**MICROBIOLOGY (MBIO)**

**MBIO 420 Molecular Genetics**  
**Crosslisted with:** BIOS 420, BIOS 820, VBMS 820  
**Prerequisites:** BIOS 206 and Senior standing.  
**Description:** Molecular basis of genetics. Gene structure and regulation, transposable elements, chromosome structure, DNA replication, and repair mechanisms and recombination.  
**Credit Hours:** 3  
**Max credits per semester:** 3  
**Max credits per degree:** 3  
**Format:** LEC  
**Prerequisite for:** FDST 908B  
**ACE:** ACE 10 Integrated Product

**MBIO 421 Microbial Diversity**  
**Crosslisted with:** BIOS 421, BIOS 821  
**Prerequisites:** BIOS 206 and BIOS 312 and Senior Standing  
**Description:** Diversity of microbial cell composition, structure, and function enabling movement, metabolism, symbiosis, and adaptation using bacterial, fungal, algal, and viral examples. A physiological, biochemical and molecular approach used throughout.  
**Credit Hours:** 3  
**Max credits per semester:** 3  
**Max credits per degree:** 3  
**Format:** LEC  
**ACE:** ACE 10 Integrated Product

**MBIO 440 Microbial Physiology**  
**Crosslisted with:** BIOS 440, BIOS 840, VBMS 840  
**Prerequisites:** BIOS 312 and either 313 or 314, or permission  
**Description:** Molecular approaches to the study of prokaryotic cell structure and physiology, including growth, cell division, metabolism, and alternative microbial life styles.  
**Credit Hours:** 3  
**Max credits per semester:** 3  
**Max credits per degree:** 3  
**Format:** LEC

**MBIO 443 Immunology**  
**Crosslisted with:** BIOS 443, BIOS 843, VBMS 843  
**Prerequisites:** BIOS 206 and one semester organic chemistry  
**Description:** Fundamental consideration of cellular and humoral mechanisms of immunity, the structure and function of immunoglobulins, antigen-antibody interactions; hypersensitivity; transplantation and tumor immunity; immune and autoimmune disorders.  
**Credit Hours:** 3  
**Max credits per semester:** 3  
**Max credits per degree:** 3  
**Format:** LEC  
**Prerequisite for:** VBMS 910

**MBIO 498 Independent Research**  
**Prerequisites:** LIFE 120 and 121 and permission  
**Notes:** Letter grade only. Before registering, arrangements must be made with a microbiology faculty member to reach an agreement on the scope and to determine the amount of credit for the project.  
**Description:** Independent study and laboratory or field investigation of a specific problem.  
**Credit Hours:** 1-8  
**Min credits per semester:** 1  
**Max credits per semester:** 8  
**Max credits per degree:** 8  
**Format:** IND