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.

826. Ecology of Animal Parasites
Summer. 3 credits. 418, approval of department. Given at W. E. Kellogg Biological Station.
Interaction of parasite animals (protozoa, helminths, and arthropods) with their natural environment, including host, biotic, and physical aspects.

827. Immunology
Spring. 3(3-0) 427; BCH 452, or ZOL 441, and CEM 383 recommended.
Structure and function of antigens and antibodies; synthesis of immunoglobulins. Emphasis is on current advances and research concepts.

828. Immunology 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.

890. Special Problems in Microbiology
Fall, Winter, Spring, Summer. 2 to 6 credits. May re-enroll for a maximum of 12 credits. Approval of department.

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

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 substances such as bacteriology, virology, protozoology, mycology, algae, and helminthology; and from transacting disciplines such as microbial genetics, immunology, 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 M S
All University

041. General Military Science
Application of leadership techniques, the decision making process and staff 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. IST 255 concurrently.
C. Military Career Preparation-M S III
Spring. 0(0-1) Approval of department or M S III standing.
D. Advanced Camp Preparation-M S IV
Fall. 0(0-1) Approval of department or M S IV 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, Spring, Summer. 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 ranges. Individual basic military marksmanship and the skills necessary to participate in a competitive or recreational shooting program.

253. Terrain Analysis and Land Navigation
Winter, Spring. 3(3-0) 121 and approval of department.
Military maps, map construction, specifications and uses. Includes both a study of aerial photographs and an introduction to remote sensor technology. Students experience in simulated field situations is stressed during laboratory.

324. Military Teaching
Fall, Winter, 4(4-2) 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 tasks 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 command; 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 branches.

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

100. Theory Review
Fall, Summer. 2(2-1) For majors who need theory 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(3-2)
Elementary education majors.
Basic 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.
Descriptions — Music of Courses

145. Music Foundations I
Fall, Winter, Spring. 3(3-0) 135 credits. Fundamentals of music fundamentals; ear training, music reading, rhythm, and other basic music perceptions. Designated specifically for elementary classroom teachers who elect a strong concentration in music.

147. Elementary Piano
Fall, Winter, Spring. 3(3-2) 145 credits. Development of understanding and knowledge of music fundamentals; ear training, music reading, rhythm, and other basic music perceptions. Designated specifically for elementary classroom teachers who elect a strong concentration in music.

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

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

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

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

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

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

156. Basic Harmony
Fall. 3(3-1) 150 credits. Fundamentals of basic musicianship: notation, clefs, scales, intervals, triads, mode, rhythm, and tonality. The analysis and writing of harmonies, melodies, and techniques through the style of the Bach 4-part chorale.

