MBIO 2020 General Microbiology II

Instructor: Dr. P. Dibrov

MBIO 2020 Microbiology II - SYLLABUS

Prerequisites: MBIO 1010 and CHEM 1310.

Students must have the **Lab manual** and **Course notes** (available from the UofM Bookstore).

Topics: This course is the introduction into microbial genetics. It is built around the concept of information flow in cells. Major topics include: Synthesis of nucleic acids and proteins in microbes; Chromosomal replication and bacterial growth; Transcription and translation as coupled stages of gene expression; Post-translational modifications of proteins; Regulation of transcription and translation in bacteria; Selected families of bacterial viruses, their modes of reproduction and pathogenicity; Bacteriophages and lateral gene transfer; Mutations and mechanisms of genetic homeostasis in bacteria (DNA repair systems); Modes of gene transfer in bacteria; Introduction into molecular cloning techniques.

Lab: Lab exercises are intended not just to support the lecture material, but to immerse the students in the laboratory environment and to give them an appreciation of the experimental nature of modern biology. Students will build on fundamental skills learned in the introductory lab; learn new hands-on techniques and develop problem solving skills. The laboratory projects include: mutation and DNA repair systems in bacteria, gene expression and regulation, isolation and propagation of bacteriophage, the lytic and lysogenic cycles in lambda phage, and basic modes of gene transfer.

Please note: Lab attendance is compulsory. A mark of 10 out of 20 in the lab section is required to pass the course. Lab marks are determined independently of marks obtained on the lecture midterm and final exams.

(Recommended, not required*, but still…just keep the book you used in the previous Micro course)*

Textbook: "BROCK Biology of Microorganisms", starting from 14th edition by Madigan, Martinko, Bender *et al*.

Students must have **Course notes** (app. 190 pages) that include all key figures & schemes, as well as minimal explanations and comments are available *online, (UM Learn)*

Marking Scheme:

Lectures:	20 marks (Mid-term)	~40 questions
	60 marks (Final)	~80 questions
Labs:	20 marks (10 is required to pass the course)	

* All questions in the mid-term and final exams will be multiple choice;
* The mid-term exam is *provisionally* scheduled for March 12, 10:30 - 11:20 am online, (UM Learn);
* Lab marks are determined separately from lecture mid-term and final exams.

Labs:

Instructor – Dr. Chris Rathgeber, Rm. 419 Buller Bldg.
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