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

531B. Medical Microbiology: Bacteriology and Mycology
Spring. 2(1-2) 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. 2(2-4) Admission to the veterinary professional program, or approval of department.
Basic principles of parasitology (protozoology, helminthology, and entomology) and their relation to disease in animals.

532. Veterinary Microbiology and Public Health
Winter, Summer. 8(5-11) or approval of department.
Biological, immunological, pathogenic, and medical aspects of microorganisms associated with infectious diseases of animals. Epidemiology of animal diseases significant to human health.

536. Veterinary Parasitology I
Winter. 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
Fall, Spring. 4(3-6) 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 602 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(1-6) 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.

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

827. Immunochemistry
Spring. 3(3-0) 437; 435, BCH 452, or ZOL 441, and GEM 383 recommended. Structure and reactivity of antigens and antibodies; synthesis of immunoglobulins. Emphasis is on current advances and research concepts.

828. Immunochemistry Laboratory
Spring. 2(0-6) 427; 827 or concurrently.
Laboratory based partially on subject matter of 827. Experimental techniques used in immunological assays and immune systems.

900. Topics in Microbiology
Fall, Winter, Spring, Summer. 2(2-0) May re-enroll if different topic is taken. Approval of department.
Topics will be selected from taxonomic subdisciplines such as bacteriology, virology, protoschology, mycology, algology, and helminthology; and from intersecting disciplines such as microbial genetics, microbiology, physiology, and ecology.

901. Experimental Microbiology
Fall, Winter, Spring, Summer. 3(0-9) May re-enroll for a maximum of 9 credits. Approval of department.
Experiments, demonstrations, and discussions of current research programs in various areas of microbiology.

999. Research
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

MILITARY SCIENCE

All University

041. General Military Science
Application of leadership techniques, the decision making process and military planning. 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. HST 205 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.
The role of the ROTC officer in the Army. Assist 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 ranges. Individual basic military marksmanship and the skills necessary to participate in a competitive or recreational shooting program.

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

324. Military Teaching
Fall, Winter. 4(4-0) 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(3-2) 324 or approval of department.
Tact 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 commander: and junior leader 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 Junior. 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 obligatory. See 118.
100. Theory Review
Fall, Summer. 2(3-1) For majors who need the review.
Basic course in fundamentals and ear training.

112. Chamber Music
Fall, Winter, Spring, Summer. 1(1-0)
May re-enroll for a maximum of 18 credits.
Approval of department.
Performance of works for small ensembles.

118. Band
A. MARCHING BAND
Fall, 1 credit. May re-enroll for credit. Membership determined by audition.
The Marching Band participates at football games.
B. SPARTAN Brass
Winter, 1 credit. May re-enroll for credit. Membership determined by audition.
The Spartan Brass participates at basketball games.
C. CONCERT BAND
Fall, Winter, Spring, 1 credit. May re-enroll for credit. Membership determined by audition.
Public appearances are scheduled on campus each term.
D. SYMPHONIC BAND
Fall, Winter, Spring, 1 credit. May re-enroll for credit. Membership determined by audition. A high level of achievement in performing ability is required.
Concerts are scheduled both on and off campus.
E. WIND ENSEMBLE
Fall, Winter, Spring, 1 credit. May re-enroll for a maximum of 12 credits. Membership determined by audition. The highest level of performance is required.
Full range of wind literature is performed. Public concerts are presented both on and off campus.

133. Orchestra
Fall, Winter, Spring. 1(0-5) May re-enroll for a maximum of 12 credits. Membership determined by audition. Standard overtures and symphonies studied and publicly performed. Attendance at all rehearsals and public concerts obligatory.

135. Music in Elementary Education
Fall, Winter, Spring, Summer. 4(3-3)
Elementary education majors.
Basis, scope and sequence of music instruction in the elementary schools with an introduction to basic knowledge and skills used in elementary school music.

141. Class Instruments and Voice
Fall, 1(0-2) Knowledge of notation.
Music majors, or approval of department.
Class instruction in piano, voice, violin, cello, clarinet, and cornet.

