608. Hematology Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
P: MED 606. R: Open only to graduate-professional students in College of Human Medicine.
Data collection, problem solving, and management related to common hematologic disorders of children and adults.
QF: MED 608 QA: MED 609

610. Oncology Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
P: MED 608. R: Open only to graduate-professional students in College of Human Medicine.
Data collection, problem solving and management of prevalent cancers in children and adults.
QF: MED 608 QA: MED 610

611. Cardiology Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
P: MED 608. R: Open only to graduate-professional students in College of Human Medicine.
Evaluation of patients with cardiac diseases. Special diagnostic procedures including cardiac catheterization, phonocardiography, echocardiography, and electocardiography.
QF: MED 608 QA: MED 611

612. Nephrology Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
P: MED 608. R: Open only to graduate-professional students in College of Human Medicine.
QF: MED 608 QA: MED 612

613. Dermatology Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
P: MED 608. R: Open only to graduate-professional students in College of Human Medicine.
Experience in a dermatologist's office to develop clinical, observational, and diagnostic skills in dermatology.
QF: MED 608 QA: MED 613

614. Medical Chest Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
P: MED 608. R: Open only to graduate-professional students in College of Human Medicine.
QF: MED 608 QA: MED 614

615. Gastroenterology Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
P: MED 608. R: Open only to graduate-professional students in College of Human Medicine.
Experience with gastrointestinal problems in ambulatory and hospital settings. Emphasis on continuity and comprehensive care.
QF: MED 608 QA: MED 615

616. Allergy Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
P: MED 608. R: Open only to graduate-professional students in College of Human Medicine.
Ambulatory and hospital based experience to develop diagnostic skills in allergy. Review of basic therapeutic strategies related to allergic diseases.
QF: MED 608 QA: MED 616

617. Neurology Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
P: MED 608. R: Open only to graduate-professional students in College of Human Medicine.
Office and inpatient experience. Evaluation and management of neurological disease.
QF: MED 608 QA: MED 617

618. Infectious and Immunologic Diseases Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
P: MED 608. R: Open only to graduate-professional students in College of Human Medicine.
Clinical problems in infectious and immunologic diseases. Integrated basic science input is provided in seminars.
QF: MED 608 QA: MED 618

622. Endocrinology and Metabolism Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
P: MED 608. R: Open only to graduate-professional students in College of Human Medicine.
Clinical and research-oriented clerkship: endocrine diseases, electrolyte abnormalities, endocrine hypertension, or diabetes melilitis.
QF: MED 608 QA: MED 620

626. Physical Medicine and Rehabilitation Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
P: MED 608. R: Open only to graduate-professional students in College of Human Medicine.
Developing regimens for physical medicine procedures, occupational therapy and rehabilitation skills.
QF: MED 608 QA: MED 626

627. Rheumatology Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
P: MED 608. R: Open only to graduate-professional students in College of Human Medicine.
Combined ambulatory and hospital consultative clerkship for diagnostic skills in areas of rheumatic diseases.
QF: MED 608 QA: MED 627

628. Advanced Internal Medicine
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
P: MED 608. R: Open only to graduate-professional students in College of Human Medicine.
Clinical experiences in general internal medicine.
QF: MED 608 QA: MED 628

630. Emergency Medicine Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
P: MED 608. R: Open only to graduate-professional students in College of Human Medicine.
Clinical diagnosis and treatment of emergencies seen in community emergency departments.
QF: MED 608 QA: MED 510

Microbiology—Descriptions of Courses

MICROBIOLOGY

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

101. preview of Microbiology
Fall. 1(0)
R: Open only to freshmen and sophomores. Not open to students with credit in a microbiology course.
Overview of modern microbiology, emphasizing impact on society.
QA: MPH 101

205. Allied Health Microbiology Laboratory
Spring. 3(3-0)
P: CEM 141 or CEM 151.
Microbial structure and function, growth, death, and control related to medical and public health concerns.
Host-parasite relationships, immunology, action of major pathogenic groups. Commercial applications of microbiology.
Q: CEM 141

