

**GENERAL MICROBIOLOGY (MCB 3020-U03)**  
**SYLLABUS**  
**FALL 2018 (8/20/2018-12/6/2018)**

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Course lectures: Tuesday and Thursday 8:00 – 9:15 Ryder Business 120  
Office hours: Tuesday and Thursday 9:30-12:00 and by appointment  
Office: OE214

Text: *Brock Biology of Microorganisms*, Madigan et al., 15th Edition.

**Course description:** Introduction to the study of microorganisms including cell structure/function, physiology, diversity, ecology and pathogenicity.

**Course objectives:** To impart knowledge of the biology of microorganisms and major disciplines within the field of microbiology.

**Learning outcomes:** To gain an understanding of the field of microbiology and the environmental, healthy, and pathological roles of microorganisms.

Date	Subject	Chapter
	<b>UNIT ONE: Foundation of microbiology</b>	
Aug 21	Introduction to the course and to microbiology	1
Aug 23	Microbial cell structure & function: cell wall, surface and inclusion	2
Aug 28	Cell membrane, transporter and cell size	2,3
Aug 30	Metabolism – growth, oxidation/reduction reactions	3
Sept 4	Fermentation, aerobic respiration, reducing power and ATP; pmf and energy production	3
Sept 6	DNA replication, transcription	4
Sept 11	Translation, post-translational modification Review unit 1, chapter 1-4	4
<b>Sept 13</b>	<b>First Examination (Unit 1, Chapter 1-4)</b>	
	<b>UNIT TWO: Microbial Growth and Regulation</b>	
Sept 18	Microbial growth control	5
	Microbial regulation system (DNA-binding proteins)	6
Sept 20	Microbial regulation system (Sensing and signal transduction, (RNA-based regulation, and regulation of enzymes)	6
Sept 25	Antibiotics and microbial growth	7
Sept 27	Viruses and their replication	8

	<b>UNIT THREE: Genomics and Genetics</b>	
Oct 2	Microbial systems biology	9
Oct 4	Viral genomics, diversity	10-I-III
Oct 9	Genetics of Bacteria and Archaea	11
Oct 11	Biotechnology	12
Oct 16	Biotechnology	12
	<b>UNIT FOUR: Microbial Evolution and Diversity</b>	
Oct 18	Diversity of Microbial Bacteria	16
Oct 23	Diversity of microbial eukarya	18
	<b>UNIT FIVE: Environmental microbiology</b>	
Oct 25	Genetic analyses of microbial communities	19
Oct 30	Review Unit 2 (chapter 5-8) and Unit 3 (Ch 9-12), Unit 4 (ch 16, 18)	
<b>Nov 1</b>	<b>Second Examination (UNIT 2-5, Ch 5-12, 16,18)</b>	
Nov 6	Microbial symbioses with microbes, plants and animals	23
Nov 8	Microbial symbioses with humans	24
	Microbial infection and pathogenesis	25
	<b>UNIT SIX: Microbe-Human Interaction</b>	
Nov 13	Innate immunity	26
Nov 15	Adaptive immunity	27
Nov 20	Clinical Microbiology and immunology	28
Nov 22	Thanksgiving holiday	
Nov 27	Vectorborne diseases	31-II,33-III
Nov 29	Review (UNIT 5-6, Ch 19, 23-28, 31-II,33-III)	
Dec 4	<b>Final Examination (25% section 1-2, 75% section 3) 8:00-9:30am PG6-112</b>	

### ***Grading policy***

Non PLTL students: Your final grade will be based on the average of the three exams and your Clicker points. Each exam is 30% of your grade (for a total of 90%) and the Clicker points are the remaining 10%.

PLTL students: Your average score will be calculated as above and will count as 90% of your grade. Your PLTL grade will count for the remaining 10% of your final grade if the score is higher than Clicker points. Thus, your PLTL grade can only help you, not hurt you. **There is no extra credit.**

<i>Grading scale</i>	A	90 - 100%
	B+	88 - 89
	B	83 - 87
	B-	80 - 82
	C+	78 - 79
	C	70 - 77
	D+	68 - 69
	D	63 - 67
	D-	60 - 62
	F	59 or below

*Makeup exams:* **Makeup exams will only be given with permission from the instructor. All makeup exams will be in essay format – no exceptions.** No makeup exams will be given for Clicker.

*Academic Misconduct -* **Academic Misconduct includes stealing exams, selling exams, buying exams, copying or trading answers during exams, and any other form of cheating. The following is FIU policy:** "Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly to demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook."