REPORT: COMMITTEE ON CURRICULA AND COURSES
(For consideration by the Faculty Senate at its December 3, 2014 meeting.)

Per the USC Policies and Procedures Manual - Academic Affairs section ACAF 2.00 and 2.03 Appendices, any department which has a proposal being recommended by the Committee on Curricula and Courses must have a representative in attendance at the Faculty Senate meeting in which said proposal is to be recommended.

Please contact Chair Milind Purohit (Physics and Astronomy) in advance of Faculty Senate meeting if errors are noted, either by phone: 777-6996 or e-mail: purohit@sc.edu

1. COLLEGE OF ARTS AND SCIENCES

A. Department of Biological Sciences

New course (Effective: 2015-2016 Bulletin)
BIOL 535 Fishery Management. [=MSCI 535] (3) Management and conservation of aquatic and marine resources, with emphasis on fisheries. Data procurement and analysis; commercial and recreational fisheries; sociological, political, legal, and environmental factors that affect fishery management; and fish biodiversity. Prereq: BIOL 301

BIOL 574 Marine Conservation Biology. [=MSCI 574] (3) Exploration of how human activities affect marine natural populations, species, communities and ecosystems, including threats to biodiversity; approaches to marine conservation; and ecological and evolutionary responses to anthropogenic disturbance. Prereq: BIOL 301

BIOL 576 Marine Fisheries Ecology. [=MSCI 576] (3) Interdisciplinary examination of the distribution, reproduction, survival, and historical variation of the principal commercial marine fisheries. Prereq: BIOL 301

Change in corequisite and prerequisite (Effective: 2015-16 Bulletin)
From: BIOL 541L Biochemistry Laboratory. [=CHEM 550L] (1)
Corequisite: Prereq or coreq: BIOL 541 [=CHEM 550]
Prerequisites: Prereq or coreq: BIOL 541 [=CHEM 550]
To: BIOL 541L Biochemistry Laboratory. [=CHEM 550L] (1)
Prerequisite or corequisite: BIOL 541 [=CHEM 550] or BIOL 545 [=CHEM 555]

Change in prerequisite and description (Effective: 2015-16 Bulletin)
From: BIOL 546 Biochemistry/Molecular Biology II. [=CHEM 556] Essentials of modern biochemistry and molecular biology. Second semester of two-semester course. Prereq: BIOL 545 or consent of instructor
To: BIOL 546 Biochemistry/Molecular Biology II. [CHEM 556] Essentials of
modern biochemistry and molecular biology. 
Prereq: BIOL 302

Change in title and description (Effective: 2015-16 Bulletin)
From: BIOL 690 Ultramicroscopy. (3) Theoretical and practical aspects of electron, optical, and atomic force microscopy including energy dispersive analysis and digital image acquisition and processing.
To: BIOL 690 Electron Microscopy. (3) Theoretical and practical aspects of scanning and transmission electron microscopy, digital image acquisition and energy dispersive x-ray spectroscopy.

B. Department of Chemistry and Biochemistry
New courses (Effective: 2015-16 Bulletin)
CHEM 322 Analytical Chemistry. (3) Qualitative analysis, quantitative analysis, fundamental or method analysis, and molecular characterization.
Prereq: grade of C or better in CHEM 112 and CHEM 112L or CHEM 142 and MATH 141.
Coreq: CHEM 332L
Restricted to: Honors College and major codes 109, 195, 451 and 470

CHEM 322L Analytical Chemistry Laboratory. (1) Laboratory skill building in analytical techniques. Applications of stoichiometry, spectroscopy, phase transfer, electrochemistry and kinetics.
Prereq: grade of C or better in CHEM 112 and CHEM 112L or CHEM 142.
Coreq: CHEM 322
Restricted to: Honors College and major codes 109, 195, 451 and 470

Change in corequisite and prerequisite (Effective: 2015-16 Bulletin)
From: CHEM 550L Biochemistry Laboratory. [=BIOL 541L] (1) 
Corequisite: Prereq or coreq: CHEM 550 [=BIOL 541] 
Prerequisites: Prereq or coreq: CHEM 550 [=BIOL 541]
TO: CHEM 550L Biochemistry Laboratory. [=BIOL 541L] (1) 
Prerequisite or corequisite: CHEM 550 [= BIOL 541] or CHEM 555 [=BIOL 545]

Change in prerequisite and description (Effective: 2015-16 Bulletin)
From: CHEM 556 Biochemistry/Molecular Biology II. [=BIOL 546] Essentials of modern biochemistry and molecular biology. Second semester of two-semester course. Prereq: BIOL 302; CHEM 555 or consent of instructor
To: CHEM 556 Biochemistry/Molecular Biology II. [=BIOL 546] Essentials of modern biochemistry and molecular biology.
Prereq: BIOL 302
## Change in curriculum – Biochemistry and Molecular Biology, B.S.
*(Effective: 2015-2016 Bulletin)*

### Current Major Requirements (67 hours)

- BIOL 101 - Biological Principles I
- BIOL 101L - Biological Principles I Laboratory
- BIOL 102 - Biological Principles II
- BIOL 102L - Biological Principles II Laboratory
- BIOL 302 - Cell and Molecular Biology
- BIOL 302L - Cell and Molecular Biology Laboratory
- BIOL 303 - Fundamental Genetics
- 3 hours from: BIOL 425, BIOL 460, BIOL 543, or BIOL 620
- BIOL 550 - Bacteriology
- BIOL 550L - Bacteriology Laboratory
- CHEM 111 - General Chemistry I
- CHEM 112 - General Chemistry II
- CHEM 321 - Quantitative Analysis
- CHEM 321L - Quantitative Analysis Laboratory
- CHEM 333 - Organic Chemistry I
- CHEM 331L - Essentials of Organic Chemistry Laboratory I
- CHEM 334 - Organic Chemistry II
- CHEM 332L - Essentials of Organic Chemistry Laboratory II
- CHEM 541 - Physical Chemistry
- CHEM 541L - Physical Chemistry Laboratory
- CHEM 545 - Physical Biochemistry
- CHEM 360 - Undergraduate Seminar
- 11 hours from: CHEM 399 or CHEM 496 - Undergraduate Research; BIOL 360 = CHEM 360; BIOL 545 = CHEM 555; BIOL 546 = CHEM 556; BIOL 541L = CHEM 550L
- 6 hours from 400-600 level electives in Biology or Chemistry

### Proposed Major Requirements (67 hours)

- BIOL 101 - Biological Principles I
- BIOL 101L - Biological Principles I Laboratory
- BIOL 102 - Biological Principles II
- BIOL 102L - Biological Principles II Laboratory
- BIOL 302 - Cell and Molecular Biology
- BIOL 302L - Cell and Molecular Biology Laboratory
- BIOL 303 - Fundamental Genetics
- 3 hours from: BIOL 425, BIOL 460, BIOL 543, or BIOL 620
- BIOL 550 - Bacteriology
- BIOL 550L - Bacteriology Laboratory
- CHEM 111 - General Chemistry I
- CHEM 112 - General Chemistry II
- CHEM 322 - Analytical Chemistry
- CHEM 322L - Analytical Chemistry Laboratory
- CHEM 333 - Organic Chemistry I
- CHEM 331L - Essentials of Organic Chemistry Laboratory I
- CHEM 334 - Organic Chemistry II
- CHEM 332L - Essentials of Organic Chemistry Laboratory II
- CHEM 541 - Physical Chemistry
- CHEM 541L - Physical Chemistry Laboratory
- CHEM 545 - Physical Biochemistry
- CHEM 360 - Undergraduate Seminar
- 11 hours from: CHEM 399 or CHEM 496 - Undergraduate Research; BIOL 360 = CHEM 360; BIOL 545 = CHEM 555; BIOL 546 = CHEM 556; BIOL 541L = CHEM 550L
- 6 hours from 400-600 level electives in Biology or Chemistry
## Change in curriculum – Chemistry, B.S.
**(Effective 2015-2016)**

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
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<tbody>
<tr>
<td><strong>Major Requirements (27 hours)</strong></td>
<td><strong>Major Requirements (27 hours)</strong></td>
</tr>
<tr>
<td><strong>Required Courses (24 Hours)</strong></td>
<td><strong>Required Courses (24 Hours)</strong></td>
</tr>
<tr>
<td>- CHEM 321 - Quantitative Analysis</td>
<td>- CHEM 322 – Analytical Chemistry</td>
</tr>
<tr>
<td>- CHEM 321L - Quantitative Analysis Laboratory</td>
<td>- CHEM 322L – Analytical Chemistry Laboratory</td>
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<tr>
<td>- CHEM 333L - Comprehensive Organic Chemistry Laboratory I</td>
<td>- CHEM 333L - Comprehensive Organic Chemistry Laboratory I</td>
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<tr>
<td>- CHEM 334 - Organic Chemistry II</td>
<td>- CHEM 334 - Organic Chemistry II</td>
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<tr>
<td>- CHEM 334L - Comprehensive Organic Chemistry Laboratory II</td>
<td>- CHEM 334L - Comprehensive Organic Chemistry Laboratory II</td>
</tr>
<tr>
<td>- CHEM 541 - Physical Chemistry</td>
<td>- CHEM 541 - Physical Chemistry</td>
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<tr>
<td>- CHEM 541L or CHEM 591</td>
<td>- CHEM 541L or CHEM 591</td>
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<tr>
<td>- CHEM 542 - Physical Chemistry</td>
<td>- CHEM 542 - Physical Chemistry</td>
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<tr>
<td>- CHEM 542L or CHEM 592</td>
<td>- CHEM 542L or CHEM 592</td>
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## Change in curriculum – Chemistry, B.S. Chem
**(Effective: 2015-2016 Bulletin)**

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
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<tbody>
<tr>
<td><strong>Major Requirements (37 Hours)</strong></td>
<td><strong>Major Requirements (37 Hours)</strong></td>
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<tr>
<td>Courses in chemistry numbered 300 level and above to include the following:</td>
<td>Courses in chemistry numbered 300 level and above to include the following:</td>
</tr>
<tr>
<td>- CHEM 321 - Quantitative Analysis</td>
<td>- CHEM 322 – Analytical Chemistry</td>
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<tr>
<td>- CHEM 321L - Quantitative Analysis Laboratory</td>
<td>- CHEM 322L – Analytical Chemistry Laboratory</td>
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<tr>
<td>- CHEM 333L - Comprehensive Organic Chemistry Laboratory I</td>
<td>- CHEM 333L - Comprehensive Organic Chemistry Laboratory I</td>
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<tr>
<td>- CHEM 334 - Organic Chemistry II</td>
<td>- CHEM 334 - Organic Chemistry II</td>
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<tr>
<td>- CHEM 334L - Comprehensive Organic Chemistry Laboratory II</td>
<td>- CHEM 334L - Comprehensive Organic Chemistry Laboratory II</td>
</tr>
<tr>
<td>- CHEM 511 - Inorganic Chemistry</td>
<td>- CHEM 511 - Inorganic Chemistry</td>
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</tbody>
</table>
- CHEM 541 - Physical Chemistry
- CHEM 541L or CHEM 591
- CHEM 542 - Physical Chemistry
- CHEM 542L or CHEM 592
- CHEM 550 or CHEM 555
- CHEM 621 - Instrumental Analysis
- CHEM 621L - Instrumental Analysis
- 3 credits of undergraduate research

- CHEM 541 - Physical Chemistry
- CHEM 541L or CHEM 591
- CHEM 542 - Physical Chemistry
- CHEM 542L or CHEM 592
- CHEM 550 or CHEM 555
- CHEM 621 - Instrumental Analysis
- CHEM 621L - Instrumental Analysis
- 3 credits of undergraduate research

C. Department of Earth and Ocean Sciences
**Deletion (Effective: 2015-2016 Bulletin)**
GEOL 220 Real Estate Geology. (3)

D. Department of Geography
**New course (Effective: 2015-2016 Bulletin)**
GEOG 575 Digital Techniques and Applications in Remote Sensing. (3) Introduction to digital image processing techniques and applications. Image correction, enhancement, spatial and spectral transformation. Land use/land cover classification, and change detection. Prereq: GEOG 551 or equivalent, or permission of instructor

E. Department of History
**Change in description (Effective: 2015-2016 Bulletin)**
From: HIST 386 Islamic Institutions and Traditions. [=RELG 354] (3) The institutions political, religious, social, and economic—developed by the Muslim community and the traditions which surround them. Emphasis on the role of these institutions and traditions in the classical era and the changes they have undergone in modern times.
To: HIST 386 Islamic Institutions and Traditions. [=RELG 354] (3) The religious, political, social and economic institutions and intellectual and scholarly traditions developed by Muslim societies throughout Afro-Eurasia from late antiquity to the present.

**Change in title (Effective: 2015-2016 Bulletin)**
From: HIST 420 Latin America: The Founding of New Societies. [=LASP 341] (3)
To: HIST 420 Colonial Latin America. [=LASP 341] (3)

F. Islamic World Studies Program
**Curriculum change – Islamic World Studies Minor (Effective: 2015-2016 Bulletin)**

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
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5
### Electives (12 Hours)

Select four courses from the listing of courses below. Course choices must include at least one of the listed courses in Religious Studies unless taken to fulfill other degree requirements.

- ANTH 310 - Cultures of Islam
- ANTH 311 - Middle Eastern Cultures
- ANTH 315 - South Asian Cultures
- ANTH 316 - Southeast Asian Cultures
- ANTH 515 - Tradition and Transformations in Islamic Cultures
- ARAB 201 - Intermediate Arabic
- ARAB 202 - Intermediate Arabic
- ARAB 280 - Introduction to Modern Arab Culture
- ARAB 301 - Advanced Arabic Language I
- ARAB 302 - Advanced Arabic Language II
- ARAB 310 - Conversational Arabic
- ARAB 320 - Introduction to Modern Arab Literature in Translation
- ARAB 398 - Selected Topics
- FREN 453 - Francophone Literatures and Cultures
- GEOG 226 - Geography of the Middle East
- HIST 104 - Introduction to the Civilization of the Islamic Middle East
- HIST 347 - The Middle East in Modern Times
- HIST 348 - North Africa from Colonialism to Revolution: 1830-1962
- HIST 349 - The Contemporary Middle East and North Africa
- HIST 386 - Islamic Institutions and Traditions
- HIST 562 - The Middle East and the United States: 1800 to the Present
- POLI 449 - International Relations of the Middle East
- POLI 483 - Middle East Politics
- RELG 250 - Introduction to Islam
- RELG 358 - The Qur’an and Hadith
- RELG 359 - Islamic Theology and Philosophical Thought
- RELG 367 - Sufism
- RELG 369 - Islamic Law
- Note: 121 and 122 in Arabic or Swahili are recommended as choices for the foreign language requirement.
language requirement. Students may apply credits from special topics courses offered by any Arts and Sciences department toward the Islamic World Studies minor. To count toward the minor, the majority of material covered in a special topics course must relate to Islam, Muslim populations, and/or Islamic World contexts. Approval of special topics courses is at the discretion of the Program Director.

