ed. Prentice Hall. (the 10th edition will be fine too).*

Prerequisite: BIO 208.

Course description:

General: This course is intended for students who have completed BIO208 (Microbiology) and are interested in learning more about the invisible world of microbes. This course is intended to be a bridge between other advanced microbiology courses at CMU such as Medical Microbiology and Microbial Ecology. Also, if you think you may be considering microbiology as a career option or a field that deals with microorganisms (medicine), this course is for you.

Lecture: The lecture portion of the course will come from your textbook. We will focus primarily on the Domain Bacteria, although we will cover the Archaea from time to time. A portion of the lecture time will be used for presentations as well.

Reading: Reading assignments in the text are listed with the topic outline. Readings and lecture will complement each other. I cannot cover every detail in lecture and will expect you to supplement lectures with certain information from the text. Try not to fall behind. I strongly suggest reading the material before each class, or at the latest, on the same day as class.

Grading:

There will be three exams and one cumulative final. Each will be worth 100 points and you may drop the lowest test score or elect not to take the final. Exams may contain short answer questions, calculations, multiple choice, fill-in-the-blank, etc. In addition to the exams, there will be a few other assignments and write ups that will constitute a portion of your grade. Finally, class participation is expected. I will keep track of your participatory efforts (asks questions, provides answers, attendance...) and if your final grade is on the border your participation may influence whether your grade is bumped up or not.

Exams and final (3 out of 4)	300
<u>Assignments</u>	<u>150</u>
Total	450

Grading Scale:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
93+	90- 92.99	87- 89.99	84- 86.99	80- 83.99	77- 79.99	74- 76.99	70- 73.99	67- 69.99	64- 66.99	60- 63.99	0- 59.99

University Policies:

Students requiring accommodations

CMU provides students with disabilities reasonable accommodation to participate in educational programs, activities or services. Students with disabilities requiring accommodation to participate in class activities or meet course requirements should first register with the office of Student Disability Services (Park Library 120, telephone #989-774-3018, TDD #2568), and then contact me as soon as possible.

Policy on academic integrity

In May 2001, the Central Michigan University Academic Senate approved the *Policy on Academic Integrity*, which applies to all university students. Copies are available on the CMU website at <http://academicssenate.cmich.edu/noncurric.htm>, and in the Academic Senate Office in room 108 of Bovee University Center. All academic work is expected to be in compliance with this policy.

Classroom civility

Each CMU student is encouraged to help create an environment during class that promotes learning, dignity, and mutual respect for everyone. Students who speak at inappropriate times, sleep in class, display inattention, take frequent breaks, interrupt the class by coming to class late, engage in loud or distracting behaviors, use **cell phones** or pagers in class, use inappropriate language, are verbally abusive, display defiance or disrespect to others, or behave aggressively toward others could be asked to leave the class and subjected to disciplinary action under *the Code of Student Rights, Responsibilities and Disciplinary Procedures*.

Detailed Information on this course is available on the course web page at:

<http://www.cst.cmich.edu/users/colorlgm/Courses/mainpage.htm>

Lecture outline (keep in mind this is a tentative outline and is subject to change)

Week	Dates	Topic	Brock chapter(s)
1	8/26, 8/28	Introduction to Bacteriology	1,2
Section 1: Cell Structure and Function			
2	9/2, 9/4	Cell membrane	4
3	9/9, 9/11	Cell walls and motility	
Section 2: Metabolism			
4	9/16, 9/18	Energy and enzymes	5
5	9/23, 9/25	Glucose catabolism and electron transport	
6	9/30, 10/2	Photosynthesis Exam I	5 (& 17)
7	10/7, 10/9	Nucleic acids - Structure and synthesis	7
8	10/14, 10/16	Synthesis of mRNA and proteins	
Section 3: Genetics			
9	10/21, 10/23	Regulation of enzymes and mRNA	8
10	10/28, 10/30	DNA mutations	10
11	11/4, 11/6	DNA repair Exam II	
12	11/11, 11/13	Recombination & genetic techniques	
Section 4: Phylogeny			
13	11/18, 11/20	Classification	11
14	11/25, 11/27	Gram negatives Thanksgiving Break – no class	12
15	12/2, 12/4	Gram positives Exam III	
16	Thur 12/11	Final exam Brooks 201 10:00 – 11:50	