142. Class Instruments and Voice
Winter. 1(0-2) 141.
Continuation of 141.

143. Class Instruments and Voice
Spring. 1(0-2) 142.
Continuation of 142.

145. Music Foundations I
Fall, Winter, Spring. 3(3-0) 135
and approval of department.
Development of understanding and knowledge of music fundamentals, ear training, music reading, rhythm, and other basic music perceptions. Designed specifically for elementary classroom teachers who elect a strong concentration in music.

147. Elementary Piano
Fall, Winter, Spring. 2(2-2) 145
or approval of department. Elementary Education and Physical Education students may participate.
Beginning class piano instruction. Development of ability to play the three principal chords in all keys and to harmonize simple melodies using these chords. Transposition of simple melodies. Ability to play melodies and rhythms suitable for use in lower intermediate grades or in recreation work.

148. Elementary Piano
Winter, Spring, 2(2-2) 147. Elementary Education majors.
Continuation of 147.

150. Keyboard Instruments and Harp
Fall, Winter, Spring, Summer. 1 to 4 credits.
May re-enroll for a maximum of 24 credits. Audition required.
Instruction in piano, organ, and harp.

151. Voice
Fall, Winter, Spring, Summer. 1 to 4 credits.
May re-enroll for a maximum of 24 credits. Audition required.

152. Stringed Instruments
Fall, Winter, Spring, Summer. 1 to 4 credits.
May re-enroll for a maximum of 24 credits. Audition required.

153. Woodwind Instruments
Fall, Winter, Spring, Summer. 1 to 4 credits.
May re-enroll for a maximum of 24 credits. Audition required.

154. Brass Instruments
Fall, Winter, Spring, Summer. 1 to 4 credits.
May re-enroll for a maximum of 24 credits. Audition required.

155. Percussion
Fall, Winter, Spring, Summer. 1 to 4 credits.
May re-enroll for a maximum of 24 credits. Audition required.

156. Basic Harmony
Fall. 3(3-1) 180
Fundamentals of basic musicianship: notation, clefs, scales, intervals, triads, meter, rhythm, and tonality. The analysis and writing of dissonant harmony in the style of the Bach 4-part chorale.

158. Basic Harmony
Winter. 3(0-1) 180.
Continuation of 180.

182. Basic Harmony
Spring. 3(3-1) 181.
Continuation of 181.

183. Aural Harmony
Fall, Winter, Spring, Summer. 1(0-2)
180 concurrently.
The aural counterpart of basic harmony. Drill in harmonic, melodic and rhythmic dictation. Sight singing and keyboard harmony.

184. Aural Harmony
Fall, Winter, Spring. Summer. 1(0-2)
183, 181 concurrently.

185. Aural Harmony
Fall, Winter, Spring. 1(0-2)
184, 182 concurrently.

190. State Singers
Fall, Winter, Spring. 1(0-4) May re-enroll for a maximum of 12 credits. Membership determined by audition; ability to sight read. Four hours of rehearsals a week. Attendance at all rehearsals and public performance obligatory.

191. Chorus
Fall, Winter, Spring, Summer. 1(0-2/4)
May re-enroll for a maximum of 12 credits.
Two and one-half hours of rehearsals per week. Attendance at all rehearsals and public concerts obligatory.

192. Glee Club, Men and Women
Fall, Winter, Spring. 1(0-2) May re-enroll for a maximum of 12 credits. Membership determined by audition.
Three hours of rehearsals a week. Attendance at all rehearsals and public concerts obligatory.

193. University Chorale
Fall, Winter, Spring. 1(0-4) Audition.
Choral ensemble designed primarily for graduate and upper class undergraduate students. Representative literature for chamber chorale with emphasis on Renaissance, Baroque, and contemporary composers. Limited to 25 students.

195. Jazz Laboratory Band
Fall, Winter, Spring, Summer. 1(0-4) May re-enroll for a maximum of 12 credits. Membership determined by audition.
Practical experience in playing music in the jazz idiom. Techniques of rehearsing a stage band. Playing of student arrangements; performance of jazz composition and arrangements in concert.