G. Department of Languages, Literatures, and Cultures

**Change in curriculum – Classic Studies, BA - concentration**  
(Effective: 2015-2016 Bulletin)

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<tr>
<th>Current</th>
<th>Proposed</th>
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<tbody>
<tr>
<td><strong>Classical Studies Program Electives</strong></td>
<td><strong>Classical Studies Program Electives</strong></td>
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<tr>
<td>Select 6 hours from the following:</td>
<td>Select 6 hours from the following:</td>
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<tr>
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<td>ARTH 313 History of Roman Art</td>
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<td>ARTH 320 History of Italian Renaissance Art</td>
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<td>ARTH 514 Greek Art &amp; Archaeology</td>
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<td>ARTH 520 History of Renaissance Painting</td>
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<td>ARTH 520 Topics in Renaissance Art</td>
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<td>CPTL 301 Great Books of the Western World I</td>
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<td>CLAS 240 Sport &amp; Combat in the Ancient World</td>
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<td>CLAS 360/PHIL 312 Classical Origins of Western Medical Ethics</td>
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<td>CLAS 361/PHIL 313 Between Magic &amp; Method: Ancient Medicine</td>
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<td></td>
<td>HIST 302 Greek History &amp; Civilization to 146 BC</td>
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<td>HIST 303 Roman Republic and Early Empire</td>
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<td>HIST 304 Late Antiquity: Imperial Rome to Islam</td>
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<td>HIST 325 Byzantine history: 4th to 11th Centuries</td>
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<td></td>
<td>PHIL 505 Plato</td>
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<td>PHIL 506 Aristotle</td>
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<td>PHIL 526 Hellenistic Philosophy</td>
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<td>RELG 302 New Testament</td>
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<td>RELG 321 Old Testament Prophets</td>
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<td>PHIL 505 Plato</td>
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<td>GBST 601 Great Books of the Western World I</td>
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<td>HIST 302 Greek History &amp; Civilization to 146 BC</td>
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<td>HIST 303 Roman Republic and Early Empire</td>
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<td>HIST 304 Late Antiquity: Imperial Rome to Islam</td>
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<td>HIST 325 Byzantine history: 4th to 11th Centuries</td>
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<td>PHIL 505 Plato</td>
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<td>PHIL 506 Aristotle</td>
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<td>PHIL 526 Hellenistic Philosophy</td>
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<td>RELG 302 New Testament</td>
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### Change in curriculum – Minor in Chinese Studies
**(Effective: 2015-2016 Bulletin)**

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<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
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<tbody>
<tr>
<td><strong>Hours Required for the Minor: 18</strong></td>
<td><strong>Hours Required for the Minor: 18</strong></td>
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<td><strong>Required</strong></td>
<td><strong>Required</strong></td>
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<td>Chinese language through CHIN 322.</td>
<td>CHIN 240 and Chinese language through CHIN 322. Students who place out of some or all of the core language courses will take the 18 hours in literature, civilization and advanced language courses (as appropriate).</td>
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<tr>
<td>The following courses may be applied to the minor:</td>
<td>The following courses may be applied to the minor:</td>
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<tr>
<td>- CHIN 222 - Intermediate Mandarin Chinese II</td>
<td>- CHIN 222 - Intermediate Mandarin Chinese II</td>
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<tr>
<td>- CHIN 240 - Chinese Culture, Tradition, and Modern Societies</td>
<td>- CHIN 240 - Chinese Culture, Tradition, and Modern Societies</td>
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<tr>
<td><strong>Electives</strong></td>
<td><strong>Electives</strong></td>
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<tr>
<td>At least nine hours from the following:</td>
<td>At least nine six hours from the following:</td>
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<tr>
<td>- CHIN 240 - Chinese Culture, Tradition, and Modern Societies</td>
<td>- CHIN 240 - Chinese Culture, Tradition, and Modern Societies</td>
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### Change in curriculum – Foreign Language Education Minor

*(Effective: 2015-2016 Bulletin)*

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<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
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<tbody>
<tr>
<td>- EDFN 300 - Schools In Communities</td>
<td>- EDFI 300 - Schools In Communities</td>
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<tr>
<td>- EDPY 401 - Learners and the Diversity of Learning</td>
<td>- EDPY 401 - Learners and the Diversity of Learning</td>
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<tr>
<td>- EDPY 401P - Practicum: Learners and the Diversity of Learning</td>
<td>- EDEX 491 - Introduction to Inclusion of Students with Mild Disabilities</td>
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<tr>
<td>- EDEX 491 - Introduction to Inclusion of Students with Mild Disabilities</td>
<td>- EDTE 201 – Issues and Trends in Teaching and Learning</td>
</tr>
<tr>
<td>- EDTE 400 – Learning Through Community Service</td>
<td>- FORL 472 - Introduction to Technology in Language Education</td>
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<tr>
<td>- FORL 472 - Introduction to Technology in Language Education</td>
<td>- FORL 510 - Teaching Second Languages to Young Children</td>
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<tr>
<td>- FORL 510 - Teaching Second Languages to Young Children</td>
<td>- FORL 511 - Teaching Foreign Languages in Secondary Schools</td>
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<td>- FORL 511 - Teaching Foreign Languages in Secondary Schools</td>
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<td><strong>Current</strong></td>
<td><strong>Proposed</strong></td>
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<tr>
<td><strong>2. German Major (27 Hours)</strong>&lt;br&gt;A minimum grade of C is required in all major courses.&lt;br&gt;<strong>General Option (27 Hours)</strong>&lt;br&gt;· Select 1 course from GERM 280 or above&lt;br&gt;· Select 5 courses from GERM 300 or above&lt;br&gt;Note: Only three GERM courses taught in English (280, 290, 295, 398, 580) may apply to the major. German majors taking a course in English must do some of the readings in German. GERM 398 may be repeated with a different suffix as topics vary.&lt;br&gt;<strong>Additional Requirements:</strong> In addition to these courses, the following requirements must be met:&lt;br&gt;· GERM 411&lt;br&gt;· Select at least 1 course from German Literature sequence (GERM 420, 430, 440, 450, 460)&lt;br&gt;· Select 1 course from GERM 500 or above</td>
<td><strong>2. German Major (27 Hours)</strong>&lt;br&gt;A minimum grade of C is required in all major courses.&lt;br&gt;<strong>General Option (27 Hours)</strong>&lt;br&gt;· GERM 410&lt;br&gt;· GERM 411&lt;br&gt;· Two 400-level literature courses chosen from GERM 420, 430, 440, 450, 460&lt;br&gt;· One GERM course at the 500-level&lt;br&gt;· Three GERM courses at the 300-level or above&lt;br&gt;· One GERM course at 220 or above&lt;br&gt;Note: Only two GERM courses taught in English may apply to the major. German majors taking a course in English must do some of the readings in German. GERM 398 may be repeated as topics vary.</td>
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**New course (Effective: 2015-2016 Bulletin)**

| GERM 230 The Idea of Nature in Germany. (3) The idea of nature in Germany from the 18th century to today. Focus on scientific, philosophical, social and political entanglements that prompt radical shifts in how German thinkers view nature. |

**Change in title and description (Effective: 2015-2016 Bulletin)**

**From:** GERM 420 German Literature and Culture of the Middle Ages and Early Modern Period. (3) Survey of the significant aspects of German literature and culture from 750 to 1700.<br>**To:** GERM 420 Medieval German literature and Culture. (3) Survey of German literature and culture from the beginnings to 1350, including Germanic mythology and heroic poetry, conversion to Christianity, courtly romance and love lyric, mystical writings, art and architecture.
From:  GERM 430  The Age of Goethe. (3) Major works by Goethe and Schiller with emphasis on Faust.
To:  GERM 430  The German Enlightenment and its Countercurrents. (3) German literature and culture of the 18th century with emphasis on the period between 1750 and Weimar Classicism. May include major works by Lessing, Goethe, and Schiller.

From:  GERM 440  German Literature and Culture of the 19th Century. (3) Literature and culture of the 19th century until 1890, including Romanticism, Biedermeier, and Realism.
To:  GERM 440  German Literature and Culture from 1800-1871. (3) Introduction to significant works of German literature, music, art, and thought of the 19th century, starting with the young generation of Romantics and ending with the work of Wagner, Marx, and Nietzsche.

From:  GERM 450  German Literature from 1890-1945. (3) German literary, cultural, and intellectual developments from 1890 to 1945, including Expressionism, Weimar Republic, the Third Reich, and exile period.
To:  GERM 450  German Literature from 1871-1945. (3) German literary, cultural, and intellectual developments from Unification to the end of WWII, including Naturalism, Expressionism, the Weimar Republic, the Third Reich, and the exile period.

Change in curriculum – Russian Minor (Effective: 2015-2016 Bulletin)

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
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<tbody>
<tr>
<td>Russian Minor</td>
<td>Russian Minor</td>
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<tr>
<td>Department of Languages, Literatures, and Cultures College of Arts and Sciences</td>
<td>Department of Languages, Literatures, and Cultures College of Arts and Sciences</td>
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<tr>
<td>Eighteen credit hours above Russian 122 as follows:</td>
<td>Eighteen credit hours above Russian 122 as follows:</td>
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<tr>
<td>Language (3 Hours)</td>
<td>Language (12 Hours)</td>
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<tr>
<td>RUSS 302 - Russian Conversation and Composition II or equivalent</td>
<td>RUSS 201 – Intermediate Russian I</td>
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<tr>
<td>RUSS 201 – Intermediate Russian I</td>
<td>RUSS 202 – Intermediate Russian II</td>
</tr>
<tr>
<td>RUSS 301 – Russian Conversation and Composition I</td>
<td>RUSS 301 – Russian Conversation and Composition I</td>
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<tr>
<td>RUSS 302 - Russian Conversation and</td>
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</table>
Select two options from the following:

- RUSS 319 and RUSS 319L
- RUSS 320 and RUSS 320L
- RUSS 398 - Selected Topics
- RUSS 598 - Selected Topics in Russian

Additional Electives (9 Hours)
Select nine hours of RUSS 121 and above.

Notes:
For more information, contact:
Professor Alex Ogden
Humanities Office Building, Room 903
(803) 777-9573
gdenj@gwm.sc.edu
http://www.cas.sc.edu/dllc/russian/programs_study.html#minor

Composition II

Literature and Culture (6 Hours)
Select from the following for a total of six credits:

- RUSS 280 – Introduction to Russian Civilization
- RUSS 298 – Selected Topics
- RUSS 319 – Nineteenth-Century Russian Literature in Translation
- RUSS 319L - Nineteenth-Century Russian Literature in Russian
- RUSS 320 - Twentieth-Century Russian Literature in Translation
- RUSS 320L - Twentieth-Century Russian Literature in Russian
- RUSS 398 - Selected Topics
- RUSS 399 - Independent Study
- RUSS 598 - Selected Topics in Russian

Notes:
Students who place into an upper-level language class can replace some or all of the 12 language credits with additional literature or culture courses from the list above.
RUSS 298, 398, and 598 are Topics courses that may be repeated for credit under different topics.

**Change in credit hours (Effective: 2015-2016 Bulletin)**

From: SPAN 121 Elementary Spanish I. (4)
To: SPAN 121 Elementary Spanish I. (3)
H. Latin American Studies Program
Change in title (Effective: 2015-2016 Bulletin)
From: LASP 341 Latin America: The Founding of New Societies. [=HIST 420] (3)
To: LASP 341 Colonial Latin America. [=HIST 420] (3)

I. Marine Science Program
New course (Effective: 2015-2016 Bulletin)
MSCI 535 Fishery Management. [=BIOL 535] (3) Management and conservation of aquatic and marine resources, with emphasis on fisheries. Data procurement and analysis; commercial and recreational fisheries; sociological, political, legal, and environmental factors that affect fishery management; and fish biodiversity. Prereq: BIOL 301

MSCI 574 Marine Conservation Biology. [=BIOL 574] (3) Exploration of how human activities affect marine natural populations, species, communities and ecosystems, including threats to biodiversity; approaches to marine conservation; and ecological and evolutionary responses to anthropogenic disturbance. Prereq: BIOL 301

MSCI 576 Marine Fisheries Ecology. [=BIOL 576] (3) Interdisciplinary examination of the distribution, reproduction, survival, and historical variation of the principal commercial marine fisheries. Prereq: BIOL 301

J. Department of Mathematics
New courses (Effective: 2015-2016)
MATH 344 Applied Linear Algebra. (3) General solutions of systems of linear equations, vector spaces and subspaces, linear transformations, determinants, orthogonality, characteristic polynomials, eigenvalues and eigenvectors, singular value decomposition, and generalized inverse. Prereq: C or better in MATH 142, or consent of Undergraduate Director
NOTE: MATH 344L is an optional laboratory course where additional applications will be discussed.

MATH 344L Applied Linear Algebra Lab. (1) Computer based applications of linear algebra for science and engineering students. Topics include numerical analysis of matrices, direct and indirect methods for solving linear systems, and least squares method (regression). Typical applications include practical issues related to discrete Markov processes, image compression, and linear programming. Prereq or Coreq: C or better or concurrent enrollment in MATH 344
Excluded: Credit not allowed for both MATH 344L and 544L

MATH 544L Linear Algebra Lab. (1) Computer-based applications of linear algebra for mathematics students. Topics include numerical analysis of matrices, direct and indirect
methods for solving linear systems, and least squares method (regression). Typical applications include theoretical and practical issues related to discrete Markov processes, image compression, and linear programming.

Prereq or Coreq: C or better or concurrent enrollment in MATH 544

Excluded: Credit not allowed for both MATH 344L and 544L

**Change in prerequisite, corequisite and description (Effective 2015-2016 Bulletin)**

From: MATH 544 Linear Algebra. (3) Matrix algebra, solution of linear systems; notions of vector space, independence, basis, dimension; linear transformations, change of basis; eigenvalues, eigenvectors, Hermitian matrices, diagonalization; Cayley-Hamilton theorem. Credit may not be received for both MATH 526 and MATH 544.

Corequisite: Prereq or coreq: MATH 241

Prerequisite: Prereq or coreq: MATH 241

To: MATH 544 Linear Algebra. (3) Vectors, vector spaces, and subspaces; geometry of finite dimensional Euclidean space; linear transformations; eigenvalues and eigenvectors; diagonalization. Throughout there will be an emphasis on theoretical concepts, logic, and methods.

Prereq: C or better in MATH 300, or consent of the Undergraduate Director

NOTE: MATH 544L is an optional laboratory course where additional applications will be discussed

**Chart summarizing prerequisite changes to Mathematics courses:**

(Effective: 2015-2016 Bulletin)