157. Basic Harmony
Winter. 3(3-1) 150 credits. Continuation of 156.

158. Basic Harmony
Spring. 3(3-1) 151 credits. Continuation of 157.

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

160. Aural Harmony
Fall, Winter, Spring. 1(0-2) 181 credits. Continuation of 159.

161. Aural Harmony
Fall, Winter, Spring. 1(0-2) 182 credits. Continuation of 160.

162. Aural Harmony
Fall, Winter, Spring. 1(0-2) 183 credits. Continuation of 161.

163. Aural Harmony
Fall, Winter, Spring. 1(0-2) 184 credits. Continuation of 162.

164. Aural Harmony
Fall, Winter, Spring. 1(0-2) 185 credits. Continuation of 163.

165. Aural Harmony
Fall, Winter, Spring. 1(0-2) 186 credits. Continuation of 164.

166. Aural Harmony
Fall, Winter, Spring. 1(0-2) 187 credits. Continuation of 165.

167. Aural Harmony
Fall, Winter, Spring. 1(0-2) 188 credits. Continuation of 166.

168. Aural Harmony
Fall, Winter, Spring. 1(0-2) 189 credits. Continuation of 167.

169. Aural Harmony
Fall, Winter, Spring. 1(0-2) 190 credits. Continuation of 168.

170. Aural Harmony
Fall, Winter, Spring. 1(0-2) 191 credits. Continuation of 169.

171. Aural Harmony
Fall, Winter, Spring. 1(0-2) 192 credits. Continuation of 170.

172. Aural Harmony
Fall, Winter, Spring. 1(0-2) 193 credits. Continuation of 171.

173. Aural Harmony
Fall, Winter, Spring. 1(0-2) 194 credits. Continuation of 172.

174. Aural Harmony
Fall, Winter, Spring. 1(0-2) 195 credits. Continuation of 173.

175. Aural Harmony
Fall, Winter, Spring. 1(0-2) 196 credits. Continuation of 174.

176. Aural Harmony
Fall, Winter, Spring. 1(0-2) 197 credits. Continuation of 175.

177. Aural Harmony
Fall, Winter, Spring. 1(0-2) 198 credits. Continuation of 176.

178. Aural Harmony
Fall, Winter, Spring. 1(0-2) 199 credits. Continuation of 177.

179. Aural Harmony
Fall, Winter, Spring. 1(0-2) 200 credits. Continuation of 178.

180. Aural Harmony
Fall, Winter, Spring. 1(0-2) 201 credits. Continuation of 179.

181. Aural Harmony
Fall, Winter, Spring. 1(0-2) 202 credits. Continuation of 180.

182. Aural Harmony
Fall, Winter, Spring. 1(0-2) 203 credits. Continuation of 181.

183. Aural Harmony
Fall, Winter, Spring. 1(0-2) 204 credits. Continuation of 182.

184. Aural Harmony
Fall, Winter, Spring. 1(0-2) 205 credits. Continuation of 183.

185. Aural Harmony
Fall, Winter, Spring. 1(0-2) 206 credits. Continuation of 184.

186. Aural Harmony
Fall, Winter, Spring. 1(0-2) 207 credits. Continuation of 185.

187. Aural Harmony
Fall, Winter, Spring. 1(0-2) 208 credits. Continuation of 186.

188. Aural Harmony
Fall, Winter, Spring. 1(0-2) 209 credits. Continuation of 187.

189. Aural Harmony
Fall, Winter, Spring. 1(0-2) 210 credits. Continuation of 188.

190. Aural Harmony
Fall, Winter, Spring. 1(0-2) 211 credits. Continuation of 189.

191. Aural Harmony
Fall, Winter, Spring. 1(0-2) 212 credits. Continuation of 190.

192. Aural Harmony
Fall, Winter, Spring. 1(0-2) 213 credits. Continuation of 191.

193. Aural Harmony
Fall, Winter, Spring. 1(0-2) 214 credits. Continuation of 192.

194. Aural Harmony
Fall, Winter, Spring. 1(0-2) 215 credits. Continuation of 193.

195. Aural Harmony
Fall, Winter, Spring. 1(0-2) 216 credits. Continuation of 194.

196. Aural Harmony
Fall, Winter, Spring. 1(0-2) 217 credits. Continuation of 195.

197. Aural Harmony
Fall, Winter, Spring. 1(0-2) 218 credits. Continuation of 196.

198. Aural Harmony
Fall, Winter, Spring. 1(0-2) 219 credits. Continuation of 197.

199. Aural Harmony
Fall, Winter, Spring. 1(0-2) 220 credits. Continuation of 198.

200. Aural Harmony
Fall, Winter, Spring. 1(0-2) 221 credits. Continuation of 199.

201. Aural Harmony
Fall, Winter, Spring. 1(0-2) 222 credits. Continuation of 200.

202. Aural Harmony
Fall, Winter, Spring. 1(0-2) 223 credits. Continuation of 201.

203. Aural Harmony
Fall, Winter, Spring. 1(0-2) 224 credits. Continuation of 202.

204. Aural Harmony
Fall, Winter, Spring. 1(0-2) 225 credits. Continuation of 203.

205. Aural Harmony
Fall, Winter, Spring. 1(0-2) 226 credits. Continuation of 204.

206. Aural Harmony
Fall, Winter, Spring. 1(0-2) 227 credits. Continuation of 205.

207. Aural Harmony
Fall, Winter, Spring. 1(0-2) 228 credits. Continuation of 206.

208. Aural Harmony
Fall, Winter, Spring. 1(0-2) 229 credits. Continuation of 207.

209. Aural Harmony
Fall, Winter, Spring. 1(0-2) 230 credits. Continuation of 208.

210. Aural Harmony
Fall, Winter, Spring. 1(0-2) 231 credits. Continuation of 209.
283. Advanced Aural Harmony
Fall, Winter, Spring, Summer. 1(0-2)
185; 280 concurrently.
Aural counterpart of advanced harmony. Drill
in harmonies, melodies, and rhythmic dictation. Sight
singing and keyboard harmony.

