BIOM 101. Careers in Microbiology. 1 Credit. (1 Lec) F
The course introduces students to educational and career opportunities in the fields of medical, molecular, ecological, and environmental microbiology. The course introduces students to the various options in the microbiology degree program. It will emphasize the differences in the options and the employment opportunities in each once a degree has been obtained.

BIOM 103N. Unseen Universe: Microbes. 3 Credits. (2 Lec, 1 Lab) F,S
Beneficial and harmful effects of microorganisms on individual health, public health, food and water quality; are relevant to an informed citizen of the 21st century. Current news topics and historical perspectives are emphasized. Laboratory exercises investigate microbial activity in our everyday world.

BIOM 107CS. Molecules of Life, 3 Credits. (3 Lec) S
Introduction to uses of biological molecules for improving health and agriculture. Gene therapy and DNA fingerprinting are discussed in relation to social/moral issues. Intent of course is to help students develop a rational approach to evaluate cost/benefits of biotechnology to society.

BIOM 250. Microbiology for Health Sciences: Infectious Diseases. 3 Credits. (3 Lec) F,S
Introduction to the world of microorganisms and the role of viral, bacterial, fungal and parasitic infectious agents in human health. Emphasis is on public health aspects of transmission, epidemiology, treatment and control of these diseases. Also host-pathogen interactions with regards to pathogenesis and host immune responses are considered.

BIOM 290R. Undergraduate Research. 1-6 Credits. (1 Ind; 12 cr max) F,S
Directed undergraduate research/creative activity which may culminate in a written work or other creative project. Course will address responsible conduct of research. May be repeated.

BIOM 291. Special Topics. 3 Credits. (1 Lab; 12 cr max) On Demand
PREREQUISITE: None required but some may be determined necessary by each offering department. Courses not required in any curriculum for which there is a particular one time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number.

BIOM 292. Independent Study. 1-4 Credits. (1-4 Ind; 6 cr max) On Demand
PREREQUISITE: Consent of instructor and approval of instructor. Directed research and study on an individual basis.

BIOM 360. General Microbiology. 5 Credits. (3 Lec, 2 Lab) S
PREREQUISITE: BIOM 160 or BIOM 260. An introduction to major topics and subdisciplines in microbiology including microbial diversity and classification, microbial anatomy and physiology, microbial genetics, microbial ecology, medical microbiology and immunology, epidemiology and public health, and biotechnology.

BIOM 400. Medical Microbiology. 3 Credits. (3 Lec) S
PREREQUISITE: BIOM 360; Recommended BIOM 410 and BIOM 435. Selected viral, bacterial and protozoan infections of man and domestic animals will be covered with an emphasis on disease process and immune responses.

BIOM 405. Host-Associated Microorganisms. 4 Credits. (3 Lec, 1 Lab) F
PREREQUISITES: BIOM 160 and CHMY 123 or BCH 380. This course will introduce students to the microbial ecosystems that colonize human and animal hosts, detailing their essential roles in host nutrition, health and development. Students will also be exposed to modern molecular techniques used to study these systems.

BIOM 410. Microbial Genetics. 3 Credits. (3 Lec) S
PREREQUISITE: BIOM 360, BCH 380. The students will become familiar with concepts in microbial genetics, including DNA replication, RNA, and protein biosynthesis. Other concepts covered in the course include bacteriophage and plasmid biology, gene regulation, mobile genetic elements, and the fundamentals of genetic engineering.

BIOM 415. Microbial Diversity, Ecology, and Evolution. 3 Credits. (3 Lec) S
Alternate years, to be offered even years.
PREREQUISITE: BIOM 360, BCH 380, or consent of instructor The diversity of prokaryotic and eukaryotic microorganisms will be explored from both classical phenotypic and contemporary genotypic perspectives. The linkage between microbial diversity, its evolutionary origins, and its ecological value will be emphasized.
BIOM 460. Infectious Diseases Ecology and Spillover. 3 Credits. (3 Lec)F
PREREQUISITES: BIOM 360 or BIOE 370 or consent of instructor. Disease Ecology is highly interdisciplinary and merges concepts from microbiology, immunology, evolution, mathematics, epidemiology, medicine, veterinary medicine, ecology, and geography. Thus this discipline is positioned to address major global health issues. Students will study questions such as: What factors, across molecular to landscape scales, must align to allow pathogens to jump from animals to humans? Why is monkeypox spillover increasing in West Africa as immunity to smallpox wanes? Why do wolves experience periodic outbreaks of distemper in Yellowstone? Why did Ebola recently spread through multiple West African countries, whereas previous outbreaks were restricted to small regions in Central Africa?

BIOM 465. Plant-Pathogen Interactions. 3 Credits. (3 Lec)S
Alternate Even Years PREREQUISITES: BIOB 160. This course is to teach students the molecular mechanisms by which plants and pathogens/insects interact during the progress of pathogenesis or resistance, the understandings of how plants recognize relatively conserved microbial patterns to active defense. Co-convened with PSPP 565.

BIOM 490R. Undergraduate Research. 1-6 Credits. (1 Ind; 12 cr max) F,S,Su
PREREQUISITE: Senior standing. Directed undergraduate research/creative activity which may culminate in a research paper, journal article, or undergraduate thesis. Course will address responsible conduct of research. May be repeated.

BIOM 491. Special Topics. 1-4 Credits. (1-4 Lec; 12 cr max) On Demand
PREREQUISITE: Course prerequisites as determined for each offering. Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand.

BIOM 492. Independent Study. 1-3 Credits. (1 Ind; 6 cr max) On Demand
PREREQUISITE: Junior standing, consent of instructor, and approval of department head. Directed research and study on an individual basis.

BIOM 494. Seminar/Workshop. 1 Credit. (1 Sem; 4 cr max) F,S
PREREQUISITE: BIOM 360 and junior standing. Senior capstone course. Topics offered at the upper division level which are not covered in regular courses. Students participate in preparing and presenting discussion material. When taken in the senior year, this course fulfills the senior capstone course requirement.

BIOM 497. Educational Methods: Microbiology. 2 Credits. (2 Lec) F,S,Su
PREREQUISITE: BIOM 431 and BIOM 432. Instruction and practice in effective teaching methods; practice in preparing laboratory materials, assisting a class and grading.

BIOM 523. Mycology for Graduates. 3 Credits. (2 Lec, 1 Lab) F
alternate even years PREREQUISITE: Basic Biology Course or equivalent. This course is co-convened with BIOM 423. The course surveys the incredible diversity of fungi, including major groups with emphasis on structures and identification. The recent explosion of knowledge on fungi in research, medicine, agriculture, biotech begins with basic mycology.
Font Notice

This document should contain certain fonts with restrictive licenses. For this draft, substitutions were made using less legally restrictive fonts. Specifically:

Times was used instead of Adobe Garamond Pro.

The editor may contact Leepfrog for a draft with the correct fonts in place.