<table>
<thead>
<tr>
<th>Course</th>
<th>Current Prerequisite</th>
<th>Proposed Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 111</td>
<td>Placement code MB2 required; earned by Algebra Placement Test</td>
<td>placement through Algebra version of the Mathematics Placement Test: <a href="http://assess.math.sc.edu/">http://assess.math.sc.edu/</a></td>
</tr>
<tr>
<td>MATH 111I</td>
<td>Placement code MB1 required; earned by Algebra Placement Test</td>
<td>placement through Algebra version of the Mathematics Placement Test: <a href="http://assess.math.sc.edu/">http://assess.math.sc.edu/</a></td>
</tr>
<tr>
<td>MATH 112</td>
<td>Placement code MB1-9 required; earned by grade of C or better in MATH 111 or 111I, or Algebra Placement Test</td>
<td>C or better in MATH 111 or 111I, or placement through Algebra version of the Mathematics Placement Test: <a href="http://assess.math.sc.edu/">http://assess.math.sc.edu/</a></td>
</tr>
<tr>
<td>MATH 115</td>
<td>Placement code MA2 or MC0-9; earned by grade of C or better in MATH 111 or 111I, or by Precalculus Placement Test</td>
<td>C or better in MATH 111 or 111I, or placement through Precalculus version of the Mathematics Placement Test: <a href="http://assess.math.sc.edu/">http://assess.math.sc.edu/</a></td>
</tr>
<tr>
<td>MATH 116</td>
<td>Placement code MA1-9 [or by Departmental Permission] required; earned by grade of C or better in MATH 115 or by Precalculus Placement Test</td>
<td>C or better in MATH 112 or 115, or placement through Precalculus version of the Mathematics Placement Test: <a href="http://assess.math.sc.edu/">http://assess.math.sc.edu/</a></td>
</tr>
<tr>
<td>MATH 122</td>
<td>Placement code MB1-9 required; earned by grade of C or better in MATH 111 or 111I, or</td>
<td>C or better in MATH 111 or 111I, or placement through Algebra version of the</td>
</tr>
</tbody>
</table>
by Algebra Placement Test | Mathematics Placement Test: [http://assess.math.sc.edu/](http://assess.math.sc.edu/)
---|---
MATH 141 | Placement code MA4-9 or MD0-9 required; earned by grade of C or better in Math 112, 115, or 116, or by Precalculus Placement Test
MATH 141 | Placement code MA4-9 or MD0-9 required; earned by grade of C or better in Math 112, 115, or 116, or by Precalculus Placement Test
MATH 141 | C or better in Math 112, 115, or 116, or placement through Precalculus version of the Mathematics Placement Test: [http://assess.math.sc.edu/](http://assess.math.sc.edu/)
MATH 142 | Qualification through placement or a grade of C or better in MATH 141
MATH 142 | Qualification through placement or a grade of C or better in MATH 141
MATH 142 | C or better in MATH 141
MATH 151 | Coreq: MATH 141
MATH 151 | concurrent registration in MATH 141
MATH 152 | Coreq: MATH 142
MATH 152 | concurrent registration in MATH 142
MATH 170 | Placement code MA4-9, MC0-9 required; earned by grade of C or better in MATH 111/111I, or by Algebra Placement Test
MATH 170 | C or better in MATH 111 or 111I or 122, or placement through Algebra version of the Mathematics Placement Test: [http://assess.math.sc.edu/](http://assess.math.sc.edu/)
MATH 174 | Qualification through placement or a grade of C or better in MATH 112 or 115
MATH 174 | Qualification through placement or a grade of C or better in MATH 112 or 115
MATH 174 | C or better in any 100-level MATH course or placement through either version of the Mathematics Placement Test: [http://assess.math.sc.edu/](http://assess.math.sc.edu/)
MATH 198 | Qualification through placement in MATH 142 or higher, or a grade of C or better in MATH 141
MATH 198 | Qualification through placement in MATH 142 or higher, or a grade of C or better in MATH 141
MATH 198 | C or better in MATH 141
MATH 221 | Placement code MB4-9 or MD0-9 required; earned by grade of C or better in MATH 111/111I, or by Algebra Placement Test
MATH 221 | C or better in MATH 111 or 111I or 122, or placement through Algebra version of the Mathematics Placement Test: [http://assess.math.sc.edu/](http://assess.math.sc.edu/), or consent of the department
MATH 222 | Grade of C or better in MATH 221, or consent of the instructor
MATH 222 | C or better in MATH 221, or consent of the department
MATH 241 | Qualification through placement or a grade of C or better in MATH 142
MATH 241 | C or better in MATH 142, or consent of the department
MATH 242 | Qualification through placement or a grade of C or better in MATH 142
MATH 242 | C or better in MATH 142, or consent of the department
MATH 300 | Grade of C or better in MATH 142
MATH 300 | C or better in MATH 142, or consent of the department
MATH 374 | MATH 142 and CSCE 146
MATH 374 | C or better in both MATH 142 and CSCE 146
MATH 401 | MATH 122, or 141, or consent of the department
MATH 401 | C or better in MATH 122, or 141, or consent of the Undergraduate Director
MATH 499 | Minimum GPA of 3.60 in 500-level MATH courses, 3.30 overall, and departmental permission
MATH 499 | Minimum GPA of 3.60 in 500-level MATH courses, 3.30 overall, and departmental permission
---|---
MATH 511 (=STAT 511) | a grade of C or higher or concurrent enrollment in MATH 244
MATH 511 (=STAT 511) | C or higher or concurrent enrollment in MATH 244, or consent of the Undergraduate Director
MATH 514 (=STAT 522) | a grade of C or better in either MATH 241
MATH 514 (=STAT 522) | C or better in MATH 241, or consent of the Undergraduate Director
MATH 515 (=STAT 523) | MATH 514 or STAT 522 with a grade of C or better
MATH 515 (=STAT 523) | C or better in MATH 514 or STAT 522, or consent of the Undergraduate Director
MATH 520 | MATH 544 or 526, or consent of department
MATH 520 | C or better in MATH 544 or 544, or consent of the Undergraduate Director
<table>
<thead>
<tr>
<th>Course</th>
<th>Current Prerequisite</th>
<th>Proposed Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 521</td>
<td>MATH 520 or 241 and 242</td>
<td>C or better in MATH 520 or in both MATH 241 and 242, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>MATH 522</td>
<td>MATH 544 or 526 or consent of department</td>
<td>C or better in MATH 344 or 544, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>MATH 523</td>
<td>MATH 142, BIOL 301, or MSCI 311 recommended</td>
<td>C or better in MATH 142, BIOL 301, or MSCI 311 recommended</td>
</tr>
<tr>
<td>MATH 524</td>
<td>MATH 526 or 544 or consent of department</td>
<td>C or better in MATH 344 or 544, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>MATH 525</td>
<td>MATH 242 or 520</td>
<td>C or better in MATH 344 or in both MATH 300 and 344, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>MATH 526</td>
<td>MATH 244</td>
<td>C or better in MATH 142, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>MATH 527 (=CSCE 561)</td>
<td>MATH 242 or 520</td>
<td>C or better in MATH 520 or in both MATH 242 and 344, or consent of the Undergraduate Director</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Current Prerequisite</th>
<th>Proposed Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 531</td>
<td>MATH 244</td>
<td>C or better in MATH 300, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>MATH 532</td>
<td>MATH 244</td>
<td>C or better in MATH 300, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>MATH 533</td>
<td>MATH 244</td>
<td>C or better in MATH 300, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>MATH 534</td>
<td>MATH 244</td>
<td>C or better in MATH 300, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>MATH 541</td>
<td>MATH 526 or MATH 544 or consent of department</td>
<td>C or better in MATH 544 or in both MATH 300 and 344, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>MATH 546</td>
<td>MATH 244</td>
<td>C or better in MATH 544, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>MATH 547</td>
<td>MATH 546</td>
<td>C or better in MATH 546, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>MATH 550</td>
<td>a grade of C or higher in either MATH 241</td>
<td>C or better in MATH 241, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>MATH 551</td>
<td>MATH 241</td>
<td>C or better in MATH 300, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>MATH 552</td>
<td>MATH 244</td>
<td>C or better in MATH 241, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>MATH 554</td>
<td>MATH 244</td>
<td>C or better in MATH 300 and either at least one of 511, 520, 534, 550, or 552, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>MATH 555</td>
<td>MATH 554 or consent of department</td>
<td>C or better in MATH 554, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>MATH 561</td>
<td>MATH 244</td>
<td>C or better in MATH 300, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>MATH 562 (=CSCE 551)</td>
<td>CSCE 350 or MATH 526 or 544 or 574</td>
<td>C or better in CSCE 350 or MATH 344 or 544 or 574, or consent of the Undergraduate Director</td>
</tr>
<tr>
<td>Course</td>
<td>Prerequisites</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>MATH 570</td>
<td>MATH 526 or 544, C or better in MATH 344 or 544, or consent of the Undergraduate Director</td>
<td></td>
</tr>
<tr>
<td>MATH 574</td>
<td>MATH 142, C or better in MATH 300, or consent of the Undergraduate Director</td>
<td></td>
</tr>
<tr>
<td>MATH 575</td>
<td>MATH 142, C or better in MATH 574, or consent of the Undergraduate Director</td>
<td></td>
</tr>
<tr>
<td>MATH 576</td>
<td>MATH 526, 544, or 574, C or better in MATH 344, 544, or 574, or consent of the Undergraduate Director</td>
<td></td>
</tr>
<tr>
<td>MATH 580</td>
<td>MATH 244, C or better in MATH 300, or consent of the Undergraduate Director</td>
<td></td>
</tr>
<tr>
<td>MATH 587</td>
<td>CSCE 145, MATH 241, and either CSCE 355 or MATH 574, C or better in CSCE 145, or in MATH 241 and in either CSCE 355 or MATH 574, or consent of the Undergraduate Director</td>
<td></td>
</tr>
<tr>
<td>MATH 602</td>
<td>MATH 122 or 141, C or better in MATH 122 or 141 or equivalent, or consent of the Undergraduate Director</td>
<td></td>
</tr>
<tr>
<td>MATH 603</td>
<td>A grade of C or higher in MATH 122 or MATH 141 or equivalent, C or higher in MATH 122 or 141 or equivalent, or consent of the Undergraduate Director</td>
<td></td>
</tr>
<tr>
<td>MATH 650</td>
<td>current secondary high school teacher certification in mathematics and at least 6 hours of calculus, current secondary high school teacher certification in mathematics and a C or better in at least 6 hours of calculus, or consent of the Undergraduate Director</td>
<td></td>
</tr>
</tbody>
</table>

**Change in curriculum – BS Mathematics (Effective: 2015-2016)**

**NOTE:** The complete 2014-2015 bulletin listing of curriculum for the BS in Mathematics is being replaced in 2015-2016 with the info below:

2. Major

2.1. Major Prerequisites

The following courses fulfill some of the general education requirements, as well as some of the requirements of certain cognates and minors. These courses must be completed for the B.S. degree in mathematics:

- MATH 141 - Calculus I (Must be completed with a grade of C or better)
- MATH 142 - Calculus II (Must be completed with a grade of C or better)
- MATH 241 - Vector Calculus (Must be completed with a grade of C or better)
- MATH 300 - Transition to Advanced Mathematics (Must be completed with a grade of C or better)
- One of the following programming courses:
  - CSCE 145 - Algorithmic Design I
  - CSCE 206 - Scientific Applications Programming
- One of the following statistics courses:
  - STAT 509 - Statistics for Engineers
  - STAT 512 - Mathematical Statistics
  - STAT 515 - Statistical Methods I

2.2. Retention and Other Details
1. A grade of C or better is required in each MATH course.
2. A student may enroll in each MATH course a maximum of two times. (Enrolled in a course is interpreted to mean that a grade, including W or WF, has been recorded.)
3. A student may repeat a maximum of three MATH courses. (Receiving a grade of W is not to be considered a repeat.)

2.3. Transfer Requirement

In addition to the minimum University and College of Arts and Sciences requirements, a student seeking to transfer to the mathematics major from another program within the University, or from another accredited college or university, is required to have earned a grade of "B" or higher in at least one of the following courses, or their USC equivalent: MATH 141 (Calculus I), MATH 142 (Calculus II), MATH 241 (Vector Calculus), or MATH 300 (Transition to Advanced Mathematics). An AP or IB exam score that provides credit for MATH 142 also satisfies this requirement.

2.4. Major Requirements

The base degree is the B.S. in Mathematics; students wishing to participate in significant research with a faculty mentor can enhance their experience by completing the additional requirements for the B.S. with Distinction in Mathematics.

2.4.1. B.S. in Mathematics (24 hours)

- MATH 544
- At least one of
  - MATH 511 – Probability (=STAT 511)
  - MATH 520 – Ordinary Differential Equations
  - MATH 534 - Elements of General Topology
  - MATH 550 - Vector Analysis
  - MATH 552 - Applied Complex Variables
- MATH 546 - Algebraic Structures I
- MATH 554 - Analysis I
- At least 12 hours of MATH electives numbered above 500.
  The choice of the four MATH elective courses should be made to support the student's educational goals and career objectives. MATH electives are discussed below.

2.4.2. B.S. with Distinction in Mathematics (39 hours)

**Prerequisite**
A minimum GPA of 3.60 in upper division (500 and above) major courses and 3.30 overall when the student applies to enter the B.S. with Distinction in Mathematics track.

**Requirements**
The student should apply to enter the B.S. with Distinction in Mathematics track and choose the members of the thesis committee as early as possible, but in all cases at least one year before completion of the degree. The committee will consist of a thesis advisor, who must be a tenure-track faculty member in Mathematics, and one or two other tenure-track or research faculty members in Mathematics or any other department, as approved by the Undergraduate Advisory Council. The senior thesis consists of either significant original work or a synthesis of known material beyond the scope of ordinary undergraduate coursework. The student may use their senior thesis to simultaneously fulfill other requirements as well (e.g., Magellan Scholarship, Honors College Thesis, etc.), at the discretion of the thesis advisor.

By the end of the semester in which the student is admitted into the B.S. with Distinction in Mathematics track, a brief research plan must be agreed upon by the thesis committee and the student, and filed in the Department of Mathematics and College of Arts and Sciences. Before submitting and defending the thesis, the student must have completed three credit hours of MATH 499 (Undergraduate Research) under the supervision of the thesis advisor.
advisor, and at least 12 hours of upper-level (500 and above) MATH credit approved by the Undergraduate Director beyond the 24 credit hours of 500-level MATH courses required for the B.S. in Mathematics.

By the end of the student’s last semester, the student must present and defend the senior thesis before the thesis committee. The defense must be announced at least one week in advance and be open to the general public. A certificate attesting to a successful defense, signed by the committee, must be placed on file with both the Department of Mathematics and the College of Arts and Sciences. In addition, prior to graduation the student must have either (a) presented the research at a meeting of a professional society, at Discovery Day at USC, or at a comparable venue; or (b) submitted the work for publication in an undergraduate or professional journal.

Students who successfully fulfill all of these requirements with a GPA of at least 3.60 in upper division (500 and above) major courses and 3.30 overall, will be awarded their degree with “Distinction in Mathematics” upon graduation.

2.5. Math Electives

The courses listed below are available for MATH elective credit. (As MATH 544, MATH 546, and MATH 554 are required of all majors, these are not listed.) Undergraduate students interested in taking 700-level MATH courses as MATH elective credit should consult the Graduate Bulletin.

**Algebra**

- MATH 540 - Modern Applied Algebra
- MATH 541 - Algebraic Coding Theory
- MATH 547 - Algebraic Structures II

**Analysis**

- MATH 511 - Probability
- MATH 550 - Vector Analysis
- MATH 551 - Introduction to Differential Geometry
- MATH 552 - Applied Complex Variables
- MATH 555 - Analysis II

**Differential Equations and Modeling**

- MATH 520 - Ordinary Differential Equations
- MATH 521 - Boundary Value Problems and Partial Differential Equations
- MATH 522 - Wavelets
- MATH 523 - Mathematical Modeling of Population Biology

**Discrete Mathematics**

- MATH 541 - Algebraic Coding Theory
- MATH 570 - Discrete Optimization
- MATH 574 - Discrete Mathematics I
- MATH 575 - Discrete Mathematics II
- MATH 576 - Combinatorial Game Theory
- MATH 587 - Introduction to Cryptography

**Financial Mathematics and Probability**

- MATH 511 - Probability
- MATH 514 - Financial Mathematics I
- MATH 515 - Financial Mathematics II
- MATH 525 - Mathematical Game Theory

**Geometry**

- MATH 531 - Foundations of Geometry
- MATH 532 - Modern Geometry
- MATH 533 - Elementary Geometric Topology
- MATH 534 - Elements of General Topology
MATH 551 - Introduction to Differential Geometry

Mathematical Logic
MATH 561 - Introduction to Mathematical Logic
MATH 562 - Theory of Computation

Number Theory
MATH 580 - Elementary Number Theory
MATH 587 - Introduction to Cryptography

Optimization and Computation
MATH 524 - Nonlinear Optimization
MATH 527 - Numerical Analysis
MATH 570 - Discrete Optimization

Special Topics
MATH 599 - Topics in Mathematics

2.6. General Guidelines for Selecting 500-level MATH Electives

2.6.1. Students planning to go to graduate school in mathematics should complete at least one of the two-semester sequences in algebra (MATH 546 and MATH 547) or analysis (MATH 554 and MATH 555). Completing both two-semester sequences provides the strongest foundation for graduate study in mathematics. Students completing this combination of courses are well on their way towards completing the B.S. with Distinction in Mathematics.

2.6.2. Students planning to become mathematics teachers at the secondary (grades 9-12) level should choose MATH 574, MATH 580, and at least one of MATH 531 or MATH 532. In addition, as a cognate, these students should take:

   EDFI 300 - Schools In Communities
   EDPY 401 - Human Growth and Development
   EDSE 302 - Teachers and Teaching
   EDSE 500 - Equity and Community Engagement

   With two additional Education courses, students complete a minor in Education. This selection of MATH electives and of the education cognate positions students to complete, after completing a B.S. in Mathematics, a one-year graduate Master of Teaching degree from the College of Education and apply for grades 9-12 mathematics licensure in South Carolina.

2.6.3. Students planning to pursue a career in actuarial science should declare a minor in Risk Management and Insurance and complete their MATH electives with the following courses:

   MATH 511 - Probability
   MATH 520 - Ordinary Differential Equations
   MATH 574 - Discrete Mathematics,
   and either MATH 524 - Nonlinear Optimization or MATH 570 - Discrete Optimization

   The Risk Management and Insurance Minor is completed by taking ACCT 225, ECON 221 and 222, and FINA 363, 469, 471, and 475.

   To develop a strong basis for success in the initial actuarial examinations (Exam P and Exam F), and to qualify for the Society of Actuaries’ Validation through Educational Experience (VEE) in Applied Statistics, Economics, and Corporate Finance, students should complete the following collection of 30 semester hours in the Department of Statistics and the Darla Moore School of Business. For detailed information about the VEE program, see https://www.soa.org/Education/Exam-Req/edu-vee.aspx.

