MICROBIOLOGY (MBIO)

MBIO 101 Introduction to the Microbiology Major
Notes: Letter grade only.
Description: Introduction to the Microbiology major by providing an overview of Microbiology as a field of science, possible career paths, and opportunities available to Microbiology majors.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded
Offered: FALL

MBIO 418 Microbial Genetics & Genomics
Crosslisted with: PLPT 418, PLPT 818
Prerequisites: BIOS 206 or PLAS 215.
Notes: BIOS 312 recommended.
Description: Inheritance, exchange, and regulation of genes in prokaryotic microorganisms: gene structure and function; gene transfer and the elements (plasmids, phages, and transposons) involved; DNA mutations, repair, and genetic analysis; genome sequencing, microbial genome databases, and global gene expression analysis.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded

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
Grading Option: Graded with Option
Prerequisite for: AGRO 963, HORT 963, PLPT 963; BIOS 945; BIOS 964, VBMS 964; 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
Grading Option: Graded with Option
ACE: ACE 10 Integrated Product

MBIO 440 Microbial Physiology
Crosslisted with: BIOS 440, BIOS 840, VBMS 840, VBMS 440
Prerequisites: BIOS 312; BIOS 313 or BIOS 314.
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
Grading Option: Graded with Option
Course and Laboratory Fee: $20

MBIO 443 Immunology
Crosslisted with: BIOS 443, BIOS 843, VBMS 843, VBMS 443
Prerequisites: BIOS 206; CHEM 251 or CHEM 255 or CHEM 261.
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
Grading Option: Graded with Option
Prerequisite for: VBMS 852; VBMS 908; VBMS 910; VBMS 948; VBMS 949

MBIO 455 Microbiology of Fermented Foods
Crosslisted with: FDST 455, FDST 855
Prerequisites: BIOS 312
Notes: On-campus students must also register for FDST 455L/855L.
Description: Physiology, biochemistry, and genetics of microorganisms important in food fermentation. How microorganisms are used in fermentation and the effects of processing and manufacturing conditions on production of fermented foods.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded with Option
Offered: SPRING

MBIO 455L Microbiology of Fermented Foods Laboratory
Crosslisted with: FDST 455L, FDST 855L
Prerequisites: FDST 405/805 and parallel FDST 455/855/MBIO 455
Description: Experiments involving the microorganisms and fermentation of foods and beverages.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded with Option
Offered: SPRING

MBIO 498 Independent Research
Prerequisites: Permission; LIFE 120 and 121.
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: 1-6
Min credits per semester: 1
Max credits per semester: 6
Max credits per degree: 12
Grading Option: Graded