828. Bacterial Diversity Laboratory
Fall of odd-numbered years. 2(0-6)
P: MIC 827 or concurrently. R: Open only to graduate students in the Colleges of Human Medicine, Osteopathic Medicine, Veterinary Medicine, Natural Science, and Agriculture and Natural Resources.
Isolation and identification of representative groups of bacteria.

829. Advanced Microbial Ecology
Fall of even-numbered years. 3(3-0) Interdepartmental with Crop and Soil Sciences.
Functional roles of microorganisms, their population dynamics and interactions, and their mechanisms of evolutionary change in natural communities, laboratory experiments, and mathematical models.

833. Microbial Genetics
Fall. 3(3-0)
R: Open only to graduate students in the Colleges of Human Medicine, Osteopathic Medicine, Veterinary Medicine, Natural Science, and Agriculture and Natural Resources.
Gene structure and function. Genetic regulation at classical and molecular levels in prokaryotes and lower eukaryotes.

835. Eukaryotic Molecular Genetics
Spring. 3(3-0) Interdepartmental with Genetics.
P: BCH 462, ZOL 341. R: Open only to graduate students in the colleges of Agriculture and Natural Resources, Engineering, Human Medicine, Natural Science, Osteopathic Medicine, and Veterinary Medicine.
Gene structure and function in animals, plants, and fungi. Basic aspects of modern human genetics and the genetic basis for disease. Molecular genetic analyses. Eukaryotic modeling systems.

841. Soil Microbiology
Spring of even-numbered years. 3(3-0) Interdepartmental with Crop and Soil Sciences.
P: MIC 425.
Ecology, physiology, and biochemistry of microorganisms indigenous to soil.

851. Immunology
Fall of odd-numbered years. 3(3-0)
R: Open only to graduate students in the Colleges of Human Medicine, Osteopathic Medicine, Veterinary Medicine, Natural Science, and Agriculture and Natural Resources.
Functional aspects of immune responses; synthesis, structure, and function of effector molecules; cell-cell interactions; current advances and research techniques.

890. Special Problems in Microbiology
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course.
R: Open only to graduate students in the Colleges of Human Medicine, Osteopathic Medicine, Veterinary Medicine, Natural Science, and Agriculture and Natural Resources. Approval of department.
Individualized laboratory or library research.

892. Seminar
Fall, Spring. 1(1-0) A student may earn a maximum of 6 credits in all enrollments for this course.
R: Open only to graduate students in College of Agriculture and Natural Resources, College of Engineering, College of Human Medicine, College of Natural Science, College of Osteopathic Medicine, or College of Veterinary Medicine.
Student review and presentation of selected topics in microbiology and public health.

899. Master's Thesis Research
Fall, Spring, Summer. 1 to 12 credits. A student may earn a maximum of 24 credits in all enrollments for this course.
R: Open only to graduate students in Microbiology and Public Health.

991. Topics in Microbiology
Fall, Spring. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course.
Topics are selected from traditional subdisciplines such as bacteriology, virology, cell biology, and immunology or from transecting subdisciplines such as microbial genetics, physiology, molecular biology and ecology.

999. Doctoral Dissertation Research
Fall, Spring, Summer. 1 to 12 credits. A student may earn a maximum of 99 credits in all enrollments for this course.
R: Open only to graduate students in Microbiology and Public Health.

MILITARY SCIENCE MS

Department of Military Science
Office of the Provost

101. Leadership: The Military Profession
Fall, Spring. 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.

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.

201. Leadership Assessment Program, the Military Leader
Fall, Spring. 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.

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

301. Leadership: Command and Control Communication
Fall, Spring. 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.

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

401. Leadership: Management
Fall, Spring. 3(2-3)
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.

402. Military Law, Ethics and Professionalism
Spring. 3(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.

490. Independent Study in Military Science
Fall, Spring. 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.

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.

114. Marching Band
Fall. 1(0-9) 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 marching band literature at football games.

115. Spartan Brass
Spring. 1(0-2) 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.

116. Campus Band
Fall, Spring. 1(0-3) 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.

117. Concert Band
Fall, Spring. 1(0-3) 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.

118. Wind Symphony
Fall, Spring. 1(0-6) 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 periods and styles.

120. Symphony Orchestra
Fall, Spring. 1(0-6) 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.