   Mathematical Statistics and Statistical Models (9 hours)
   STAT 512 - Mathematical Statistics
2.6.4. Students planning to undertake further study in applied mathematics or who intend to start mathematical careers in the private or public sectors after graduation, should consider MATH 520 and other courses in Differential Equations and Modeling, in Discrete Mathematics, in Financial Mathematics, and in Optimization and Computation, including 9 credit hours from two of the following categories.

**Differential Equations and Modeling**
- MATH 521 - Boundary Value Problems and Partial Differential Equations
- MATH 522 - Wavelets
- MATH 523 - Mathematical Modeling of Population Biology

**Discrete Mathematics**
- MATH 541 - Algebraic Coding Theory
- MATH 570 - Discrete Optimization
- MATH 575 - Discrete Mathematics II
- MATH 576 - Combinatorial Game Theory
- MATH 587 - Introduction to Cryptography

**Financial Mathematics and Probability**
- MATH 511 - Probability
- MATH 514 - Financial Mathematics I
- MATH 515 - Financial Mathematics II

**Optimization and Computation**
- MATH 524 - Nonlinear Optimization
- MATH 527 - Numerical Analysis
- MATH 570 - Discrete Optimization

**Analysis**
- MATH 550 - Vector Analysis
- MATH 552 - Applied Complex Variables
- MATH 555 – Analysis II
3. Cognate or Minor Requirements (12-18 Hours) for B.S. Degrees

3.1. Cognate

The cognate is intended to support the course work in the major. The cognate must consist of twelve (12) hours of courses at the advanced level, outside of but related to the major. The cognate may be taken in one or more departments or programs, depending on the interests of the student and the judgment of the advisor.

Courses offered by departments and programs that are acceptable for cognate credit are outlined in the section titled Courses Acceptable for Cognate Credit in Degree Programs in the College of Arts and Sciences.

It should be emphasized that the cognate is not a second set of elective courses to be chosen at random by the student. The cognate must be approved by the major advisor as being related to the major field of study.

- Students are urged to consult their major advisors for specific requirements in their major.
- Courses applied toward general education requirements cannot be counted toward the cognate.
- For Bachelor of Science degrees, grades of D are acceptable for completion of the cognate requirement, except where restricted by the major program.

3.2. Minor

In place of the cognate a student in the College of Arts and Sciences may choose a minor consisting of at least 18 credit hours of prescribed courses. (Some minors in the sciences require a minimum of 16 hours.) The subject area of the minor may be related to the major. Students pursuing interdisciplinary minors who wish to use courses in their major department for minor credit must petition the College Committee on Scholastic Standards and Petitions for permission to do so.

The minor is intended to develop a coherent basic preparation in a second area of study. It differs from the cognate inasmuch as the courses must be concentrated in one area and must follow a structured sequence. Interdisciplinary minors can be designed with the approval of the assistant dean for academic affairs and advising.

Courses applied toward general education requirements cannot be counted toward the minor. No course may satisfy both major and minor requirements. All minor courses must be passed with a grade of C or higher. At least half of the courses in the minor must be completed in residence at the University.

A list of minor programs of study can be found at Programs of Study A-Z.

4. Electives for B.S. Degrees

No courses of a remedial, developmental, skill-acquiring, or vocational nature may apply as credit toward degrees in the College of Arts and Sciences. The College of Arts and Sciences allows the use of the Pass-Fail option on elective courses. Further clarification of inapplicable courses can be obtained from the College of Arts and Sciences.

Change in curriculum – Mathematics Minor (Effective: 2015-2016)

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
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</thead>
<tbody>
<tr>
<td>Mathematics Minor</td>
<td>Mathematics Minor</td>
</tr>
<tr>
<td>Prerequisite Courses (8 Hours)</td>
<td>Prerequisite Courses</td>
</tr>
<tr>
<td>- MATH 141 - Calculus I</td>
<td>- MATH 141 – Calculus I</td>
</tr>
</tbody>
</table>
• MATH 142 - Calculus II

Required Course (3 Hours)

• MATH 241 - Vector Calculus

Additional Courses (15 Hours)

At least 15 hours of MATH selected from the following:
  • MATH 242 Elementary Differential Equations
  • MATH 300 - Transition to Advanced Mathematics
  • MATH 374 Discrete Structures
  • and 500-level courses.

* At least 6 of these 15 hours must be selected from the following:
  • MATH 520 Ordinary Differential Equations
  • MATH 526 Numerical Linear Algebra
  • MATH 544 Algebraic Structures I
  • MATH 554 Analysis I
  • MATH 574 Discrete Mathematics I

* *At most one of MATH 526 and 544 may be used for minor credit.

• MATH 142 - Calculus II

Required Course (6 Hours)

• MATH 241 - Vector Calculus
• MATH 300 - Transition to Advanced Mathematics

Additional Courses (12 Hours)

At least 3 hours must be selected from:
  • MATH 546* - Algebraic Structures I
  • MATH 554** - Analysis I

At least 9 additional hours selected from:
  • MATH 242 - Elementary Differential Equations
  • MATH 344 - Elementary Linear Algebra
  • MATH 374 - Discrete Structures
  • and 500-level MATH courses.

* The prerequisite for MATH 546 is a C or better in MATH 544.

** The prerequisite for MATH 554 is a C or better in one of MATH 511, 520, 534, 550, or 552.

K. Department of Religious Studies

Change in course number, title and description (Effective: 2015-2016 Bulletin)


To: RELG 101 Exploring Religion. (3) Introduction to the beliefs and practices of the world’s religions and to the methods scholars use to study them.

Change in description

From: RELG 354 Islamic Institutions and Traditions. [=HIST 386] (3) The institutions political, religious, social, and economic—developed by the Muslim community and the traditions which surround them. Emphasis on the role of these institutions and traditions in the classical era and the changes they have undergone in modern times.

To: RELG 354 Islamic Institutions and Traditions. [=HIST 386] (3) The religious,
political, social and economic institutions and intellectual and scholarly
traditions developed by Muslim societies throughout Afro-Eurasia from
late antiquity to the present.

L. Department of Sociology
Change in curriculum – for both BA and BS with Distinction in Sociology
(Effective: 2015-2016 Bulletin)

<table>
<thead>
<tr>
<th>Current Requirements</th>
<th>Proposed Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Overall GPA of 3.50 or higher and a GPA of 3.50 or higher in the major;</td>
<td>• Overall GPA of 3.50 or higher and a GPA of 3.50 or higher in the major;</td>
</tr>
<tr>
<td>• Successful completion of requirements for the Sociology major;</td>
<td>• Successful completion of requirements for the Sociology major;</td>
</tr>
<tr>
<td>• Research proposal approved by faculty committee;</td>
<td>• Research proposal approved by faculty committee;</td>
</tr>
<tr>
<td>• Successful completion of 3 hours SOCY 399 including written and oral presentation of research project.</td>
<td>• Successful completion of 3-6 hours SOCY 599 including written and oral presentation of research project.</td>
</tr>
</tbody>
</table>

Students who successfully complete these requirements will be awarded their degree with “Distinction in Sociology” upon graduation.

M. Department of Statistics
Change in curriculum – BS in Statistics – Major Prerequisites
(Effective: 3015-2016 Bulletin)

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Select one course from the following:</strong></td>
<td><strong>Select one course from the following:</strong></td>
</tr>
<tr>
<td>• MATH 526 - Numerical Linear Algebra</td>
<td>• MATH 344 – Applied Linear Algebra</td>
</tr>
<tr>
<td>• MATH 544 - Linear Algebra</td>
<td>• MATH 544 - Linear Algebra</td>
</tr>
</tbody>
</table>

Students who successfully complete these requirements will be awarded their degree with “Distinction in Sociology” upon graduation.
Change to prerequisites (Effective: 2015-2016 Bulletin)
From: STAT 511 Probability. [=MATH 511] (3)
Prereq: Grade of C of higher or concurrent in MATH 241)
To: STAT 511 Probability. [=MATH 511] (3)
Prereq: C or higher or concurrent enrollment in MATH 241, or consent of the Undergraduate Director

From: STAT 522 Financial Mathematics I. [=MATH 514]
Prereq: a grade of C or better in MATH 241
To: STAT 522 Financial Mathematics I. [=MATH 514]
Prereq: C or better in MATH 241, or consent of the Undergraduate Director

From: STAT 523 Financial Mathematics II. [=MATH 515]
Prereq: MATH 514 or STAT 522 with a grade of C or better
To: STAT 523 Financial Mathematics II. [=MATH 515]
Prereq: C or better in MATH 514 or STAT 522, or consent of the Undergraduate Director

Change in description and prerequisite (Effective: 2015-2016)
From: STAT 515 Statistical Methods I. (3) Applications and principles of descriptive
statistics, elementary probability, sampling distributions, estimation, and
hypothesis testing. Inference for means, variances, proportions, simple
linear regression, and contingency tables. Statistical packages such as
SAS.
Prereq: a grade of C or higher in MATH 111 or equivalent
To: STAT 515 Statistical Methods I. (3) Applications and principles of elementary
probability, essential discrete and continuous probability distributions,
sampling distributions, estimation, and hypothesis testing. Inference for
means, variances, proportions, one-way ANOVA, simple linear
regression, and contingency tables. Statistical packages such as SAS or R.
Prereq: A grade of C or higher in MATH 122 or MATH 141; or both
MATH 111 or higher and any statistics class

New course (Effective: 2015-2016)
STAT 587 Big Data Analytics [=CSCE 587] (3) Foundational techniques and tools
required for data science and big data analytics. Concepts, principles, and techniques applicable
to any technology and industry for establishing a baseline that can be enhanced by future study.
Prereq: STAT 509, 513, or 515

N. Department of Theatre and Dance
Change in credit hours (Effective: 2015-2016 Bulletin)

From: DANC 202 Ballet Technique II. (2)
To: DANC 202 Ballet Technique II. (1 to 2 variable)

Change in title and description (Effective: 2015-2016 Bulletin)

From: DANC 281 American and European Dance History. (3) An overview of the development of theatrical dance of the 18th, 19th and 20th centuries. Readings, discussions, lectures, and films will introduce selected choreographers and the concerns that inform their work.
To: DANC 281 Dance History I. (3) Overview of the development of dance through the 19th century.

Change in title, description and prerequisite (Effective: 2015-2016 Bulletin)

From: DANC 282 World Dance History and Culture. (3) Examines traditional and contemporary dance from the US and around the world. Students will gain an overall understanding of how to view/appreciate and critique ethnic dance from other cultures.
To: DANC 282 Dance History II. (3) Development of dance from the 20th century to the present. Prereq: DANC 281

From: DANC 490 Senior Capstone Concert. (3) This course is the culmination of the performance/choreography dance major. A senior project that encompasses a complete choreographic work leading to stage production and performance. Prereq: DANCE 160, 360, plus other dance and major requirements before last semester of senior year
To: DANC 490 Senior Capstone Dance Project. (3) Culmination of the performance/choreography dance emphasis. Senior project encompassing a choreographic work or research thesis. Prereq: DANC 160 and DANC 360

Change in description and prerequisite (Effective: 2015-2016 Bulletin)

From: DANC 310 Dance Analysis and Criticism. (3) This is an advanced course in dance analysis and criticism, labonotation, analysis of major choreographic work, and an analysis through interactive CD-ROM (Technology). Prereq: DANC 160, 281, 282, 360, two dance forms (8 hours), junior status recommended
To: DANC 310 Dance Analysis and Criticism. (3) Theoretical practices and cultural perspectives of dance making. Prereq: DANC 281 and DANC 282

From: DANC 460 Choreography II. (3) An advanced level choreography course. Specialized work in dance using musical forms and based on different dance techniques.
Prereq: DANC 360 or permission from instructor; recommend students have completed at least five semesters of technique

To: DANC 460 Choreography II. (3) An intermediate level choreography course to further examine choreographic construction methods. Prereq: DANC 160 and three semesters of technique courses

**Deletion (Effective: 2015-2016)**

THEA 119 Introduction to Theatre Production Laboratory. (1)

**New course (Effective: 2015-2016)**

THEA 380 Production Design for Theatre. (3) Principles of production design in scenery, costumes, lighting and sound. Play analysis, periods styles, creative and visual thinking and graphic representation. Prereq: THEA 280

Restricted to: Theater majors

Special Permission: By instructor

THEA 490 Theatre Capstone Course. (3) Principles, procedures and practice of the creative and collaborative process. Aspects of the discipline with focus on creative and effective collaboration and communication skills among theatre artists, scholars and technicians. Practical and planning skills for professional success after graduation. Prereq: THEA 270 and THEA 280, and 6 hours from 300 level class or above

Restricted to: Majors only

Special Permission: By instructor

NOTE: Carolina Core Integrative Course, Theatre, BA

THEA 527 Applied Theatre Arts. (3) Principles and practices of theatre-making within community contexts to address local issues and to provide aesthetic strategies for creative problem solving through theatre. Special Permission: By instructor

**Change in title, description and prerequisite (Effective: 2015-2016)**

From: THEA 120 Theatre Production Laboratory I. (1) Supervised participation in scenic, lighting, costume, promotions, performance, and productions of Mainstage Production Program. Course content will vary according to season production program. Prereq: THEA 119

To: THEA 120 Laboratory Theatre Production. (1) Procedures for implementation of processes involved in the Laboratory Theatre Production Program. Supervised preparation of all performance and production elements involved in the collaborative process of theatre production. Course content varies according to season production program.
Prereq: Permission of Instructor or by audition. May be repeated for credit.

From: THEA 121  Theatre Production Laboratory II. (1) Supervised participation in scenic, lighting, costume, promotions, performance, and productions of Mainstage Production Program. Course content will vary according to season production program. Prereq: THEA 120

To: THEA 121  Theatre Running Crew Laboratory. (1) Procedures and processes of running crews for the Mainstage Theatre Production Program. Collaborative teamwork through supervised participation in various theatre production running crews (management, scenic, lighting, sound, costumes and makeup). Course content varies according to season production program. May be repeated for credit.

From: THEA 122  Theatre Production Laboratory III. (1) Supervised participation in scenic, lighting, costume, promotions, performance, and productions of Mainstage Production Program. Course content will vary according to season production program. Prereq: THEA 121

To: THEA 122  Theatre Performance Laboratory. (1) Preparation and procedures of the rehearsal and performance processes for the Mainstage Theatre Production Program. Collaborative teamwork through supervised participation in an acting company. Course content varies according to season production program. By audition only. May be repeated for credit. Prereq: THEA 120

From: THEA 123  Theatre Production Laboratory IV. (1) Supervised participation in scenic, lighting, costume, promotions, performance, and productions of Mainstage Production Program. Prereq: THEA 122

To: THEA 123  Theatre Production Studio. (1) Procedures and processes for the Mainstage Theatre Production Program. Collaborative teamwork through supervised participation in various theatre production student crews (scenic, lighting, sound, costume, makeup, and promotions). Course content varies according to season production program. Prereq: THEA 121

From: THEA 522  Creative Drama. (3) Methods and techniques in developing and leading informal dramatic activity with children.

To: THEA 522  Drama in Education. (3) Comprehensive review of drama strategies, methods and pedagogical practices to be applied to non-drama learning contexts. Practical experience with the necessary skills, philosophies and techniques of drama in education. Prereq: Sophomore standing or higher
**Change in description (Effective: 2015-2016)**

From: THEA 170  
Fundamentals of Acting. (3) An introduction to the craft of acting that explores Stanislavski’s techniques through nonverbal and scripted scene work.

To: THEA 170  
Fundamentals of Acting. (3) Introduction to the art and craft of acting. Practical exploration through improvisation and scripted scene work. Includes a brief history of the development of modern acting techniques.

**Change in prerequisite (Effective: 2015-2016)**

From: THEA 221  
Stage Management Laboratory. (3) Prereq: THEA 119

To: THEA 221  
Stage Management Laboratory. (3) Prereq: THEA 120 and 121

**Change in title and description (Effective: 2015-2016)**

From: THEA 240  
Voice and Diction. (3) The analysis, evaluation, and improvement of speech through a study of the anatomy and physiology of the vocal mechanism, voice production, and articulation.