200H. Honors Work
Fall, Winter, Spring. Summer. 1 to 16 credits. May re-enroll for a maximum of 19 credits. Approval of department.

224. History of Music
Fall. 3(3-0) 183.
Music from ancient Greece through Romantic and Gothic periods, concluding with the Renaissance. Greek theory and "ethos"; age of plainsong: development of polyphony; instruments peculiar to period under question.

225. History of Music
Winter. 3(3-0) 224.
Baroque and classical periods. Special attention to fugue, opera, oratorio, sonata, and symphony. Analysis of characteristic works.

226. History of Music
Spring. 3(3-0) 225.
Romantic period, impressionism, and contemporary trends. Continuation of development of form, melody, rhythm, and tonality. Final examination is comprehensive, covering 224, 225 and 226.
244. Advanced Class Piano
Fall, Winter, Spring, Summer. 2(2-0) 3(3-1) Non-majors. Advanced music study of the piano. Course for non-majors. Continuation of 242. May re-enroll for credit. Follows in sequence. Course is designed for non-majors and offers study of advanced techniques in piano. Continuation of 242.

245. Course in Special Education
Fall, Winter, Spring, Summer. 2(2-0) 3(3-1) Special education majors. Methods of teaching music in special education programs.

246. Fundamentals of Music
Fall, Winter, Spring. 3(3-1) Non-majors. Fundamentals of music to develop understanding and knowledge of scales and modes, key signatures, chord structures, chord progressions and non-harmonic tones.

247. Introduction to Music Literature I
Fall, Winter, Spring, Summer. 3(3-0) Non-majors. An introduction to music in the Western tradition. The elements of musical expression and the techniques of musical analysis in connection with representative musical masterpieces of the Middle Ages, the Renaissance, the Baroque, the period of Classicism and Romanticism, and the twentieth century.

248. Introduction to Music Literature II
Fall, Winter, Spring, Summer. 3(3-0) Non-majors. Continuation of 247.

249. Music in Special Education
Fall, Winter, Spring, Summer. 3(3-0) 135 Special education majors. Methods of teaching music in special education programs.

250. Advanced Aural Harmony
Fall, Winter, Spring, Summer. 185; 280 concurrently. Aural counterpart of advanced harmony. Drill in harmonic, melodic, and rhythmic dictation. Sight singing and keyboard harmony.

251. Advanced Aural Harmony
Fall, Winter, Spring, Summer. 185; 280 concurrently. Continuation of 281.

252. Advanced Aural Harmony
Fall, Winter, Spring, Summer. 185; 280 concurrently. Continuation of 281.

253. Advanced Aural Harmony
Fall, Winter, Spring, Summer. 185; 280 concurrently. Continuation of 281.

254. Advanced Aural Harmony
Fall, Winter, Spring, Summer. 185; 280 concurrently. Continuation of 281.

255. Advanced Aural Harmony
Fall, Winter, Spring, Summer. 185; 280 concurrently. Continuation of 281.

256. Opera Workshop
Fall, Winter, Spring. 1 to 2 credits. May re-enroll for a maximum of 6 credits. Approval of department. Repertoire, rehearsing, dictation, interpretation. Study and performance of entire operas and excerpts from the standard and contemporary repertoire. Production of operas (with Speech and Theatre Department). TV opera productions on Station WKAR.

257. Church Service Playing
Fall, Winter, Spring. 2(2-0) 3(3-1) Non-majors. Techniques of playing accompaniment on organ; choosing organ and hymn playing, modulation, and ways to help unify service.

258. Music Workshop
Summer. 1 to 6 credits. May re-enroll for a maximum of 12 credits. Approval of department.

259. Carillon
Fall, Winter, Spring, Summer. 2 credits. May re-enroll for credit. 183; 6 terms of piano and approval of department. Carillon playing technique, style and interpretation, arranging, adapting composition and improvisation. Survey of ensemble combinations with other instruments. Mechanical aspects of the instrument, bell foundries, literature and composers.