206. Allied Health Microbiology Laboratory
Spring. 1(0-2)
P: MPH 205 or concurrently.
Fundamentals of microbial techniques including microscopy, staining, aseptic technique, culture media, identification, control of disinfectants and antibiotics, and safety in the microbiology laboratory.
Q: MPH 206

301. Introductory Microbiology
Fall. 3(3-0)
P: CEM 241.
Fundamentals of microbiology including microbial structure and function, nutrition and growth, death and control, immunology, and applications of major microbial groups.
Q: CEM 241 QA: MPH 301, MPH 302

302. Introductory Microbiology Laboratory
Fall. 1(0)
P: MPH 301, BCh 461 or concurrently.
Fundamentals of Microbiology. Molecular genetics. Molecular genetics, genetics and physiology of bacteria, and environmental microbial interactions.
Q: MPH 301 QA: CEM 301, BCh 451 QA: MPH 407, MPH 421

303. Eukaryotic Cells and Viruses
Spring. 4(4-0)
P: BCh 422 or concurrently.
Q: MPH 360, BCh 453 QA: MPH 403, MPH 413

401. Prokaryotic Physiology and Genetics
Fall. 4(4-0)
P: MPH 301, BCh 461 or concurrently.
Prokaryotic cell structure and function, macromolecular synthesis and control, related metabolic pathways, and genetics of bacteria and bacteriophages.
Q: MPH 301 QA: CEM 301, BCh 450 QA: MPH 407, MPH 421

402. Eukaryotic Cells and Viruses
Spring. 4(4-0)
P: BCh 422 or concurrently.
Q: MPH 360, BCh 453 QA: MPH 403, MPH 413

408. Advanced Microbiology Laboratory
Fall. 3(0)
P: MPH 302, MPH 401 or concurrently. R: Open only to Microbiology majors.
Microbiological techniques and procedures to study physiology and genetics of bacteria and bacteriophages. Collection and critical assessment of quantitative data and written communication of results.
Q: MPH 300 QA: MPH 304, MPH 306

425. Microbial Ecology
Spring. 3(0) Interdepartmental with Crop and Soil Sciences.
P: MPH 501.
Microbial population and community interactions. Microbial activities in natural systems, including associations with plants or animals.
Q: MPH 301 or MPH 302 QA: MPH 426, MPH 426A
MILITARY SCIENCE MS

Department of Military Science Office of the Provost

101. Leadership: The Military Profession
Fall, Spring, Summer. 1(1-1) Analysis of military profession from several academic perspectives. Technical, ethical, and personal ramifications of officership. Introduction to military leadership. Lab introduces military skills. QA: MS 101, MS 102

102. Leadership: Land Navigation
Fall, Spring. 1(1-1) Military topographic and special maps: intersection, resection, modified resection, and polar coordinates. Tactical operation overlays. Preview of small unit leader’s role in the Army. Lab: use of lensatic compass. QA: MS 102, MS 202

201. Leadership Assessment Program, the Military Leader
Fall, Spring, Summer. 1(1-1) Individual leadership development using standardized assessment technology. Administration, personal relations, and decision making. Military writing and professional obligations. Lab includes rappelling and marksmanship. QA: MS 109 QA: MS 201, MS 202

202. Leadership: First Aid/Fitness Training
Fall, Spring, Summer. 1(1-1) Emergency first aid and including casualty evaluation, lifesaving care, CPR, and environmental injury prevention. Leader’s role in implementing Army Physical Fitness Program. Individual and group fitness programs. Lab hands on leadership training. QA: MS 201 QA: MS 102, MS 201

301. Leadership: Command and Control Communication
Fall, Spring, Summer. 3(3-2) P: MS 202. Wire and radio communications for tactical operations. Encryption/decryption, use of codes, and electronic warfare. Theories and models of behavioral sciences for leadership. Lab emphasizes communication skills. QP: MS 202 QA: MS 301, MS 302