To: THEA 240  
Beginning Voice and Speech. (3) Study and practical application of voice and speech fundamentals in performance. Emphasis on speaking with ease, power and clarity to impact an audience.

From: THEA 280  
Introductory Theatre Design. (3) Basic principles of design in scenery, costumes, and lighting. Related topics include play analysis, creative and visual thinking, and graphic representation.

To: THEA 280  
Elements of Design for Theatre Production. (3) Foundational application of design principles and vocabulary as applied to the creative process in production design for theatre. Play analysis, creative and visual thinking, and graphic representation.

From: THEA 372  
Movement for Actors. (3) An introduction to theoretical principles and kinesthetic practices involved in the development of characterization through the body.

To: THEA 372  
Acting from a Physical Point of View. (3) Development of physical acting skills related to modern acting techniques emphasizing emotional truthfulness and authenticity. Promoting the experience of full body awareness and expressiveness in character development and storytelling. Includes performatve states of relaxation, balance and presence and ensemble work.

**Change in title, credit hours and description (Effective: 2015-2016 Bulletin)**

From: THEA 241  
Voice Laboratory. (1) Training in vocal skills needed by actors such as dialect and verse speech. May be repeated for a total of seven hours.
To: THEA 241 Voice and Speech Studio. (1-3 variable) Training in vocal skills needed by actors such as dialect, verse speaking and voice for a variety of media. Maybe repeated for credit. Prereq: THEA 240; by permission of instructor

**Change in title (Effective: 2015-2016)**
From: THEA 253 Scenic Technology. (3)
To: THEA 253 Stagecraft. (3)

**Change in description and prerequisite (Effective: 2015-2016 Bulletin)**
From: THEA 270 Beginning Acting. (3) An exploration of the acting process through scene study. Focus will be on developing the actor’s personal technique. Prereq: THEA 170 or declaration of major
To: THEA 270 Beginning Acting. (3) An exploration of the acting process through scene study. Focus will be on developing the actor’s personal technique, emphasizing emotional truthfulness and authenticity.

**Change in cross-listing, description and prerequisite (Effective: 2015-2016 Bulletin)**
To: THEA 370 Intermediate Acting. (3) Development of acting skills through study of acting techniques emphasizing emotional truthfulness and authenticity. Application to scene study, monologues and auditions. Intensive script analysis for character development. Prerq: THEA 170 or 270

**Change in title, cross-listing, description and prerequisite (Effective: 2015-2016 Bulletin)**
From: THEA 440 Advanced Voice and Speech. [=THEA 240] (3) Further study and practice of voice and speech topics as applied to performance. Specific skills covered may include vocal flexibility and range, vocal dynamics, dialects, and voice-over technique.
To: THEA 440 Advanced Voice and Speech for the Actor. (3) Advanced vocal techniques as applied to performance. Specific skills covered may include vocal flexibility and range, vocal dynamics, dialects, and voice-over technique. Prereq: THEA 240

**Change in title, credit hours, description and prerequisite (Effective: 2015-2016 Bulletin)**
From: THEA 572 Advanced Makeup. (2) Specific character types, prosthetics, wig making, and corrective makeup. Special attention to the development of files of character illustrations and the designing of specific makeups. Prereq: THEA 172 or consent of instructor
To: THEA 572 Advanced Makeup for Theatre and Film. (3) Makeup design for specific
character types, prosthetics and three-dimensional makeup effects. Special attention to the process of sculpting and modeling for makeup prosthetics. Prereq: THEA 230 or consent of instructor

## Change in curriculum – Theatre, BA (Effective: 2015-2016 Bulletin)

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major Prerequisites (4 Hours)</strong></td>
<td><strong>Major Prerequisites (3 Hours)</strong></td>
</tr>
<tr>
<td>THEA 201 - Introduction to Theatre Studies</td>
<td>THEA 201 - Introduction to Theatre Studies</td>
</tr>
<tr>
<td>THEA 119 - Introduction to Theatre Production Laboratory</td>
<td></td>
</tr>
<tr>
<td><strong>2. Theatre Major (31 Hours)</strong></td>
<td><strong>2. Theatre Major (31 Hours)</strong></td>
</tr>
<tr>
<td>A minimum grade of C is required in all major courses.</td>
<td>A minimum grade of C is required in all major courses.</td>
</tr>
<tr>
<td><strong>Required Courses (15 Hours)</strong></td>
<td><strong>Required Courses (15 Hours)</strong></td>
</tr>
<tr>
<td>THEA 270 - Beginning Acting</td>
<td>THEA 270 - Beginning Acting</td>
</tr>
<tr>
<td>THEA 280 - Introductory Theatre Design</td>
<td>THEA 280 - Elements of Design for Theatre Production</td>
</tr>
<tr>
<td>THEA 561 - History of the Theatre I</td>
<td>THEA 561 - History of the Theatre I</td>
</tr>
<tr>
<td>THEA 562 - History of the Theatre II</td>
<td>THEA 562 - History of the Theatre II</td>
</tr>
<tr>
<td>THEA 578 - Play Direction I</td>
<td>THEA 490 - Theatre Senior Capstone</td>
</tr>
<tr>
<td><strong>Theatre Production Laboratory (4 Hours)</strong></td>
<td><strong>Theatre Production Laboratory (4 Hours)</strong></td>
</tr>
<tr>
<td>Majors are required to complete 4 hours of Theatre Production Laboratory:</td>
<td>Majors are required to complete 4 hours of Theatre Laboratory credits. All Theatre lab courses maybe repeated for credit. THEA120 and THEA121 are required Laboratory credits. THEA 120 must be completed within the first year of declaring the Theatre major.</td>
</tr>
<tr>
<td>THEA 120 - Theatre Production Laboratory I</td>
<td>THEA 120 - Laboratory Theatre Production</td>
</tr>
<tr>
<td>THEA 121 - Theatre Production Laboratory II</td>
<td>THEA 121 - Theatre Running Crew Laboratory</td>
</tr>
<tr>
<td>THEA 122 - Theatre Production Laboratory III</td>
<td>Plus 2 hours from:</td>
</tr>
<tr>
<td>THEA 123 - Theatre Production Laboratory IV</td>
<td>THEA 120 - Laboratory Theatre Production</td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>THEA 121 - Theatre Running Crew Laboratory</td>
</tr>
<tr>
<td>Of these 4 laboratory credits, only 2 credits may be in performance. THEA 120 and 121 must be completed within the first two years of declaring the Theatre major.</td>
<td>Thea 122 - Theatre Performance Laboratory</td>
</tr>
<tr>
<td></td>
<td>THEA 123 - Theatre Production Studio</td>
</tr>
<tr>
<td></td>
<td>THEA 221 - Stage Management Laboratory</td>
</tr>
<tr>
<td><strong>Theatre Electives (12 Hours)</strong></td>
<td><strong>Theatre Electives (12 Hours)</strong></td>
</tr>
<tr>
<td>Select 6 hours from THEA 200-300 level</td>
<td>Select 6 hours from THEA 200-300 level</td>
</tr>
<tr>
<td>Select 6 hours from THEA 400 or above</td>
<td>Select 6 hours from THEA 400 or above</td>
</tr>
<tr>
<td><strong>Dramatic Literature (6 Hours)</strong></td>
<td><strong>Dramatic Literature (6 Hours)</strong></td>
</tr>
<tr>
<td>Select 6 hours of dramatic literature from ENGL 300 or above*</td>
<td>Select 6 hours of dramatic literature from ENGL 300 or above*</td>
</tr>
<tr>
<td>*May apply towards fulfillment of the Cognate.</td>
<td>*May apply towards fulfillment of the Cognate.</td>
</tr>
</tbody>
</table>

### 2. MOORE SCHOOL OF BUSINESS
A. Department of Accounting
Change in curriculum – BS in Business Administration - Accounting
(Effective: 2015-2016 Bulletin)

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
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<tbody>
<tr>
<td><strong>Curriculum (127 Hours)</strong></td>
<td><strong>Curriculum (125 Hours)</strong></td>
</tr>
<tr>
<td><em>Major Requirements (69 Hours)</em></td>
<td><em>Major Requirements (67 Hours)</em></td>
</tr>
<tr>
<td>See Moore School of Business for entrance requirements, progression requirements, and other regulations.</td>
<td>See Moore School of Business for entrance requirements, progression requirements, and other regulations.</td>
</tr>
<tr>
<td>1. General Education Requirements (40-44 Hours)</td>
<td>1. General Education Requirements (40-44 Hours)</td>
</tr>
<tr>
<td>2. Business Core (40 Hours)</td>
<td>2. Business Core (40 Hours)</td>
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<tr>
<td>3. Communication (Included in General Education Requirements)</td>
<td>3. Communication (Included in General Education Requirements)</td>
</tr>
<tr>
<td>4. Accounting (26 Hours)</td>
<td>4. Accounting (24 Hours)</td>
</tr>
<tr>
<td>5. Internationalization Requirement (9 Hours)</td>
<td>5. Internationalization Requirement (9 Hours)</td>
</tr>
<tr>
<td>6. Directed General Education Course Work (non-BA) (minimum of 18 Hours)</td>
<td>6. Directed General Education Course Work (non-BA) (minimum of 18 Hours)</td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4. Accounting (26 Hours)</strong></td>
<td><strong>4. Accounting (24 Hours)</strong></td>
</tr>
<tr>
<td>ACCT 401 - Financial Accounting I</td>
<td>ACCT 401 - Financial Accounting I</td>
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<tr>
<td>ACCT 402 - Cost/Managerial Accounting</td>
<td>ACCT 402 - Cost/Managerial Accounting</td>
</tr>
<tr>
<td>ACCT 403 - Tax I</td>
<td>ACCT 403 - Tax I</td>
</tr>
<tr>
<td>ACCT 404 - Accounting Information Systems I</td>
<td>ACCT 404 - Accounting Information Systems I</td>
</tr>
<tr>
<td>ACCT 405 - Financial Accounting II</td>
<td>ACCT 405 - Financial Accounting II</td>
</tr>
<tr>
<td>ACCT 406 - Auditing I</td>
<td>ACCT 406 - Auditing I</td>
</tr>
<tr>
<td>ACCT 502 - Advanced Cost/Managerial Accounting</td>
<td>ACCT 500-level course selected by student from approved electives</td>
</tr>
<tr>
<td>ACCT 502L - Advanced Cost/managerial Accounting Lab</td>
<td></td>
</tr>
</tbody>
</table>

**Change in credit hours and prerequisite (Effective: 3015-2016 Bulletin)**

From: ACCT 401 Financial Accounting I. (4)  
Prereq: ACCT 226

To: ACCT 401 Financial Accounting I. (3)  
Prereq: ACCT 226 and satisfactory performance on the department’s Accounting Readiness Examination.
**Deletion** (Effective: 3015-2016 Bulletin)
ACCT 502L Advanced Cost/Managerial Accounting Lab. (1)

**B. Department of International Business**

**Change in credit hours** (Effective: 2015-2016 Bulletin)

From: IBUS 490 Specialized Study in International Business. (1-12)
To: IBUS 490 Specialized Study in International Business. (0-12)

3. COLLEGE OF EDUCATION

**A. Department of Instruction and Teacher Education**

**Change in corequisites** (Effective: 2015-2016 Bulletin)

From: EDEC 342 The Young Child: Development, Care, and Education (3-8 Years). (3)
Coreq: EDEC 342P and EDEC 347
To: EDEC 342 The Young Child: Development, Care, and Education (3-8 Years). (3)
Coreq: EDEC 342P, EDEC 344, EDEC 347 and EDRD 345

From: EDEC 342P The Young Child: Development, Care, and Education (3-8 Years) Practicum. (3)
Coreq: EDEC 342 and EDEC 347
To: EDEC 342P The Young Child: Development, Care, and Education (3-8 Years) Practicum. (3)
Coreq: EDEC 342, EDEC 344, EDEC 347 and EDRD 345

From: EDEC 344 Supporting Linguistic Pluralism Across Content Areas. (3)
Coreq: EDEC 342 and EDEC 342P
To: EDEC 344 Supporting Linguistic Pluralism Across Content Areas. (3)
Coreq: EDEC 342, EDEC 342P, EDEC 347 and EDRD 345

From: EDEC 347 Community of Learners and Classroom Management in Early Childhood. (3)
Coreq: EDEC 342 and EDEC 342P
To: EDEC 347 Community of Learners and Classroom Management in Early Childhood. (3)
Coreq: EDEC 342, EDEC 342P, EDEC 344 and EDRD 345

From: EDRD 345 Teaching Reading in Early Childhood Education. (3)
To: EDRD 345 Teaching Reading in Early Childhood Education. (3)
Coreq: EDEC 342, EDEC 342P, EDEC 344 and EDEC 347

**Change in curriculum – BA in Early Childhood Education**

(Effective: 2015-2016 Bulletin)

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
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<tbody>
<tr>
<td></td>
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33
<table>
<thead>
<tr>
<th>Curriculum</th>
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</tr>
</thead>
<tbody>
<tr>
<td>(Total semester hours: <strong>124-133</strong>)</td>
<td>(Total semester hours: <strong>123-132</strong>)</td>
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<tr>
<td>4. Education (<strong>72 hours</strong>)</td>
<td>4. Education (<strong>71 hours</strong>)</td>
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<tr>
<td>Grade of C or better required.</td>
<td>Grade of C or better required.</td>
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<tr>
<td><strong>A. Education Core (45 Hours)</strong></td>
<td><strong>A. Education Core (14 Hours)</strong></td>
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<tr>
<td>- EDEC 201 - Inquiry into Early Childhood Education</td>
<td>- EDEC 201 - Inquiry into Early Childhood Education</td>
</tr>
<tr>
<td>- EDFN 300 - Schools In Communities</td>
<td>- EDFN 300 - Schools In Communities</td>
</tr>
<tr>
<td>- EDPY 401 - Learners and the Diversity of Learning</td>
<td>- EDPY 401 - Learners and the Diversity of Learning</td>
</tr>
<tr>
<td>- EDPY 401P - Practicum - Learners and the Diversity of Learning</td>
<td>- EDRM 423 - Introduction to Classroom Assessment</td>
</tr>
<tr>
<td>- EDRM 423 - Introduction to Classroom Assessment</td>
<td>- EDEX 523 - Introduction to Exceptional Children</td>
</tr>
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<td>- EDEX 523 - Introduction to Exceptional Children</td>
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</tbody>
</table>

### Change in curriculum – BA in Elementary Education
(Effective: 2015-2016 Bulletin)

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree Requirements</td>
<td>Degree Requirements</td>
</tr>
<tr>
<td>(Total Semester Hours: <strong>122-128</strong>)</td>
<td>(Total Semester Hours: <strong>121-127</strong>)</td>
</tr>
<tr>
<td>4. Education (<strong>64 Hours</strong> - grade of B or better required in EDEL 505, 505P, 441, and EDRD 430 - grade of C or better required in all other Education courses)</td>
<td>4. Education (<strong>63 Hours</strong> - grade of B or better required in EDEL 505, 505P, 441, and EDRD 430 - grade of C or better required in all other Education courses)</td>
</tr>
<tr>
<td>Education Core (45 Hours)</td>
<td>Education Core (14 Hours)</td>
</tr>
<tr>
<td>EDTE 201 - Issues and Trends in Teaching and Learning</td>
<td>EDTE 201 - Issues and Trends in Teaching and Learning</td>
</tr>
<tr>
<td>EDFN 300 - Schools In Communities</td>
<td>EDFN 300 - Schools In Communities</td>
</tr>
<tr>
<td>EDPY 401 - Learners and the Diversity of Learning</td>
<td>EDPY 401 - Learners and the Diversity of Learning</td>
</tr>
<tr>
<td>EDPY 401P - Practicum - Learners and the Diversity of Learning</td>
<td>EDRM 423 - Introduction to Classroom Assessment</td>
</tr>
<tr>
<td>EDRM 423 - Introduction to Classroom Assessment</td>
<td>EDEX 523 - Introduction to Exceptional Children</td>
</tr>
<tr>
<td>EDEX 523 - Introduction to Exceptional Children</td>
<td></td>
</tr>
</tbody>
</table>

### Change in curriculum – BA in Middle Level Education

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### Current Degree Requirements (123–134 Hours)