260. Composing and Arranging for Jazz Ensembles
Fall, Winter, Spring, Summer. 3(2-2) 3(3-1) Non-majors. Techniques of composition and arranging in jazz idioms for various instrumental and/or vocal ensembles. Analytical studies of scores, recorded examples and published stage band materials. Writing for films and commercials.

261. Ensemble and Conducting
Fall, Winter, Spring. 3(1-4) 185 or approval of department. Principles of conducting correlated with application in ensemble of vocal and instrumental class instruction. Use of vocal and instrumental ensemble literature suitable for school use. Individual conducting stressed.

262. Ensemble and Conducting
Winter, Spring. 3(1-4) 335. Continuation of 335.
355. Percussion
Fall, Winter, Spring, Summer. 1 to 4 credits. May re-enroll for a maximum of 16 credits. Six terms of 155 or approval of department. Continuation of 155.

356. Sight Reading at the Piano
Fall, Winter, Spring, Summer. 1 to 2 credits. May re-enroll for a maximum of 8 credits. Three terms of piano. Establish principles of good sight reading, accompanying and free keyboard harmonization.

358. Studies in Style and Form
Fall, Summer. 2(2-1) 282. Analysis and creative writing of technical and structural practices in music of various periods, with special emphasis on the twentieth century.

359. Studies in Style and Form
Winter, Summer. 2(2-1) 282. Analysis and creative writing of technical and structural practices in music of various periods, with special emphasis on the twentieth century.

360. Orchestration
Fall, Summer. 2(2-0) 282. Modern orchestral resources and scoring for various instrumental groups.

361. Orchestration
Winter, Summer. 2(2-0) 282. Technique of writing tonal counterpoint in two, three, and four parts.

362. Counterpoint
Fall, Summer. 2(2-0) 282. Technique of writing tonal counterpoint in two, three, and four parts.

363. Counterpoint
Winter, Summer. 2(2-0) 282. Continuation of 362.

364. Counterpoint
Spring, Summer. 2(2-0) 282. Continuation of 363.

403. Music Literature for Children
Fall, Winter, Spring, Summer. 3(3-0) 346, or ED 327R or 327P. Appropriate musical materials for both performance and listening instruction in elementary and secondary schools. Particular emphasis on the music of culturally different peoples.

404. Opera
Fall, Winter, Spring, Summer. 3(3-0) 346, or ED 327R or 327P. Six terms of voice or approval of department. History of opera from 1600 to the present.

405. Oratorio
Fall, Winter, Spring, Summer. 3(3-0) 346, or ED 327R or 327P. Six terms of voice or approval of department. History of oratorio from 1600 to the present.

406. Renaissance Music
Fall. 2 credits. 182 or approval of department.

407. 16th Century Music
Fall. 2 credits. 182 or approval of department.

408. Keyboard Music, Seventeenth Through Eighteenth Centuries
Fall of even-numbered years. 2 credits. 182 or approval of department.

409. German Lieder
Fall of odd-numbered years. 2 credits. 182 or approval of department.

410. Organ Literature to 1700
Fall of odd-numbered years. 2 credits. 182 or approval of department.

411. Baroque Music
Winter. 2 credits. 182 or approval of department.

412. Twentieth Century Music, European
Winter. 2 credits. 182 or approval of department.

413. Piano Music, Nineteenth Century
Winter of odd-numbered years. 2 credits. 182 or approval of department.

414. French-Italian Art Song
Winter of even-numbered years. 2 credits. 182 or approval of department.

415. Organ Literature From 1700 to 1900
Winter of even-numbered years. 2 credits. 182 or approval of department.

416. Classical Music
Spring. 2 credits. 182 or approval of department.

417. Twentieth Century Music, American
Spring. 2 credits. 182 or approval of department.

418. Piano Music, Twentieth Century
Spring of odd-numbered years. 2 credits. 182 or approval of department.

419. English-American Art Song
Spring of even-numbered years. 2 credits. 182 or approval of department.

420. Honors Course in Music Literature
Spring. 2(2-0) 226 and approval of department. A tutorial class. Primary emphasis on instrumental and vocal music 1750-1900, but work may be directed towards the student's special field of interest.