302. Leadership: Small Unit Tactics
Fall, Spring, Summer. 3(3-2) P: MS 301. Military topographic and special maps: intersection, resection, modified resection, and polar coordinates. Tactical operation overlays. Preview of small unit leader’s role in the Army. Lab: use of lensatic compass. QA: MS 301 QA: MS 302, MS 303

401. Leadership: Management
Fall, Spring, Summer. 3(3-2) P: MS 302. Army training personnel administration and logistics systems, and the leader’s role as a trainer and effective manager. Oral and written communication. Leadership assessment and development. Lab: practical experience in unit administration. QA: MS 302 QA: MS 401, MS 402

402. Military Law, Ethics and Professionalism
Spring, Summer. 2(2-3) P: MS 401. Military legal system. Application of military justice. Fundamental values and principles of conduct in the profession of arms. Development of subordinates and the role of noncommissioned officers. Lab includes leadership development assessment. QA: MS 401 QA: MS 402, MS 403

490. Independent Study in Military Science
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course. R: Open only to juniors and seniors. Approval of department. Individual research in areas related to military science. QA: MS 499

MUSIC MUS

School of Music
College of Arts and Letters

112. Chamber Music
Fall, Spring. 1(0-2) A student may earn a maximum of 10 credits in all enrollments for this course. R: Audition required. Rehearsal and performance of broad range of chamber music literature. QA: MUS 112

114. Marching Band
Fall, 10-9 A student may earn a maximum of 6 credits in all enrollments for this course. R: Audition required. Rehearsal and performance of marching band literature at football games. QA: MUS 114A

115. Spartan Brass
Spring, 10-2 A student may earn a maximum of 6 credits in all enrollments for this course. R: Audition required. Rehearsal and performance of broad range of brass literature at basketball and hockey games. QA: MUS 115B

116. Campus Band
Fall, Spring, 10-2 A student may earn a maximum of 10 credits in all enrollments for this course. Rehearsal and performance of broad range of band literature chosen from baroque period to the present. QA: MUS 116F

117. Concert Band
Fall, Spring, 10-3 A student may earn a maximum of 10 credits in all enrollments for this course. R: Audition required. Rehearsal and performance of broad range of wind literature from various historical periods and styles. QA: MUS 117C

118. Wind Symphony
Fall, Spring, 10-5 A student may earn a maximum of 10 credits in all enrollments for this course. R: Audition required. Rehearsal and performance of broad range of wind literature from various historical periods and styles. QA: MUS 118E

120. Symphony Orchestra
Fall, Spring, 10-5 A student may earn a maximum of 10 credits in all enrollments for this course. R: Audition required. Rehearsal and performance of symphonic and operatic repertoire. QA: MUS 120A

123. Collegiate Choir
Fall, Spring. 10-3 A student may earn a maximum of 10 credits in all enrollments for this course. R: Audition required. Rehearsal and performance of representative chamber works of baroque, classical, and contemporary composers. QA: MUS 123B

124. Choral Union
Fall, Spring. 10-2 A student may earn a maximum of 10 credits in all enrollments for this course. R: Audition required. University and community chorus. One evening rehearsal per week, culminating in performance of a major work with orchestra. QA: MUS 191

125. Glee Club, Men and Women
Fall, Spring. 10-3 A student may earn a maximum of 10 credits in all enrollments for this course. Rehearsal and performance of broad range of choral literature chosen from medieval period to the present. QA: MUS 192

126. State Singers
Fall, Spring. 10-4 A student may earn a maximum of 10 credits in all enrollments for this course. R: Audition required. Mixed choir performing music from all periods. QA: MUS 190

127. University Chorale
Fall, Spring. 10-4 A student may earn a maximum of 10 credits in all enrollments for this course. R: Audition required. Mixed choir for experienced singers performing representative literature from all periods. QA: MUS 193

129. Percussion Ensemble
Fall, Spring. 10-3 A student may earn a maximum of 10 credits in all enrollments for this course. R: Audition required. Rehearsal and performance of representative works for percussion and mallet ensembles. QA: MUS 112