3. Education (47 Hours)  
Grade of C or better required  
A. Education Core (44 Hours)  
EDTE 201 - Issues and Trends in Teaching and Learning  
EDFN 300 - Schools In Communities  
EDTE 400 - Learning Through Community Service  
EDPY 401 - Learners and the Diversity of Learning  
EDPY 401P - Practicum: Learners and the Diversity of Learning

### Proposed Degree Requirements (122-133 Hours)

3. Education (46 Hours)  
Grade of C or better required  
A. Education Core (10 Hours)  
EDTE 201 - Issues and Trends in Teaching and Learning  
EDFN 300 - Schools In Communities  
EDTE 400 - Learning Through Community Service  
EDPY 401 - Learners and the Diversity of Learning

### Change in curriculum – BS in Middle Level Education
(Effective: 2015-2016 Bulletin)

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
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<tbody>
<tr>
<td>Degree Requirements (123–134 Hours)</td>
<td>Degree Requirements (122-133 Hours)</td>
</tr>
<tr>
<td>3. Education (47 Hours)</td>
<td>3. Education (46 Hours)</td>
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<td>Grade of C or better required</td>
<td>Grade of C or better required</td>
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<tr>
<td>A. Education Core (44 Hours)</td>
<td>A. Education Core (10 Hours)</td>
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<td>EDTE 201 - Issues and Trends in Teaching and Learning</td>
<td>EDTE 201 - Issues and Trends in Teaching and Learning</td>
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<td>EDFN 300 - Schools In Communities</td>
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<td>EDTE 400 - Learning Through Community Service</td>
<td>EDTE 400 - Learning Through Community Service</td>
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<tr>
<td>EDPY 401 - Learners and the Diversity of Learning</td>
<td>EDPY 401 - Learners and the Diversity of Learning</td>
</tr>
<tr>
<td>EDPY 401P - Practicum: Learners and the Diversity of Learning</td>
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</tbody>
</table>

### B. Department of Physical Education and Athletic Training
Change in prerequisite and corequisites (Effective: 2015-2016 Bulletin)

From: PEDU 341  
Practicum in Instruction of Young Learners in Movement Settings. (1)  
Prereq: PEDU 361
To: PEDU 341  Practicum in Instruction of Young Learners in Movement Settings. (1)
Coreq: PEDU 361
Prereq: PEDU 340

**Change in prerequisite (Effective: 2015-2016 Bulletin)**

From: PEDU 361  Instruction of Young Learners in Movement Settings. (3)
Prereq: PEDU 360, cumulative GPA of 2.50 or consent of instructor
To: PEDU 361  Instruction of Young Learners in Movement Settings. (3)
Prereq: PEDU 360, cumulative overall GPA of 2.50 or consent of instructor, have met the state basic skills testing requirement for educator preparation program admission

**Note:** In Fall 2017, the change in prerequisite will become:
Prereq: PEDU 360, cumulative overall GPA of 2.75 or consent of instructor, have met the state basic skills testing requirement for educator preparation program admission

From: PEDU 462  Instruction in Secondary School Physical Education. (3)
Prereq: PEDU 361, cumulative GPA of 2.50 or consent of instructor
To: PEDU 462  Instruction in Secondary School Physical Education. (3)
Prereq: PEDU 361, cumulative overall GPA of 2.50 or consent of instructor, have met the state basic skills testing requirement for educator preparation program admission

**Note:** In Fall 2017, the change in prerequisite will become:
Prereq: PEDU 361, cumulative overall GPA of 2.75 or consent of instructor, have met the state basic skills testing requirement for educator preparation program admission

**Change in course number (Effective: 2015-2016 Bulletin)**

From: PEDU 545  Measurement and Evaluation in Physical Education. (3)
To: PEDU 445  Measurement and Evaluation in Physical Education. (3)

**Change in curriculum – Physical Education B.S.P.E (Effective: 2015-2016 Bulletin)**

<table>
<thead>
<tr>
<th>Current</th>
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<tr>
<td>B. S. in Physical Education - Teacher Certification</td>
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</table>
## B. S. in Physical Education - Teacher Certification (127-139 hours)

1. Carolina Core Plus Physical Education General Education (46-58 hours)
   I. Lower Division (43-49 Hours)

## Change II

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
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</thead>
<tbody>
<tr>
<td>AIU: Aesthetic and Interpretive Understanding (6 Hours)</td>
<td>AIU: Aesthetic and Interpretive Understanding (3 Hours)</td>
</tr>
<tr>
<td>Complete 6 hours (two courses) as follows:</td>
<td>Select any Carolina Core approved course for AIU</td>
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<tr>
<td>- ENGL 283 – Themes in British Writing or ENGL 285 – Themes in American Writing</td>
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<tr>
<td>- Any other Carolina Core Approved Course for AIU</td>
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## Change III

<table>
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<tr>
<th>Current</th>
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<tr>
<td>CMS: Effective, Engaged, and Persuasive Communication: Spoken Component (3 Hours)</td>
<td>CMS: Effective, Engaged, and Persuasive Communication: Spoken Component (0-3 Hours)</td>
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<tr>
<td>Complete 3 hours (one course) as follows:</td>
<td>Select any Carolina Core approved course for CMS</td>
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<tr>
<td>SPCH 140 – Public Communication</td>
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</tbody>
</table>

## 4. COLLEGE OF ENGINEERING AND COMPUTING

### A. Department of Biomedical Engineering

#### Change in prerequisite (Effective: 2015-2016 Bulletin)

From: BMEN 260 Introduction to Biomechanics. (3)  
Prereq: MATH 241, PHYS 211

To: BMEN 260 Introduction to Biomechanics. (3)  
Prereq: MATH 241, PHYS 211, grade of C or better in BMEN 211

#### Change in curriculum – BS Biomedical Engineering (Effective: 2015-2016 Bulletin)
**Current Curriculum**

See College of Engineering and Computing for entrance requirements, progression requirements, and special academic opportunities.

**Degree Requirements (130 Hours)**

**Major Requirements (96 Hours)**

See College of Engineering and Computing for entrance requirements, progression requirements, and other regulations.

1. Carolina Core Requirements (34-48 Hours)
2. Other Science Education Requirements (33 Hours)
3. Biomedical Engineering Core Requirements (41 Hours)
4. Technical Electives (6 Hours)
5. Technical Laboratory Electives (1 Hour)
6. Engineering Electives (6 Hours)
7. Biomedical Engineering Electives (9 Hours)

**Carolina Core Requirements (34-48 Hours)**

**CMW: Effective, Engaged, and Persuasive Communication: Written Component (6 Hours)**

- ENGL 101 - Critical Reading and Composition
- ENGL 102 - Rhetoric and Composition

**ARP: Analytical Reasoning and Problem-Solving (8 Hours)**

- MATH 141 - Calculus I
- MATH 142 - Calculus II

**SCI: Scientific Literacy (8 Hours)**

- CHEM 111 - General Chemistry I
- BIOL 101 - Biological Principles I

**Proposed Curriculum (130-142 Hours)**

1. Carolina Core (34-46 Hours)
2. Other General Requirements (36 hours)
3. Lower Division Engineering (11 hours)
4. Biomedical Engineering Major (27 Hours)
5. Biomedical Engineering Electives (9 Hours)
6. Engineering Electives (6 hours)
7. Technical Electives (6 Hours)
8. Technical Laboratory Elective (1 credit)

1. Carolina Core (34-46 hours)

CMW: Effective, Engaged, and Persuasive
Communication: Written Component (6 hours)

- ENGL 101 - Critical Reading and Composition
- ENGL 102 - Rhetoric and Composition

ARP: Analytical Reasoning & Problem-Solving (8 hours)

- MATH 141 - Calculus I
- MATH 142 - Calculus II

SCI: Scientific Literacy (8 hours)

- BIOL 101 - Biological Principles I
- BIOL 101L - Biological Principles I Laboratory
- CHEM 111 - General Chemistry I
- CHEM 111L - General Chemistry I Lab

AIU: Aesthetic and Interpretive Understanding (3 hours)

- Any approved Carolina Core AIU course

GFL: Global Citizenship and Multicultural
Understanding: Foreign Language (0-6 hours)

- Score two or better on foreign language placement test; or complete the 109 and 110 courses in FREN,
### BIOL 101L - Biological Principles I Laboratory

**GFL: Global Citizenship and Multicultural Understanding: Foreign Language (0-8 Hours, depending on placement test)**

Students shall demonstrate in one Foreign Language the ability to comprehend the main ideas in written and, with the exception of Latin and Ancient Greek, spoken texts on familiar subjects. This ability can be demonstrated by achieving a score of two or better on a USC foreign language test. Those failing to do so must satisfactorily complete equivalent study of foreign language at USC.

**GHS: Global Citizenship and Multicultural Understanding: Historical Thinking (3 Hours)**

- Any approved Carolina Core course for Historical Thinking

**GSS: Global Citizenship and Multicultural Understanding: Social Sciences (3 Hours)**

- Any approved Carolina Core course for Social Sciences

**AIU: Aesthetic and Interpretive Understanding (3 Hours)**

- Any approved Carolina Core course for Aesthetic and Interpretive Understanding

**CMS: Effective, Engaged, and Persuasive Communication (0-3 Hours)**

- Any approved Carolina Core course for Persuasive Communication. This requirement may be met using an overlay course that combines learning outcomes from two Carolina Core components.

**INF: Information Literacy (0-3 Hours)**

- USC ENGL 102 or any approved overlay or stand-alone Carolina Core INF course

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2. Other General Requirements (36 hours)

- BIOL 102 - Biological Principles II
- BIOL 102L - Biological Principles II Laboratory
- BIOL 302 - Cell and Molecular Biology
- BIOL 302L - Cell and Molecular Biology Laboratory
- CHEM 112 - General Chemistry II
- CHEM 112L – General Chemistry II Lab
- CHEM 333 - Organic Chemistry I
- CHEM 331L - Essentials of Organic Chemistry Laboratory I**
- MATH 241/250 - Vector Calculus
met using an overlay course that combines learning outcomes from two Carolina Core components.

**VSR: Values, Ethics, and Social Responsibility (0-3 Hours)**

- Any approved Carolina Core course for Values, Ethics, and Social Responsibility.

**Other Science Education Requirements (33 Hours)**

**8 credit hours of college biology:**

- BIOL 102 - Biological Principles II
- BIOL 102L - Biological Principles II Laboratory
- BIOL 302 - Cell and Molecular Biology
- BIOL 302L - Cell and Molecular Biology Laboratory

**8 credit hours of college chemistry:**

- CHEM 111 - General Chemistry I
- CHEM 333 - Organic Chemistry I
- CHEM 331L - Essentials of Organic Chemistry Laboratory I and Chemistry Laboratory Elective (1 Hour)

**6 credit hours of college mathematics:**

- MATH 141 - Calculus I
- MATH 142 - Calculus II
- MATH 241 - Vector Calculus
- MATH 242 - Elementary Differential Equations

**3 credit hours of statistics:**

- MATH 242 - Elementary Differential Equations
- PHYS 211 - Essentials of Physics I
- PHYS 211L - Essentials of Physics I Lab
- PHYS 212 - Essentials of Physics II
- PHYS 212L - Essentials of Physics II Lab
- STAT 509 - Statistics for Engineers
- ECHE 320 - Chemical Engineering Fluid Mechanics or ENCP 360 - Fluid Mechanics

**3. Lower Division Engineering (11 hours)**

- BMEN 101 - Professional Development and Ethics in Biomedical Engineering I
- BMEN 202 - Professional Development and Ethics in Biomedical Engineering II
- BMEN 211 - Mathematical Modeling in Biomedical Engineering I
- BMEN 260 - Introduction to Biomechanics
- BMEN 290 - Thermodynamics of Biomolecular Systems

**4. Biomedical Engineering Major (27 hours)**

- BMEN 271 - Introduction to Biomaterials
- BMEN 303 - Professional Development and Ethics in Biomedical Engineering III
- BMEN 321 - Biomonitoring and Electrophysiology
- BMEN 345 - Human Anatomy and Physiology for Biomedical Engineers
- BMEN 354 - Biotransport
- BMEN 361 - Biomedical Instrumentation
- BMEN 391 - Kinetics in Biomolecular Systems
- BMEN 427 - Senior Biomedical Engineering Design I
STAT 509 - Statistics for Engineers

8 credit hours of college physics:

- PHYS 211 - Essentials of Physics I
- PHYS 211L - Essentials of Physics I Lab
- PHYS 212 - Essentials of Physics II
- PHYS 212L - Essentials of Physics II Lab

Biomedical Engineering Core Requirements (41 Hours)

- ECHE 320 - Chemical Engineering Fluid Mechanics
- BMEN 101 - Professional Development and Ethics in Biomedical Engineering I
- BMEN 202 - Professional Development and Ethics in Biomedical Engineering II
- BMEN 211 - Mathematical Modeling in Biomedical Engineering I
- BMEN 260 - Introduction to Biomechanics
- BMEN 271 - Introduction to Biomaterials
- BMEN 290 - Thermodynamics of Biomolecular Systems
- BMEN 291 - Professional Development and Ethics in Biomedical Engineering III
- BMEN 321 - Biomonitoring and Electrophysiology
- BMEN 345 - Human Anatomy and Physiology for Biomedical Engineers
- BMEN 354 - Biotransport
- BMEN 361 - Biomedical Instrumentation
- BMEN 391 - Kinetics in Biomolecular Systems
- BMEN 427 - Senior Biomedical Engineering Design I
- BMEN 428 - Senior Biomedical Engineering Design II

Technical Electives (6 Hours)

Students must take 6 credit hours of technical electives. A listing of acceptable technical electives is shown below. This list is also available in the Biomedical Engineering Advisement Booklet as well as via a link from the Biomedical Engineering website. In addition, this list is maintained in the Biomedical Engineering office.

- BMEN 428 - Senior Biomedical Engineering Design II

5. Biomedical Engineering Electives (9 Hours)
   Students must take 9 credit hours of Biomedical Engineering Electives. Of these 9 credit hours, at most 3 credit hours may come from BMEN 499 Independent Research. A list of acceptable Biomedical Engineering Electives is maintained in the Biomedical Engineering office and on its [website](#).

6. Engineering Electives (6 hours)
   Students must take 6 credit hours of Engineering Electives. A list of acceptable Engineering Electives is maintained in the Biomedical Engineering office and on its [website](#).

7. Technical Electives (6 Hours)
   Students must take 6 credit hours of Technical Electives. A list of acceptable Technical Electives is maintained in the Biomedical Engineering office and on its [website](#).

8. Technical Laboratory Elective (1 credit)
   Students must take 1 credit hour of Technical Laboratory Elective. A list of acceptable Technical Laboratory Electives is maintained in the Biomedical Engineering office and on its [website](#).

Academic Standards

Minimum Course Grades
   The Biomedical Engineering B.S. program requires that a grade of “C” or better be earned in each of the following courses: BMEN 211, BIOL 101, BIOL 101L, CHEM 111, CHEM 111L, ENGL 101, ENGL 102, MATH 141, MATH 142, PHYS 211, PHYS 211L.