421. Music and Worship
Fall. 3(3-0) 226 or approval of department. Relationship of music and liturgy to Christian worship. Traditional liturgies and forms of service of the Christian churches with emphasis on function and place of music in worship.

422. Choral Repertoire for the Church
Spring. 3(3-0) 226 or approval of department. Choral literature for church choirs; emphasis on motets, anthems, responses, and materials for both youth and adult choirs.

423. Preparatory Musicology
Fall. 3(3-0) 226, 222. A seminar dealing with research in various fields of musicology, including ethno-musicology.

424. Honors Course in Music Literature
Spring. 3(3-0) 424. Selected topics in music history from the ancient Greeks to 1600.

425. Band Materials

426. Advanced Conducting
Fall. 2(2-0) 434. Continuation of 425. Techniques and analysis through study of orchestral and choral works.

427. Advanced Conducting
Spring. 2(2-0) 434. Approval of department. Continuation of 426.
438. Brass and Woodwind Techniques  
Spring, Summer. 3(2-1) 470.  
Senior music majors.  
Materials and contemporary pedagogical practices of group wind instrumental instruction.

440. Fundamentals of Electronic Music  
Fall, Summer. 2(2-0) 382 or approval of department.  
Instruction in the use of the Moog designed synthesizer, mixer and recorders.

441. Fundamentals of Electronic Music  
Winter, Summer. 2(2-0) 440 or approval of department.  
Supervised use of the Moog synthesizer.

442. Creative Composition in Electronic Music  
Fall, Winter, Spring, Summer. Variable credit. May re-enroll for maximum of 8 credits. 441 or approval of department.  
Assigned use of the Electronic Music Studio.

450. Recreational Music  
Spring, Summer of odd-numbered years. 2(2-0) Majors.  
Organization and administration of a community music program for adults; community chorus, orchestra, and bands. Non-symphonic instruments and their use in recreation. Summer camp and playground music. Recreational music as it is organized and used by industries.

462. Studio Teaching and Observation  
Fall, Winter. 2(1-2) 347, 348, 349.  
Supervised studio teaching in classes and private lessons plus one-hour seminar each week.

463. Studio Teaching and Observation  
Winter. 2(1-2) 462.  
Continuation of 462.

464. Studio Teaching and Observation  
Spring. 2(1-2) 463.  
Continuation of 463.

465. Practicum: Sacred Music  
Fall, Winter, Spring. 3(0-6) May re-enroll for a maximum of 6 credits. 314, 336, 348.  
Supervised experience in all phases of sacred music by assisting at adult and junior choir rehearsals and church services, service planning, preparation and performance.

470. Influence of Music on Behavior  
Fall. 3(3-0) Nine credits of psychology or approval of department.  
Study of the physiological and psychological effects of music on behavior of music to health. Experimental studies, related philosophical and psychological theory will be reviewed.

471. Music Therapy Techniques  
Winter. 3(3-0) 470.  
Survey of procedures in music therapy; investigation of the use of music as a tool in treatment of mentally ill, mentally and physically handicapped; introduction to hospital organization.

472. Music Therapy Techniques  
Spring. 3(3-0) 471.  
Continuation of 471.

480. Advanced Studies in Style and Form  
Fall. 2(3-1) 380, 381, 382.  
Continuation of 382.

481. Advanced Studies in Style and Form  
Winter. 2(2-1) 480.  
Continuation of 480.

482. Advanced Studies in Style and Form  
Spring. 2(3-1) 481.  
Continuation of 481.

483. Composition  
Fall, Winter, Spring, Summer. 2(2-0) May re-enroll for a maximum of 6 credits. 283 or approval of department.  
Guided projects in creative writing.

486. Psychology of Music  
Fall, Summer. 3(3-0) Approval of department. Interdepartmental with and administered by the Psychology Department.  
Musical behavior with emphasis on psychological aspects of perception, learning, affective response, and ability. Emphasis on social and cultural influences in forming musical tastes, including mass media music.

487. Psychology of Music  
Winter, Summer. 3(3-0) PSY 486. Interdepartmental with and administered by the Psychology Department.  
Basic research concepts and experimental methods in psychology of music research. Practical training in conducting experimental research of musical behavior.

