Microbiology and Public Health — Descriptions of Courses

Microbiology and Public Health MPH

College of Human Medicine
College of Natural Science
College of Osteopathic Medicine
College of Veterinary Medicine

100. Precursory Microbiology
Winter. 2(2-0) Freshmen and Sophomores only.
Science and students of microbiology, presented in historical perspective and carried to the forefront of current research. A rigorous preview for students seriously curious about microbiology.

200. Elementary Microbiology
Fall, Winter. 4(3-3) Three terms of Natural Science. Primarily for majors outside the College of Natural Science.
Description of bacteria and related forms of microorganisms, their growth and nature, their application in industry, and their control in public health.

234. Elementary Medical Microbiology
Fall. 5(4-4) Three terms of Natural Science. Primarily for Nursing students.
Survey of immunology and microbiology with an emphasis on pathogenic microorganisms, antimicrobial agents, and laboratory diagnosis.

301. Introductory Microbiology
Fall, Spring. 3(3-0) B S 213; BCH 200.
Fundamentals of microbiology with emphasis on the comparative nature of the various groups of microorganisms, their distribution and activities.

302. Introductory Microbiology Laboratory
Fall. Spring. 1(0-4) 301 or concurrently.
Laboratory based on the subject matter of 301.

400. Bacteriology for High School Science
Summer. 4(4-4) Bachelor’s degree and teaching certificate.
Fundamental concepts, experiments, and projects useful in secondary school science courses.

400H. Honors Work
Fall, Winter, Spring, Summer. 1 to 6 credits. May re-enroll for a maximum of 12 credits. Approval of department.
Tutored reading and experimentation.

401. General Microbiology
Fall. 8(5-6) BCH 401 or 431 concurrently.
Comparative biology of microorganisms: viruses, rickettsiae, bacteria, fungi, algae, and protozoa.

402. General Microbiology Laboratory
Fall. 3(1-6) 401 or concurrently.
Laboratory based on the subject matter of 401.

406. Medical Mycology
Fall, Spring. 4(2-6) BOT 402 or approval of department. Interdepartmental with and administered by the Botany and Plant Pathology Department.
Characteristics, habits, and laboratory identification of fungal diseases infecting humans. Emphasis on laboratory techniques and morphological characteristics of the various mycenes.

413. General Virology
Winter. 3(3-0) 427 or concurrently.
Physical, chemical, and biological properties of the viruses.

414. General Virology Laboratory
Winter. 1(0-4) 413 or concurrently.
Laboratory procedures employed for cultivation and identification of viruses.

416. General Parasitology
Winter, Summer at W. K. Kellogg Biological Station. 3(3-0) B S 212.
Life history, host-parasite relationships (including physiology, immunity, immunopathology and pathology) and epidemiology of selected groups and species of protozoan, nematode, cestode and nematode parasites.

417. General Parasitology Laboratory
Winter. 2(0-4) B S 215.
Identification and life stories of representative species of major groups of animal parasites. Selected aspects of host-parasite relationships will be tested experimentally.

420. Ecology of Animal Parasites
(426.) Summer, 6 credits. B S 212 or approval of department. Given at W. K. Kellogg Biological Station. Interdepartmental with the departments of Fisheries and Wildlife, and Zoology.
Parasites of animals by protozoa, helminths and arthropods with emphasis on the interrelationships of host-parasite associations with the natural environments.

421. Microbial Physiology
Winter. 3(3-0) 401, 402.
Cell structure and function, growth and death, and metabolism of microorganisms.

422. Microbial Physiology Laboratory
Winter. 2(0-6) 421 or concurrently.
Laboratory work based upon the subject matter in 421.

423. Microbial Genetics
Spring. 3(3-0) BCH 401; ZOL 441 recommended.
Fundamental genetic concepts as exemplified in microorganisms.

424. Microbial Genetics Laboratory
Spring. 2(0-6) 423 or concurrently.
Laboratory work based upon the subject matter in 423.