Progression Requirements
   Progression requirement policies are described in the [College of Engineering and Computing](#) section of this bulletin. For the purpose of these policies, Lower Division courses for the Biomedical Engineering B.S. program consist of: BMEN 101, BMEN 211, BMEN 260,
- Any engineering elective
- Any biomedical engineering elective
- BIOL 250 - Microbiology
- BIOL 303 - Fundamental Genetics
- BIOL 415 - Comparative Vertebrate Anatomy
- BIOL 460 - General Physiology
- BIOL 505 - Developmental Biology
- BIOL 530 - Histology
- BIOL 541 - Biochemistry or CHEM 550 - Biochemistry
- BIOL 545 - Biochemistry/Molecular Biology I or CHEM 556 - Biochemistry/Molecular Biology II
- BIOL 546 - Biochemistry/Molecular Biology II or CHEM 556 - Biochemistry/Molecular Biology II
- BIOL 620 - Immunobiology
- BIOL 635 - Neurobiology
- BIOL 653 - Bioinformatics
- BIOL 655 - Biotechnology
- BIOL 656 - Experimental Biotechnology
- BIOL 665 - Human Molecular Genetics
- BIOL 690 - Ultramicroscopy
- CHEM 321 - Quantitative Analysis
- CHEM 321L - Quantitative Analysis Laboratory
- CHEM 334 - Organic Chemistry II
- CHEM 340 - Elementary Biophysical Chemistry
- CHEM 541 - Physical Chemistry
- CHEM 542 - Physical Chemistry
- CHEM 545 - Physical Biochemistry
- EXSC 630 - The Physiology of Muscular Activity
- MATH 520 - Ordinary Differential Equations
- MATH 521 - Boundary Value Problems and Partial Differential Equations
- MATH 524 - Nonlinear Optimization
- MATH 526 - Numerical Linear Algebra or MATH 544 - Linear Algebra
- MATH 546 - Algebraic Structures I
- MATH 547 - Algebraic Structures II
- MATH 550 - Vector Analysis
- MATH 552 - Applied Complex Variables

### Technical Lab Elective (1 Hour)

Students must take 1 credit hour of technical lab elective. A listing of acceptable technical lab electives is shown below. This list is also available in the Biomedical Engineering Advisement Booklet as well as via a link from the Biomedical Engineering website. In addition, this list is maintained in the Biomedical Engineering office.

BMEN 290, BIOL 101, BIOL 101L, BIOL 102, BIOL 102L, CHEM 111, CHEM 111L, CHEM 112, CHEM 112L, PHYS 211, PHYS 212, ENGL 101, ENGL 102, MATH 141, MATH 142, MATH 241 or 250, and MATH 242. Upper Division courses for the Biomedical Engineering B.S. program consist of all BMEN courses numbered 303 and above and ECHE 320 or equivalent.

### Major GPA

Major GPA requirement policies are described in the *College of Engineering and Computing* section of this bulletin. For the purpose of these policies, the following courses are used to determine the Major GPA for the Biomedical Engineering B.S. program: all Lower Division Engineering courses, all Biomedical Engineering Major courses, all courses used to satisfy a Biomedical Engineering Elective, all courses used to satisfy an Engineering Elective, and ECHE 320 or equivalent.

### Notes

* Courses for CMS, INF and VSR must be selected to include at least 3 credit hours combined.

** CHEM 333L is a 2 credit course that may be taken in lieu of CHEM 331L and also satisfy the Technical Laboratory Elective requirement.
- CHEM 333L - Comprehensive Organic Chemistry Laboratory I
- This 2 credit course may be taken in lieu of CHEM 331L and satisfy the technical lab elective requirement
- BIOL 250L - Microbiology Laboratory
- BIOL 460L - General Physiology Laboratory
- BIOL 505L - Developmental Biology Laboratory I
- BIOL 541L - Biochemistry Laboratory

- or

  CHEM 550L - Biochemistry Laboratory

- CHEM 321L - Quantitative Analysis Laboratory
- CHEM 334 - Organic Chemistry II
- CHEM 334L - Comprehensive Organic Chemistry Laboratory II
- CHEM 340L - Elementary Biophysical Chemistry Laboratory
- CHEM 541L - Physical Chemistry Laboratory
- CHEM 542L - Physical Chemistry Laboratory

**Engineering Electives (6 Hours)**

Students must take 6 credit hours of engineering electives. A listing of acceptable engineering electives is shown below. This list is also available in the Biomedical Engineering Advisement Booklet as well as via a link from the Biomedical Engineering website. In addition, this list is maintained in the Biomedical Engineering Office.

- Any biomedical engineering elective
- ECHE 300 - Chemical Process Principles
- ECHE 321 - Heat-Flow Analysis
- ECHE 322 - Mass-Transfer
- ECHE 430 - Chemical Engineering Kinetics
- ECHE 440 - Separation Process Design
- ECHE 550 - Chemical-Process Dynamics and Control
- ECHE 572 - Polymer Processing
- ELCT 220 - Electrical Engineering for Non-Majors
- EMCH 516 - Control Theory in Mechanical Engineering
- EMCH 532 - Intermediate Dynamics
- EMCH 554 - Intermediate Heat Transfer
Biomedical Engineering Electives (9 Hours)

Students must take 9 credit hours of Biomedical Engineering electives. Of these 9 credit hours, at most 3 credit hours may come from BMEN 499 Independent Research. A listing of acceptable Biomedical Engineering electives is shown below. This list is also available in the Biomedical Engineering Advisement Booklet as well as via a link from the Biomedical Engineering website. In addition, this list is maintained in the Biomedical Engineering office.

- BMEN 342 – Infectious Disease and Immunology for Biomedical Engineers
- BMEN 389 – Special Topics in Biomedical Engineering for Undergraduates
- May be repeated as course topic varies
- BMEN 392 – Fundamentals of Biochemical Engineering
- BMEN 499 – Independent Research
- BMEN 589 – Special Topics in Biomedical Engineering
- May be repeated as course topic varies. Course topics offered include:
  - BMEN 589A – Introduction to Cardiovascular Engineering
  - BMEN 589W – Microfluidics and Lab-on-a-chip
- EMCH 580 – Mechanics of Solid Biomaterials
- EXSC 535 – Biomechanics of Human Movement
- PSYC 507 – Cognitive Neuroscience

B. Department of Chemical Engineering
Change in curriculum – BSE Chemical Engineering (Effective: 2015-2016 Bulletin)

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<thead>
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**Curriculum**

See College of Engineering and Computing for entrance requirements, progression requirements, and special academic opportunities.

**Degree Requirements (131 hours)**

1. Carolina Core Requirements (31-37 hours)

CMW: Communication—Writing (6 hours)
- ENGL 101 - Critical Reading and Composition
- ENGL 102 - Rhetoric and Composition

ARP: Analytical Reasoning & Problem-Solving (8 hours)
- MATH 141 - Calculus I
- MATH 142 - Calculus II

SCI: Scientific Literacy (8 hours)
- CHEM 111 - General Chemistry I
- PHYS 211 - Essentials of Physics I
- PHYS 211L - Essentials of Physics I Lab

AIU: Aesthetic & Interpretive Understanding (3 hours)
- Any approved Carolina Core AIU course

GFL: Global Citizenship and Multicultural Understanding: Foreign Language (0-6 hours)
- Any approved Carolina Core course(s) or score of two or better on foreign language placement test

GHS: Global Citizenship and Multicultural Understanding: Historical Thinking (3 hours)
- Any approved Carolina Core GHS course

GSS: Global Citizenship and Multicultural Understanding: Social Sciences (3 hours)
- Any approved Carolina Core GSS course

II. Stand-Alone or Overlay Eligible Courses (3-9 hours)

Must include at least three hours not being used to satisfy a Carolina Core requirement in (I) above.

CMS: Effective, Engaged, and Persuasive Communication—(Speech) (0-3 hours)
- Any approved overlay or stand-alone Carolina Core CMS course

INF: Information Literacy (0-3 hours)
- Any approved overlay or stand-alone Carolina Core INF course

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**Curriculum (131 - 143 Hours)**

1. Carolina Core (34-46 hours)
2. Other General Requirements (28 hours)
3. Lower Division Engineering (15 hours)
4. Chemical Engineering Major (30 Hours)
5. Electives (24 Hours)

---

1. Carolina Core (34-46 hours)

CMW: Effective, Engaged, and Persuasive Communication: Written Component (6 hours)
- ENGL 101 - Critical Reading and Composition
- ENGL 102 - Rhetoric and Composition

ARP: Analytical Reasoning & Problem-Solving (8 hours)
- MATH 141 - Calculus I
- MATH 142 - Calculus II

SCI: Scientific Literacy (8 hours)
- CHEM 111 - General Chemistry I
- CHEM 111L - General Chemistry I Lab
- PHYS 211 - Essentials of Physics I
- PHYS 211L - Essentials of Physics I Lab

AIU: Aesthetic and Interpretive Understanding (3 hours)
- Any approved Carolina Core AIU course

GFL: Global Citizenship and Multicultural Understanding: Foreign Language (0-6 hours)
- Any approved Carolina Core GFL course(s) or score of two or better on foreign language placement test

GHS: Global Citizenship and Multicultural Understanding: Historical Thinking (3 hours)
- Any approved Carolina Core GHS course

GSS: Global Citizenship and Multicultural Understanding: Social Sciences (3 hours)
- Any approved Carolina Core GSS course
VSR: Values, Ethics, Social Responsibility (0-3 hours)
• Any approved overlay or stand-alone Carolina Core VSR course

III. Integrative Courses in the Major

Liberal Arts (6 hours)

Major Degree Requirements (91 Hours)

Introduction to Engineering (3 hours)
• ECHE 101 – Introduction to Chemical Engineering
  or
• ENCP 101 – Introduction to Engineering I

Mathematics (6 hours)
• MATH 241 – Vector Calculus
• MATH 242 – Elementary Differential Equations

Chemistry

General Chemistry II (4 hours)
• CHEM 112 – General Chemistry II

Organic Chemistry (6 hours)
• CHEM 333 – Organic Chemistry I
• CHEM 334 – Organic Chemistry II

Chemistry Electives (6 hours)
• Any approved chemistry elective courses

Chemistry Laboratory Electives (2 hours)
• Any approved chemistry laboratory elective course(s)

Essentials of Physics II (4 hours)
• PHYS 212 – Essentials of Physics II
• PHYS 212L – Essentials of Physics II Lab

Introductory Thermodynamics (3 hours)
• ECHE 310 – Introductory Chemical Engineering Thermodynamics
  or
• ENCP 290 – Thermodynamic Fundamentals

Fluid Mechanics (3 hours)
• ECHE 320 – Chemical Engineering Fluid Mechanics
  or
• ENCP 360 – Fluid Mechanics

Chemical Engineering Core Courses (36 hours)

CMS: Effective, Engaged, and Persuasive Communication: Spoken Component (3 hours)
Choose from:
• PHIL 325 – Engineering Ethics (CMS/VSR overlay)
• SAEL 200 - Social Advocacy & Ethical Life (CMS/VSR overlay)
• Any approved overlay or stand-alone Carolina Core CMS course

VSR: Values, Ethics and Social Responsibility (0-3 hours)
Choose from:
• PHIL 325 – Engineering Ethics (CMS/VSR overlay)
• SAEL 200 - Social Advocacy & Ethical Life (CMS/VSR overlay)
• Any approved overlay or stand-alone Carolina Core VSR course

INF: Information Literacy (0-3 hours)
• USC ENGL 102 or any approved overlay or stand-alone Carolina Core INF course

2. Other General Requirements (28 hours)

Required Courses (20 Hours)
• CHEM 112 - General Chemistry II
• CHEM 112L – General Chemistry II Lab
• CHEM 333 - Organic Chemistry I
• CHEM 334 - Organic Chemistry II
• MATH 241 - Vector Calculus
• MATH 242 - Elementary Differential Equations
• PHYS 212 - Essentials of Physics II
• PHYS 212L - Essentials of Physics II Lab

Chemistry Electives (6 hours)
• A list of acceptable Chemistry Elective courses is maintained in the department office and on its website. These include CHEM 321, 511, 533, 541, 542, 545, 550, 555, 556, 621, 622, 623, 624, 633, 644.

Chemistry Laboratory Electives (2 hours)
• A list of acceptable Chemical Laboratory
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<tr>
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<th>Course Title</th>
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<tr>
<td>ECHE 300</td>
<td>Chemical Process Principles</td>
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<tr>
<td>ECHE 311</td>
<td>Chemical Engineering Thermodynamics</td>
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<tr>
<td>ECHE 321</td>
<td>Heat-Flow Analysis</td>
</tr>
<tr>
<td>ECHE 322</td>
<td>Mass Transfer</td>
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<tr>
<td>ECHE 430</td>
<td>Chemical Engineering Kinetics</td>
</tr>
<tr>
<td>ECHE 440</td>
<td>Separation Process Design</td>
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<td>ECHE 460</td>
<td>Chemical Engineering Laboratory I</td>
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<td>ECHE 461</td>
<td>Chemical Engineering Laboratory II</td>
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<td>ECHE 465</td>
<td>Chemical Process Analysis and Design I</td>
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<td>ECHE 466</td>
<td>Chemical Process Analysis and Design II</td>
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<tr>
<td>ECHE 550</td>
<td>Chemical Process Dynamics and Control</td>
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<tr>
<td>ECHE 567</td>
<td>Process Safety, Health, and Loss Prevention</td>
</tr>
</tbody>
</table>

Elective courses is maintained in the department office and on its [website](#). These include CHEM 321L, 331L (or 333L), 332L (or 334L), 541L, 542L, 550L, 591, 592, 621L.

### 3. Lower Division Engineering (15 hours)

- ECHE 101 - Introduction to Chemical Engineering or ENCP 101 - Introduction to Engineering I
- ECHE 300 - Chemical Process Principles
- ECHE 310 - Introductory Chemical Engineering Thermodynamics or ENCP 290 - Thermodynamic Fundamentals
- ECHE 311 - Chemical Engineering Thermodynamics
- ECHE 320 - Chemical Engineering Fluid Mechanics or ENCP 360 - Fluid Mechanics

### 4. Chemical Engineering Major (30 hours)

- ECHE 321 - Heat-Flow Analysis
- ECHE 322 - Mass Transfer
- ECHE 430 - Chemical Engineering Kinetics
- ECHE 440 - Separation Process Design
- ECHE 460 - Chemical Engineering Laboratory I
- ECHE 461 - Chemical Engineering Laboratory II
- ECHE 465 - Chemical-Process Analysis and Design I
- ECHE 466 - Chemical-Process Analysis and Design II
- ECHE 550 - Chemical-Process Dynamics and Control
- ECHE 567 - Process Safety, Health, and Loss Prevention

### 5. Electives (24 hours)

**Engineering Electives (6 hours)**
A list of acceptable Engineering Elective courses is maintained in the department office and on its [website](#). The list includes: ENCP 200 or ECIV 200 or EMCH 200; ENCP 201 or EMCH 201; ENCP 210 or ECIV 210 or EMCH 310; ENCP 260 or ECIV 220 or EMCH 260; ENCP 330 or EMCH 330; ENCP 460, 481, 499, 540; BMEN 211, 260, 271, 290, 300 and above, except 301 and 303; CSCE 211, 212, 240, 313, 317, 374; ECHE 202 (in combination with two credit hours of ECHE 499 for co-op students), 372, 389, 456, 497, 499, 520, 571, 572, 573, 574, and 589; ELCT 220, 221, 222, 300 and above; ECIV 300 and above, except 360; EMCH 300 and above, except 354 and 360.

Technical Electives (12 hours)

- A list of acceptable Technical Elective courses is maintained in the department office and on its [website](#). The list includes all Engineering Electives, Chemistry Electives, and Chemistry Lab Electives; ENCP 102 or EMCH 111; MATH 374, 500 and above; STAT 500 and above, except 541 and 591; BIOL 101, 101L, 102, 102L, 120, 120L, 200 and above; GEOL any course; MSCI any course; PHYS 300 and above; CSCE 145, 146, 206, 210, 215, 350.

Liberal Arts Electives (6 hours)

- A list of acceptable Liberal Arts Elective courses is maintained in the department office and on its [website](#). The list includes all Carolina Core Liberal Arts courses (AIU, CMS, GFL, GHS, GSS, and VSR), and other department-approved courses. At least one of the six courses used to satisfy a Carolina Core Liberal Arts requirement or a Chemical Engineering Liberal Arts Elective requirement must be at the 300-level or above and in the same field of study as one of the other five
Optional Concentrations

Students may opt to pursue any of the following concentrations.

Concentration in Biomolecular Engineering

Students may choose to select program electives to satisfy the requirements for an optional concentration in Biomolecular Engineering. A student must complete both BIOL 102 and BMEN 392. A student must complete a six-hour cell and molecular biology sequence (CHEM 555 and CHEM 556) or (CHEM 550 and BIOL 302). A student must complete two courses (6 credit hours) from the following list of electives: BMEN 546, BMEN 572, BMEN 271, BMEN 389, BMEN 589.

Concentration in Interdisciplinary Engineering

Students may choose to select program electives to satisfy the requirements for an optional concentration in Interdisciplinary Engineering. A student must complete five courses (15 credit hours) from the following list of electives: EMCH 200 (or ECIV 200 or ENCP 200), EMCH 260, EMCH 310, MATH 526, STAT 509, CSCE 206 or ECHE 456, ELCT 220 or ELCT 221, ECHE 372 or EMCH 371, CHEM 621.

