Syllabus for MMG 801 – Fall 2019

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@); Jim Cole (colej@); Yann Dufour (dufourya@); Cecilia Martinez-Gomez (mart1754@); Rich Lenski (lenski@); Matt Schrenk (schrenkm@); Ashley Shade (shadeash@); Rob Quinn (quinnrob@); Sheng-Yang He (hes@); and Greg Bonito (bonito@).

Time and location: 9:10-10:00 and 10:05-10:55 on Tuesdays and Thursdays in 2245 BPS.

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 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).