284. Advanced Aural Harmony
Fall, Winter, Spring, Summer. 1(0-2)
283; 281 concurrently.

285. Advanced Aural Harmony
Fall, Winter, Spring, Summer. 1(0-2)
284; 282 concurrently.

285. Opera Workshop
Fall, Winter, Spring. 1 to 2 credits.
May re-enroll for a maximum of 6 credits.
Approval of department.
Repertoire coaching, dictation, interpretation.
Study and performance of entire operas and
operettas. Methods of teaching voice or instruments.
Study of appropriate teaching literature.

314. Church Service Playing
Fall, Winter, Spring, Summer. 2(2-0)
May re-enroll for a maximum of 6 credits. Three
terms of pipe organ.
Instruction in adapting piano and orchestral
accompaniment to organ; choosing organ and
choir repertoire appropriate to church season;
lyric playing, modulation, and ways to help
unity of service.

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

323. Carillon
Fall, Winter, Spring, Summer. 2 credits.
May re-enroll for credit. 182; 6 terms of piano
and approval of department.
Carillon playing technique, style and interpreta-
tion, arranging, adapting composition and
improvisation. Survey of ensemble combinations
with other instruments. Mechanical aspects of
the instrument and bell foundries, literature and
composer.

334. Composing and Arranging for
Jazz Ensembles
Fall, Winter, Spring, Summer. 3(2-3)
May re-enroll for a maximum of 9 credits.
182; approval of department.
Techniques of composition and arranging in jazz
idiom for various instrumental and/or vocal
ensembles. Analytical studies of scores, recorded
examples and published stage band materials.
Writing for films and commercials.

335. Ensemble and Conducting
Fall, Spring. 3(1-4) 185 or approval
of department.
Principles of conducting correlated with appli-
cation in ensemble of vocal and instrumental
class instruction. Survey of vocal and instrumen-
tal ensemble literature suitable for school use.
Individual conducting assumed.

336. Ensemble and Conducting
Winter. 3(1-4) 335.
Continuation of 335.

340. Class Instruments
Fall, Winter, Spring, Summer. 1(0-2)
May re-enroll for credit. Majors.
Study for one term of instruments not included
among basic instruments. Not more than two
may be studied at same time. Class instruction
in viola, string bass, flute, oboe, bassoon, French
horn, trombone, and percussion.

345. Teaching Music in the
Elementary School I
Fall, Winter, Spring, Summer. 3(3-0)
Approval of department.
Procedures and program of music instruction in
the elementary school. Special emphasis on in-
structional problems of early elementary chil-
dren.

346. Teaching Music in the
Elementary School II
Winter. Spring. 3(3-0) 345 and approval
of department.
Continuation of 345 with emphasis on upper
elementary music. Approaches to music reading,
harmonization and analytical listening.

347. Methods and Literature
Winter. 2(1-2) Six terms of study on applied instru-
ment or voice, or approval of department.
Methods of teaching voice or instruments. Study
of appropriate teaching literature.

350. Keyboard Instruments and
Harp
Fall, Winter, Spring, Summer. 1 to 4
credits.
May re-enroll for a maximum of 24
credits. Six terms of 150 or approval of
department.
Continuation of 150.

351. Voice
Fall, Winter, Spring, Summer. 1 to 4
credits.
May re-enroll for a maximum of 24
credits. Six terms of 151 or approval of
department.
Continuation of 151.

352. Stringed Instruments
Fall, Winter, Spring, Summer. 1 to 4
credits.
May re-enroll for a maximum of 24
credits. Six terms of 152 or approval of
department.
Continuation of 152.

353. Woodwind Instruments
Fall, Winter, Spring, Summer. 1 to 4
credits.
May re-enroll for a maximum of 24
credits. Six terms of 153 or approval of
department.
Continuation of 153.

354. Brass Instruments
Fall, Winter, Spring, Summer. 1 to 4
credits.
May re-enroll for a maximum of 24
credits. Six terms of 154 or approval of
department.
Continuation of 154.

355. Percussion
Fall, Winter, Spring, Summer. 1 to 4
credits.
May re-enroll for a maximum of 24
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 6
credits. Three terms of piano.
Establish principles of good sight reading, ac-
companying and free keyboard harmonization.

358. 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.

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

361. Orchestration
Spring, Summer. 2(2-0) 282.
Continuation of 362.

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

378. Counterpoint
Winter, Summer. 2(2-0) 356.
Continuation of 358.

385. Counterpoint
Spring, Summer. 2(2-0) 387.
Continuation of 387.

400. Clinical Training in Music
Therapy
Fall, Winter, Spring, Summer. 1 to 18
credits. May re-enroll for a maximum of
16 credits. Music Therapy majors.
Six months internship in an accredited neuro-
psychiatric hospital.