425. Microbial Ecology
Summer. 6(3-3) A microbiology course or approval of department. Given at W. K. Kellogg Biological Station.
Lecture emphasizes the biological properties and diversity of naturally occurring microorganisms. The laboratory treats the analytical techniques involved in study of their metabolic activity.

427. Immunobiology
Winter. 3(3-0) B S 213; BCH 300 or 401.
Biological and biochemical mechanisms of the immune response. Emphasis is on concepts of immunity.

428. Immunobiology Laboratory
Winter. 2(0-6) 427 or concurrently.
Basic laboratory techniques in immunobiology.

429. Microbiology of Infectious Diseases
Spring. 3(3-0) 301 or 402 and 427.
Biological, immunological, pathogenicity, and medical aspects of microorganisms associated with infectious diseases of man. Methods of isolation and identification are emphasized in the laboratory.

436. Introductory Medical Parasitology
(309., 336.) Fall, 3(3-0) Primarily for Medical Technology students.
Biology of protozoan, helminth, and arthropod infections of man.

437. Introductory Medical Parasitology Laboratory
Fall. 2(4-4) or concurrently.
Laboratory diagnosis of protozoan, helminth, and arthropod infections of man.

440. Food Microbiology
Fall, Dietetics majors only. Spring, 5(3-4) 301 or 301 or 401 or approval of department. Interdepartmental with and administered by Food Science.
Major groups of microorganisms of importance to the food industry are studied with emphasis on ecological, physiological, and public health aspects.

442. Soil Microbiology
Spring. 3(3-4) 200 or 301 or 401. Interdepartmental with Soil Science.
Major groups of microorganisms of importance in soils are studied with emphasis on ecological, biochemical, and physical aspects.

444. Environmental Microbiology
Spring 3(3-4) 200 or 301 or 401. Flora, methods of testing, and purification of environmental air and water. Treatment and disposal of sewage.

IDC. Biological Membranes
For course description see Interdisciplinary Courses.

511. Medical Microbiology and Immunology
Spring. 1 to 6 credits. May re-enroll for a maximum of 6 credits. A biochemistry course. Enrollment in College of Human Medicine or approval of department.
Basic principles of microbiology (bacteriology, virology, mycology and parasitology) and immunology. Selected topics in infectious diseases relate these principles to disease in man.

512. Infectious Diseases
Fall. 4(3-3) 511, or approval of department. Interdepartmental with the Department of Medicine.
Infectious diseases of man, including biology of the causative microorganism, epidemiology, pathogenesis, host-parasite relationships, clinical and laboratory diagnosis, and clinical management.

521. Medical Microbiology and Immunology
Winter, Variable credit. May re-enroll for a maximum of 6 credits. A biochemistry course. Enrollment in College of Osteopathic Medicine or approval of department.
Basic principles of microbiology (bacteriology, virology, mycology and parasitology) and immunology. Selected topics in infectious diseases relate these principles to disease in man.
531A. Medical Microbiology: Immunology
(Spring) Winter. 2(1-2) A course in biochemistry and admission to the veterinary professional program, or approval of department.
Basic principles of immunology (immunobiology and immunochemistry) and their relation to disease in animals.

826. Ecology of Animal Parasites
Summer. 3 credits. 416, approval of department. Given at W. K. Kellogg Biological Station.
Interaction of parasitic animals (protozoa, helminthes, and arthropods) with their natural environment, including host, biotic, and physical aspects.

531B. Medical Microbiology: Bacteriology and Mycology
Winter. 4 credits. A course in biochemistry and admission to the veterinary professional program, or approval of department.
Basic principles of bacteriology and mycology and their relation to disease in animals.

531C. Medical Microbiology: Virology
Spring. 2(1-2) A course in biochemistry and admission to the veterinary professional program, or approval of department.
Basic principles of virology and their relation to disease in animals.

531D. Medical Microbiology: Parasitology
Spring. 3(2-4) Admission to the veterinary professional program, or approval of department.
Basic principles of parasitology (protozoology, helminthology, and antozoology) and their relation to disease in animals.

