Syllabus for MMG 801 – Fall 2020

Description from Course Catalog: Structural, metabolic, phylogenetic, and genomic diversity of microbes and microbial communities. Microbial ecology, evolution, and behavior. Regulation of gene expression. Microbial interactions with other microbes, animals, or plants. 4 credits.

Course objective: Review fundamental principles of microbial cell structure, chemistry, and function; physiological & metabolic diversity; genomics, phylogenetics, evolution; growth, survival, interactions, impact on Earth's chemistry, and other aspects of microorganisms using an integrated approach. This course emphasizes experimental methods to study microbes.

Instructors: Bob Hausinger (hausinge@); Sundhar Subramanian (subram52@); Janani Ravi (janani@); Yann Dufour (dufourya@); Victor DiRita (diritavi@); Rich Lenski (lenski@); Matt Schrenk (schrenkm@); Chris Contag (contagch@); Zhiyong Xi (xizy@); Elizabeth Heath-Heckman (each@); Rob Quinn (quinnrob@); Sarah Lebeis (tbd@); and Greg Bonito (bonito@).

Office hours: There are no formal office hours for the course. Students are encouraged to contact the instructors by e-mail with any questions. If necessary or helpful one-on-one Zoom meetings can be arranged to address specific items.

Time: 9:10-10:00 and 10:05-10:55 on Tuesdays and Thursdays. The course will be presented via Zoom.

Website: The syllabus, schedule, lecture notes, and additional readings are available at the Desire2Learn website (https://d2l.msu.edu/).

Book: No book is required, but a basic text in microbiology or microbial physiology is strongly recommended. *Brock Biology of Microorganisms* is widely available on campus because it is used in our undergraduate introductory microbiology courses. Students are encouraged to review the appropriate sections in whatever book they use prior to class to provide the background to the more in-depth discussions during class.

Other readings: Many instructors will post readings on-line that should be studied prior to class to allow for in depth discussion.

Grading: Each ¼ of the course will count for 100 points to be distributed among homework, quizzes, discussion participation, or exam questions as decided by each instructor, with the total course totaling to 400 points. Due to the small class size, variety of instructors, and inherent range of difficulty in questions there is no predetermined grading scale; rather, the instructors will evaluate the total accumulated points at the end of the class to determine grades. In general, the questions on exams will require short answers (e.g. design an experiment or interpret results) rather than reiterating what is stated in class.