400H. Honors Work
Fall, Winter, Spring, Summer. 1 to 16
credits. May re-enroll for a maximum of
16 credits. Approval of department.

403. Music Literature for Children
Fall, Winter, Spring, Summer. 3(3-0)
346, or ED 357R or 327P.
Appropriate musical materials for both perfor-
manse and listening instruction in elementary and
secondary schools. Focus emphasis on the
music of culturally different peoples.

411. Opera
Winter of odd-numbered years. 2(1-9)
Six terms of voice or approval of department.
History of opera from 1600 to the present.
412. Oratorio (Fall of even-numbered years. Summer.)
2(1-2) Six terms of voice or approval of department.
History of oratorio from 1600 to the present.

415A. Renaissance Music (Fall.)
2 credits. 182 or approval of department.

415B. Nineteenth Century Music (Fall.)
2 credits. 182 or approval of department.

415C. Keyboard Music, Seventeenth through Eighteenth Centuries (Fall of even-numbered years.)
2 credits. 182 or approval of department.

415E. German Lieder (Fall of odd-numbered years.)
2 credits. 182 or approval of department.

415F. Organ Literature to 1700 (Fall of odd-numbered years.)
2 credits. 182 or approval of department.

416A. Baroque Music (Winter.)
2 credits. 182 or approval of department.

416B. Twentieth Century Music, European (Winter.)
2 credits. 182 or approval of department.

416C. Piano Music, Nineteenth Century (Winter of odd-numbered years.)
2 credits. 182 or approval of department.

416E. French-Italian Art Song (Winter of even-numbered years.)
2 credits. 182 or approval of department.

416F. Organ Literature From 1700 to 1900 (Winter of even-numbered years.)
2 credits. 182 or approval of department.

417A. Classical Music (Spring.)
2 credits. 182 or approval of department.

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

417C. Piano Music, Twentieth Century (Spring of odd-numbered years.)
2 credits. 182 or approval of department.

417E. English-American Art Song (Spring of even-numbered years.)
2 credits. 182 or approval of department.

417F. Organ Literature From 1900 to Present (Spring of even-numbered years.)
2 credits. 182 or approval of department.

418H. Honors Course in Music Literature (Fall.)
2(2-0) 226 and approval of department.

419H. Honors Course in Music Literature (Winter.)
2(2-0) 226 and approval of department.
Continuation of 418H.

420H. Honors Course in Music Literature (Spring.)
2(2-0) 226 and approval of department.
Continuation of 419H.

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. Hymnology (Winter.)
3(3-0) 226 or approval of department.
Greek and Latin hymns, canticles, and transition from psalmody into hymnody. Hymns and tunes studied with emphasis on their natural place in church year. Special attention to anthem settings of hymns and adaptation of traditional melodies, especially Gregorian.

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

424. Preparatory Musicology (Fall.)
3(3-0) 228, 282.
A seminar dealing with research in various fields of musicology, including ethnomusicology.

425. Preparatory Musicology (Winter, Summer.)
3(3-0) 424.
Selected topics in music history from the ancient Greeks to 1600.

Analysis and performance of literature suitable for school bands.

435. Advanced Conducting (Spring, Summer.) 2(2-0) Approval of department.
Continuation of 434.

438. Brass and Woodwind Techniques (Spring, Summer.) 3(1-2) 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 a maximum of 6 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, orchestras, and bands. Non-symphonic instruments and their use in recreation. Summer camp and playground music. Recreational music as it is organized and used by industry.

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

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

464. Studio Teaching and Observation (Spring.)
2(1-2) 465.
Continuation of 463.

465. Practicum: Sacred Music (Fall, Winter, Spring.) 3(0-6) May re-enroll for a maximum of 6 credits. 314, 336, 346.
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; relation 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 rise 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(2-1) 390, 391, 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(2-1) 481.
Continuation of 481.