490. Independent Study: Special Problems in Music Research  
Fall, Winter, Spring. 1 to 4 credits. May re-enroll for credit. Seniors and approval of department.  
Individual problems in music research.

495. Opera Workshop  
Fall, Winter, Spring. 1 to 2 credits. May re-enroll for a maximum of 6 credits.  
Approval of department.  
Practical experience in performance and production of opera and opera scenes.

802. Seminar in History of Music  
Summer. 4(3-0)  
Critical study in depth of music literature and performance practices within historical perspectives.

803. Seminar in Music Education  
Fall, Summer. 3(3-0) Approval of department.  
Consideration of the historical and philosophical basis for music instruction in education.

804. Seminar in Music Learning  
Winter, Summer. 3(3-0) Approval of department.  
Detailed analysis of the conditions of music learning for teachers of music including consideration of perception, maturation and concept formation.

805. Seminar in Music Curriculum  
Spring, Summer. 3(3-0) Approval of department.  
Development of goals, objectives, learning sequence and evaluative techniques for music learning at all instructional levels.

812. Research Problems in Music  
Fall, Winter, Spring, Summer. Variable credit.

813. Chamber Music  
Fall, Winter, Spring, Summer. 1(1-0) May re-enroll for a maximum of 6 credits. Approval of department.  
Performance of works for small ensembles.

815. Seminar in Chamber Music: 15th Century  
Fall, Summer. 2(2-0) Approval of department.  
Intensive study of selected chamber music works of the 15th century.

826. Seminar in Chamber Music: 19th Century  
Winter, Summer. 2(2-0) Approval of department.  
Intensive study of selected chamber music works of the 19th century.

821. Symphony Orchestra  
Spring, Summer. 2(2-0) Approval of department.  
Intensive study of selected chamber music works of the 20th century.

826. Music Workshop  
Summer. 1 to 6 credits. May re-enroll for a maximum of 6 credits. Approval of department.

824. Research Methods and Materials  
Fall, Winter, Summer. 3(3-0)  
A critical examination of encyclopedias, indexes, and other aids to research.

825. Acoustics for Musicians  
Spring, Summer of even-numbered years. 3(3-0)  
Classical theory of sound, stressing its application to musical instruments and the voice.

830. Sixteenth Century Counterpoint  
Fall of even-numbered years, Summer. 3(3-0) 452 or approval of department.  
Study and writing of counterpoint based upon the works of Orlando Lasso and Palestrina.

831. Sixteenth Century Counterpoint  
Winter of odd-numbered years, Summer. 3(3-0) 830.  
Continuation of 830.

832. Sixteenth Century Counterpoint  
Summer of odd-numbered years, Summer. 3(3-0) 831.  
Continuation of 831 to include a study of madrigal counterpoint.

834. Seminar in Composition  
Fall, Winter, Spring. 3(3-0) May re-enroll for credit. 482.

843. Pedagogy of Theory  
(843.) Fall, Summer. 3(3-0) Approval of department.  
Current literature in the field of music theory and approaches to theory-pedagogy.

844. Pedagogy of Theory  
(844.) Winter, Summer. 3(3-0) Approval of department.  
Continuation of 843 with emphasis upon new instructional media, and upon methods and materials in ear training and sight singing.
845. Pedagogy of Theory
Spring, Summer. 3(3-0) Approval of department. Music theory treatises and pedagogical techniques of historical importance.

850. Applied Music
Fall, Winter, Spring. 3 credits. May re-enroll for credit.

852. Choral Technique and Materials
Spring, Summer. 3(3-0) Completion of undergraduate program in music education. Advanced course for further development of choral proficiency. Demonstrations of choral techniques, conducting by students, examination and evaluation of new materials.

860. Problems in Analysis
Fall, Winter, Spring, Summer. 4(4-0) May re-enroll for a maximum of 8 credits. Approval of department.

880. Materials of Music
Fall, Winter, Spring, Summer. 1 to 4 credits. 880. Continuation of 881. Correlation of the areas of music theory as a basis for the study of 19th and 20th century music.