532. Veterinary Microbiology and Public Health
(Winter) Winter, Summer. 8(3-11) 531 or approval of department.
Biology, immunology, pathogenesis, and medical aspects of microorganisms associated with infectious diseases of animals. Epidemiology of animal diseases significant to human health.

533. Veterinary Parasitology I
Winter, Summer. 4(2-4) Veterinary Medicine students on approval of department.
Distribution, biology, and control of parasitic animals of importance to veterinary medicine.

537. Veterinary Parasitology II
Full, Spring. 4(2-6) 536 or approval of department.
Continuation of 536.

618. Infectious Disease Clerkship
Fall, Winter, Spring, Summer. 1 to 17 credits. May re-enroll for a maximum of 34 credits. H M 608 and MED 608 or H D 608. Interdepartmental with and administered by the Department of Medicine.
The clerkship emphasizes acquisition in depth of knowledge and skills essential to solution of clinical problems in infectious and immunological diseases. Integrated basic science input is afforded through relevant seminars.

800. Seminar
Fall, Winter, Spring, Summer. 1(1-0) May re-enroll for a maximum of 9 credits. Approval of department.

813. Molecular Virology
Fall. 4(4-0) Background in biochemistry, and approval of department.
Molecular nature and biochemistry of replication of bacterial and animal viruses. Emphasis is on current advances, research concepts, and the role of viruses in molecular biology research.

MILITARY SCIENCE M S

All University

041. General Military Science
Application of leadership techniques, the decision making process and stress management. Military customs and traditions. Students will concurrently enroll in a selected non-Military Science course to fulfill military professional requirements.
A. Military Traditions—M S I
Winter. 0(0-1) Approval of department.
B. Evolution of Military Leadership—M S II
Fall. 0(0-1) Approval of department or M S II standing. HT 255 concurrently.
C. Military Career Preparation—M S II
Spring. 0(0-1) Approval of department or M S II standing.
D. Advanced Camp Preparation—M S III
Fall. 0(0-1) Approval of department or M S III standing.
E. Military Staff Organization—M S IV
Fall. 0(0-1) Approval of department or M S IV standing.

121. Preview of Military Science
Fall, Winter. 1(1-0) Approval of department.
Role of the ROTC officer in the Army. Assists the student in planning a curriculum to satisfy requirements for a commission.

122. Marksmanship and Hunter Safety
Fall, Spring. 1(0-0) 121 or approval of department.
Small arms marksmanship and safety. Practical exercises on local firing range. Individual basic military marksmanship and the skills necessary to participate in a competitive or recreational shooting program.

233. Terrain Analysis and Land Navigation
Fall, Winter. 3(3-0) 121 and approval of department.
Military maps, map construction, specifications and uses. Include both a study of aerial photographs and an introduction to remote energy sensors employed by defense agencies as they relate to tactical operations.

324. Military Teaching
Fall, Winter. 4(4-3) Basic course, approval of department.
Methods of teaching manipulative skills to groups with varying educational backgrounds. Emphasis on determination of entry behavior, progress analysis, testing and test construction. Introduction to current teaching aids. Practical experience in simulated field situations is stressed during laboratory.

325. Military Management
Spring. 4(3-3) 324 or approval of department.
Task analysis approach to missions. The subject of tactics is used as a teaching vehicle for the managerial approach to the preparation and execution phases of military operations. Emphasis is placed on physical and moral leadership during the laboratory sections.

426. Military Law
Winter. 4(4-0) Approval of department.
Jurisdiction and responsibility of the Army commandant and junior leaders in the application of military justice. Implications of Army operations as related to the rules of land warfare.

427. Seminar
Spring. 1(1-0) Approval of department.
Precommissioning orientation stressing current military policies, procedures, customs and trends.

499. Independent Study in Military Science
Fall, Winter, Spring, Summer. 1 to 3 credits. May re-enroll for a maximum of 6 credits. Approval of department and juniors. Individual research and study in an area related to military science as approved and directed by the Department of Military Science.

MUSIC MUS

College of Arts and Letters

094. Band
Summer. Zero credit. Membership determined by audition.
Attendance at all rehearsals and public concerts is obligatory. See 118.