483. Composition (Fall, Winter, Spring.) 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 Department of Psychology.  
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(2-2) PSY 486. Interdepartmental with and administered by the Department of Psychology.  
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, Summer. 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(5-0)  
Critical study in depth of music literature and performance practices within historical perspective.  
803. Seminar in Music Education  
Fall, Winter. 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: 18th Century  
Fall, Summer. 2(2-0) Approval of department.  
Intensive study of selected chamber music works of the 18th century.  
816. 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.  
817. Seminar in Chamber Music: 20th Century  
Spring, Summer. 3(3-0) Approval of department.  
Intensive study of selected chamber music works of the 20th century.  
820. 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(0-0)  
A critical examination of encyclopedias, indices, and other aids to research.  
825. Acoustics for Musicians  
Spring, Summer. 3(0-0)  
Classical theory of sound, stressing its application to musical instruments and the human voice.  
830. Sixteenth Century Counterpoint  
Fall of even-numbered years. Summer. 3(3-0) 482 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.  
834. Seminar in Composition  
Fall, Winter, Spring, Summer. 3(3-0) May re-enroll for credit. 482.  
843. Pedagogy of Theory  
(Spring.) 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  
(Winter.) Winter, Summer. 3(3-0) Approval of department.  
Continuation of 843 with emphasis upon new instructional media, and upon methods and materials in our training and sight singing.  
845. Pedagogy of Theory  
(Spring.) Spring, Summer. 3(3-0) Approval of department.  
Music theory treatises and pedagogical practices of historical importance.  
850. Applied Music  
Fall, Winter, Spring, Summer. 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 6 credits. Approval of department.  
An application of analytical procedures to school music repertoire.  
880. Materials of Music  
Fall, Winter, Spring, Summer. 1 to 4 credits.  
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.  
Continuation of 880.  
882. Materials of Music  
Fall, Winter, Spring, Summer. 1 to 4 credits.  
Continuation of 881.  
899. Research  
Fall, Winter, Spring, Summer. Variable credit. Approval of department.  
903. Proseminar in Music Education  
Fall, Winter, Spring. 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 aesthetic, psychology, human growth, and education.  
915. Medieval Music  
Fall. 3(3-0)  
Investigation of various 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  
Winter of even-numbered years. 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.
NATURAL RESOURCES N R

College of Agriculture and Natural Resources

202. Soils and Man's Environment
Winter. 3(3-0) Interdepartmental with the departments of Crop and Soil Sciences, Resource Development, and Fisheries and Wildlife and administered by the Department of Crop and Soil Sciences.

220. Plants and Their Environment
Winter. 3(3-0) Interdepartmental with and administered by the Department of Forestry.

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

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

390. Agriculture Internship
Fall, Winter, Spring, Summer. Zero to 10 credits. 10 credits for seniors and approval of department. Interdepartmental with and administered by Agriculture.

425. Agriculture and Natural Resources Seminar
Spring. 1. Interdepartmental with and administered by Agriculture.

435. Pest Management I: Pesticide Chemistry and Application Systems for Plant Protection
Fall. 3(3-4) CEM 132. Interdepartmental with Agriculture and the College of Natural Science. Administered by the College of Natural Science.

436. Pest Management II: Biological Systems for Plant Protection
Winter. 3(3-0) ENT 430, BOT 405, HRT 408 or CE 405. Interdepartmental with Agriculture and the College of Natural Science. Administered by the College of Natural Science.

437. Pest Management III: Systems Management for Plant Protection
Spring. 4(3-8) NSC 435 and 436, FSM 200 or CS 301, Interdepartmental with Agriculture and the College of Natural Science. Administered by the College of Natural Science.

450. Natural Resource Administration
Fall, Spring. 4(4-0). Interdepartmental with the departments of Fisheries and Wildlife, Forestry, Park and Recreation Resources and Natural Resource Development. Administered by the Department of Forestry.

455. Natural Resource Economics
Winter. 4(4-0) 450 or approval of department. Interdepartmental with the department of Fisheries and Wildlife, Forestry, Park and Recreation Resources and Resource Development. Administered by the Department of Forestry.

471. Environmental Topics in Nonmetropolitan Regions
Fall. 4(4-0) Nomination of students by own department and approval by participating faculty. Interdepartmental with the College of Natural Science and Agriculture.

475. International Studies in Agriculture and Natural Resources
Spring, Summer. 3 to 9 credits. Approval of the college. Interdepartmental with and administered by Agriculture.

NATURAL SCIENCE N S

University College

Students who have not taken any of the required natural science courses, may take any three courses from the following list:

N 5 115, 122, 125, 131, 143, 152, 160, 171H, 172H, 173H

OR

If you are enrolled in ATL 101, you may take N 5 181, 182, 183.

Students who have already taken one or two natural science courses should refer to the chart below to complete the University requirements of 12 credits in Natural Science.

You may take if you have not had credit in

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A-142