881. Materials of Music
Fall, Winter, Spring, Summer. 1 to 4 credits. 880. Continuation of 880.

882. Materials of Music
Fall, Winter, Spring, Summer. 1 to 4 credits. 881. Continuation of 881.

899. Research
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

903. Proseminar in Music Education
Fall, Winter, Spring, Summer. 3(3-0) May re-enroll for a maximum of 9 credits. Approval of department. Consideration of problems of music teaching and learning with readings from aesthetics, psychology, human growth, and education.

915. Medieval Music
Fall. 3(0-0) Investigation of various developments in European music to middle of fifteenth century. Some attention given to Gregorian chant as well as to various types of secular monody, but greater stress is laid on the forms and styles of polyphonic music.

916. Renaissance Music
Winter. 3(0-0) Investigation of developments in European music from 1450 to 1600, tracing developments in both sacred and secular music.

917. Music of the Seventeenth Century
Spring. 3(3-0) Instrumental and vocal music of Early Baroque period.

924. Seminar in Musicology
Fall, Winter, Spring. 3 credits. May re-enroll for credit. Approval of department.

954. Music Supervision
Summer of even-numbered years. 3(3-0) Completion of undergraduate program in Music Education.

955. Current Tendencies in Music Education
Summer of odd-numbered years. 3(3-0) Completion of undergraduate program in Music Education.

956. Advanced Research Techniques in Music
Spring, Summer. 3(3-0) Approval of department. Application of behavioral research to music including development and validation of original data gathering devices.

960. Analytical Studies in Music Literature
Fall, Summer. 3(3-0) 382 and two years of music literature or approval of department. Melodic, formal, contrapuntal and harmonic analysis of music from plainsong to contemporary music.

961. Analytical Studies in Music Literature
Winter, Summer. 3(3-0) 960. Continuation of 960.

962. Analytical Studies in Music Literature
Spring, Summer. 3(3-0) 961. Continuation of 961.

970. Contrapuntal Techniques
Fall of odd-numbered years, Summer. 3(3-0) 452 or approval of department. Advanced contrapuntal practice from the sixteenth century to the present.

971. Contrapuntal Techniques
Winter of even-numbered years, Summer. 3(3-0) 971. Continuation of 970.

972. Contrapuntal Techniques
Spring of even-numbered years, Summer. 3(3-0) 971. Continuation of 971.

999. Research
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

NATURAL RESOURCES NR

College of Agriculture and Natural Resources

202. Soils and Man's Environment
Winter. 3(3-0) Interdepartmental with the College of Agriculture and Natural Resources. Use of soil and water resources in a technological society as it relates to environmental quality. Nature of pollution problems and their possible solutions. Food production and world population.

220. Plants and Their Environment
Winter. 3(3-0) Interdepartmental with and administered by the Forestry Department. Fundamental ecological relationships between various climatic, edaphic and biotic environmental factors of the region and plant response, including structure, function and evaluation of species.

275. Exploring International Agriculture
Spring. 3(3-0) Interdepartmental with and administered by Agriculture.

350. Leadership Development for Agriculture and Natural Resources
Spring, Winter, Fall, Summer. 3(3-0) May re-enroll for a maximum of 8 credits. Approval of department. Interdepartmental with and administered by Agriculture.

399. Agriculture Internship
Fall, Winter, Spring, Summer. Zero to 10 credits. [10 credits] Interdepartmental with and administered by Agriculture.

425. Agriculture and Natural Resources Seminar
Spring. 2(0-0) Interdepartmental with and administered by Agriculture.

435. Pest Management I: Pesticide Chemistry and Application Systems for Plant Protection
Fall. 3(3-0) Interdepartmental with and administered by Agriculture.

436. Pest Management II: Biological Systems for Plant Protection
Winter. 3(3-0) ENY 430, BOT 405, HRT 405 or CSC 405. Interdepartmental with Agriculture and the College of Natural Science. Designed to integrate knowledge and improve ability in arriving at pest management decisions of varying complexity involving the fields of agronomy, wildlife, entomology, and plant pathology.

*See page A-2 item 3.