Concentration in Materials

Students may choose to select program electives to satisfy the requirements for an optional concentration in Materials. A student must complete five courses (15 credit hours) with two courses (6 credit hours) from ECHE 571, ECHE 572, or ECHE 372. A student must also complete three courses (9 credit hours) from one of three options: (EMCH 200, EMCH 260, and EMCH 310) or (ELCT 220 or ELCT 221, ELCT 363, and ELCT 563 or ELCT 581) or (CHEM 511, CHEM 633, and CHEM 644).

Concentration in Energy

Students may choose to select program electives to satisfy the requirements for an optional concentration in Energy. A student must complete five courses (15 credit hours).
which must include ECHE 573 and ECHE 572, ECHE 571 or ECHE 572. A student must also complete three courses (9 credit hours) from the following list of electives: ECHE 574, ELCT 510, ELCT 563, EMCH 551, EMCH 552, EMCH 553, EMCH 576, EMCH 592, EMCH 594.

NEW SECTION

Academic Standards

Minimum Course Grades
The Chemical Engineering B.S.E. program requires that a grade of “C” or better be earned in each of the following courses: ECHE 101 or ENCP 101, ENGL 101, ENGL 102, MATH 141, MATH 142, CHEM 111, CHEM 111L, PHYS 211, and PHYS 211L.

Progression Requirements
Progression requirement policies are described in the College of Engineering and Computing section of this bulletin. For the purpose of these policies, Lower Division Courses for the Chemical Engineering B.S.E. program consist of: ENGL 101, ENGL 102, MATH 141, MATH 142, MATH 241, CHEM 111, CHEM 111L, CHEM 112, CHEM 112L, PHYS 211, PHYS 211L, PHYS 212, PHYS 212L, and all Lower Division Engineering courses. Upper Division Courses for the Chemical Engineering B.S.E. program consist of all ECHE courses numbered 321 and above.

Major GPA
Major GPA requirement policies are described in the College of Engineering and Computing section of this bulletin. For the purpose of these policies, the following courses are used to determine the Major GPA for the Chemical Engineering B.S.E. program: all Lower Division Engineering courses, all Chemical Engineering Major courses, and all Engineering Electives.

C. Department of Civil and Environmental Engineering
Change in credit hours (Effective: 2015-2016 Bulletin)
From: ECIV 111 Introduction to Engineering Graphics and Visualization. (3)
To: ECIV 111 Introduction to Engineering Graphics and Visualization. (1)
D. Department of Computer Science and Engineering
Change in prerequisites (Effective: 2015-2016 Bulletin)
From: CSCE 551 Theory of Computation. [=MATH 562] (3)
Prereq: CSCE 350 or MATH 526 or 544 or 574
To: CSCE 551 Theory of Computation. [=MATH 562] (3)
Prereq: C or better in CSCE 350 or MATH 344 or 544 or 574, or consent of the Undergraduate Director

From: CSCE 557 Introduction to Cryptography. [=MATH 587] (3)
Prereq: CSCE 145, MATH 241, and either CSCE 355 or MATH 574
To: CSCE 557 Introduction to Cryptography. [=MATH 587] (3)
Prereq: C or better in CSCE 145 or in MATH 241 and in either CSCE 355 or MATH 574, or consent of the Undergraduate Director

From: CSCE 561 Numerical Analysis. [=MATH 527] (3)
Prereq: MATH 242 or 520
To: CSCE 561 Numerical Analysis. [=MATH 527] (3)
Prereq: C or better in MATH 520 or in both MATH 242 and 344, or consent of the Undergraduate Director

Change in cross-listing (Effective: 2015-2016)
From: CSCE 587 Big Data Analytics. (3)
To: CSCE 587 Big Data Analytics. (3) [=STAT 587]

Change in curriculum – BS Computer Information Systems Engineering (Effective: 2015-2016 Bulletin)

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed Curriculum (121 - 131 Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree Requirements (121 hours)</td>
<td>1. Carolina Core (34-44 Hours)</td>
</tr>
<tr>
<td>Major Requirements (63 hours)</td>
<td>2. Other General Education (21 Hours)</td>
</tr>
<tr>
<td>Carolina Core</td>
<td>3. Lower Division Computing (15 Hours)</td>
</tr>
<tr>
<td>AIU: Aesthetic and Interpretive Understanding (3 hours)</td>
<td>4. Computer Information Systems Major (27 Hours)</td>
</tr>
<tr>
<td>ARP: Analytical Reasoning and Problem-Solving (7 hours)</td>
<td>5. Minor in Business Information Management (24 Hours)</td>
</tr>
<tr>
<td>Any approved Carolina Core AIU course</td>
<td>1. Carolina Core (33-46 Hours)</td>
</tr>
</tbody>
</table>

CMW: Effective, Engaged, and Persuasive Communication: Written Component (6 hours)
- ENGL 101 - Critical Reading and Composition
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 122</td>
<td>Calculus for Business Administration and Social Sciences</td>
<td></td>
</tr>
<tr>
<td>or MATH 141</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSCE 145</td>
<td>Algorithmic Design I</td>
<td></td>
</tr>
</tbody>
</table>

**CMW:** Effective, Engaged, and Persuasive Communication: Written Component (6 hours)
- ENGL 101 - Critical Reading and Composition
- ENGL 102 - Rhetoric and Composition

**GSS:** Global Citizenship and Multicultural Understanding: Social Sciences (3 hours)
- Any approved Carolina Core GSS course

**GHS:** Global Citizenship and Multicultural Understanding: Historical Thinking (3 hours)
- Any approved Carolina Core GHS course

**GFL:** Global Citizenship and Multicultural Understanding: Foreign Language (0-8 hours)
- Any approved Carolina Core course(s) for GFL or score of two or better on foreign language placement test

**SCI:** Scientific Literacy (8 hours)
- Any approved Carolina Core SCI courses, must include two labs

**CMS:** Effective, Engaged, and Persuasive Communication: Spoken Component (3 hours)
- SPCH 140 - Public Communication

**INF:** Information Literacy (0-3 Hours)
- USC ENGL 102 or any approved overlay or stand-alone Carolina Core INF course

2. Other General Education (21 Hours)
ENGL 102 - Rhetoric and Composition
* If not taken at USC another INF course is required
VSR: Values, Ethics, and Social Responsibility (0-3 hours)

- Any approved overlay or stand-alone Carolina Core VSR course

Other Required General Education Courses

3 hours

One of the following two courses:
- ENGL 462 - Technical Writing
- ENGL 463 - Business Writing

Liberal Arts (9 hours)

Mathematics (9 hours)

- MATH 174 - Discrete Mathematics for Computer Science
  - or
  - MATH 374 - Discrete Structures
- STAT 509 - Statistics for Engineers
- STAT 515 - Statistical Methods I
  - or
  - STAT 516 - Statistical Methods II

4 hours

English Elective (3 Hours)
- ENGL 462 - Technical Writing or ENGL 463 - Business Writing

Mathematics Electives (9 Hours)
- MATH 174 - Discrete Mathematics for Computer Science or MATH 374 - Discrete Structures
- STAT 509 - Statistics for Engineers or STAT 515 - Statistical Methods I
- STAT 516 - Statistical Methods II

Liberal Arts Electives (9 Hours)
A list of acceptable Liberal Arts Elective courses is maintained in the department office and on its [website](#).

3. Lower Division Computing (15 Hours)
- CSCE 146 - Algorithmic Design II
- CSCE 190 - Computing in the Modern World
- CSCE 201 - Introduction to Computer Security
- CSCE 210 - Computer Hardware Foundations
- CSCE 215 - UNIX/Linux Fundamentals
- CSCE 240 - Introduction to Software Engineering

4. Computer Information Systems Major (27 Hours):

Required Courses (24 Hours):
- CSCE 205 - Business Application Programming
- CSCE 311 - Operating Systems
- CSCE 350 - Data Structures and Algorithms
- CSCE 416 - Introduction to Computer Networks
- CSCE 490 - Capstone Computing Project I
- CSCE 492 - Capstone Computing Project II
- CSCE 520 - Database System Design
### Required Courses in the Major

36 hours

- CSCE 146 - Algorithmic Design II
- CSCE 190 - Computing in the Modern World
- CSCE 201 - Introduction to Computer Security
- CSCE 210 - Computer Hardware Foundations
- CSCE 215 - UNIX/Linux Fundamentals
- CSCE 240 - Introduction to Software Engineering
- CSCE 311 - Operating Systems
- CSCE 350 - Data Structures and Algorithms
- CSCE 390 - Professional Issues in Computer Science and Engineering
- CSCE 416 - Introduction to Computer Networks
- CSCE 490 - Capstone Computing Project I
- CSCE 492 - Capstone Computing Project II
- CSCE 520 - Database System Design
- CSCE 522 - Information Security Principles

### Minor in Business Information Management:

**Required Courses (18 hours):**

- ECON 224 - Introduction to Economics
- ACCT 222 - Introduction to Accounting
- MGMT 371 - Principles of Management
- MGSC 390 - Business Information Systems
- MGSC 490 - Information Systems Analysis and Design
- MGSC 590 - Information Systems Development

**Electives (6 hours):**

Choose any two of the following courses:

- ACCT 324 - Survey of Commercial Law
- ECON 311 - Issues in Economics
- ECON 379 - Government Policy Toward Business
- FINA 333 - Finance and Markets
- IBUS 301 - Introduction to International Business
- MKTG 350 - Principles of Marketing
- MKTG 351 - Consumer Behavior
- MGSC 395 - Operations Management

### Major elective/CSCE course numbered above 500 (3 Hours)

- CSCE 522 - Information Security Principles

Major Elective (3 Hours):

Choose from CSCE 317 or other approved CSCE courses numbered 500 and higher. A list of acceptable courses is also maintained in the department office and on its website.

5. Minor in Business Information Management (24 Hours)

**Required Courses (18 hours):**

- ECON 224 - Introduction to Economics
- ACCT 222 - Introduction to Accounting
- MGMT 371 - Principles of Management
- MGSC 390 - Business Information Systems
- MGSC 490 - Information Systems Analysis and Design
- MGSC 590 - Information Systems Development

**Electives (6 hours):**

Choose any two of the following courses:

- ACCT 324 - Survey of Commercial Law
- ECON 311 - Issues in Economics
- ECON 379 - Government Policy Toward Business
- FINA 333 - Finance and Markets
- IBUS 301 - Introduction to International Business
- MKTG 350 - Principles of Marketing
- MKTG 351 - Consumer Behavior
- MGSC 395 - Operations Management

### Academic Standards

Entrance Requirements

See the College of Engineering and Computing section of this bulletin for entrance requirements, progression requirements, and special academic opportunities.
### Minimum Course Grades
The Computer Information Systems B.S. program requires that a grade of “C” or better be earned in each of the following courses: ENGL 101, ENGL 102, MATH 122 or 141, MATH 174 or 374, and all CSCE courses applied to the degree.

### Progression Requirements
Progression requirement policies are described in the *College of Engineering and Computing* section of this bulletin. For the purpose of these policies, Lower Division Courses for the Computer Information Systems B.S. program consist of: ENGL 101 and 102, MATH 122 or 141, MATH 174 or 374, CSCE 145, and all Lower Division Computing courses. Upper Division Courses consist of: all CSCE courses number 300 and above.

### Major GPA
Major GPA requirement policies are described in the *College of Engineering and Computing* section of this bulletin. For the purpose of these policies, the following courses are used to determine the Major GPA for the Computer Information Systems B.S. program: all Lower Division Computing courses, Computer Information Systems Major courses, Computer Information Systems Electives, CSCE 145, CSCE 390, MGSC 390, MGSC 490, and MGSC 590.

### Exclusions
No Lower Division Computing or Computer Information Systems Major course may be counted toward a minor. All other degree-required courses and electives may be used for a minor as appropriate. CSCE 101 and 102 are not major courses and may not be used for degree credit.

### Change in curriculum – BSCS Computer Science (Effective: 2015-2016 Bulletin)

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
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</thead>
<tbody>
<tr>
<td><strong>Degree Requirements (122)</strong></td>
<td><strong>Curriculum (122 – 131 Hours)</strong></td>
</tr>
<tr>
<td><strong>Major Requirements (76)</strong></td>
<td>6. Carolina Core (35-44 Hours)</td>
</tr>
<tr>
<td>Carolina Core</td>
<td>7. Other General Education (29 Hours)</td>
</tr>
<tr>
<td><strong>AllU: Aesthetic and Interpretive Understanding (3 hours)</strong></td>
<td>8. Lower Division Computing (19)</td>
</tr>
<tr>
<td></td>
<td>9. Computer Science Major (30 Hours)</td>
</tr>
<tr>
<td></td>
<td>10. Application Area (9 Hours)</td>
</tr>
<tr>
<td></td>
<td><strong>1. Carolina Core (35-44 Hours)</strong></td>
</tr>
<tr>
<td>Domain</td>
<td>Requirements</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| ARP: Analytical Reasoning & Problem-Solving | - **MATH 141** - Calculus I  
- **MATH 142** - Calculus II     |
| CMW: Effective, Engaged, and Persuasive     | - **ENGL 101** - Critical Reading and Composition  
- **ENGL 102** - Rhetoric and Composition     |
| Communication: Written Component (6 hours)  |                                                                                   |
| GSS: Global Citizenship and Multicultural   | - Any approved Carolina Core AIU course                                      |
| Understanding: Social Sciences (3 hours)    |                                                                                   |
| GHS: Global Citizenship and Multicultural   | - Any approved Carolina Core GSS course                                      |
| Understanding: Historical Thinking (3 hours)|                                                                                   |
| GFL: Global Citizenship and Multicultural   | - Any approved Carolina Core course(s) for GFL or score of two or better on foreign language placement test |
| Understanding: Foreign Language (0-8 hours)|                                                                                   |
| SCI: Scientific Literacy (8 hours)         | - Any approved Carolina Core course for AIU                              |
| AIU: Aesthetic and Interpretive Understanding (3 hours) | Any approved Carolina Core GHS course                                      |
| GFL: Global Citizenship and Multicultural Understanding: Foreign Language (0-6 Hours) | Score two or better on foreign language placement test; or complete the 109 and 110 courses in FREN, GERM, LATN or SPAN; or complete the 121 course in another foreign language. |
| GSS: Global Citizenship and Multicultural Understanding: Social Sciences (3 Hours) | Any approved Carolina Core GSS course                                      |
| CMS: Effective, Engaged, and Persuasive     | - **CHEM 111** - General Chemistry I  
- **CHEM 112** - General Chemistry II  
- **CHEM 111L** - General Chemistry I Lab  
- **CHEM 112L** - General Chemistry II Lab  
- **PHYS 211** - Essentials of Physics I  
- **PHYS 211L** - Essentials of Physics I Lab  
- **PHYS 212** - Essentials of Physics I  
- **PHYS 212L** - Essentials of Physics I Lab |
| Communication: Spoken Component (3 hours)   | - **CHEM 111** - General Chemistry I  
- **CHEM 112** - General Chemistry II  
- **CHEM 111L** - General Chemistry I Lab  
- **CHEM 112L** - General Chemistry II Lab  
- **PHYS 211** - Essentials of Physics I  
- **PHYS 211L** - Essentials of Physics I Lab  
- **PHYS 212** - Essentials of Physics I  
- **PHYS 212L** - Essentials of Physics I Lab |
| CMS: Effective, Engaged, and Persuasive     | - **SPCH 140** - Public Communication                                           |

**Note:** For **GFL**, if you score two or better on foreign language placement test, you can complete the 109 and 110 courses in FREN, GERM, LATN or SPAN; or complete the 121 course in another foreign language.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 211</td>
<td>Essentials of Physics I</td>
</tr>
<tr>
<td>PHYS 211L</td>
<td>Essentials of Physics I Lab</td>
</tr>
<tr>
<td>PHYS 212</td>
<td>Essentials of Physics II</td>
</tr>
<tr>
<td>PHYS 212L</td>
<td>Essentials of Physics II Lab</td>
</tr>
</tbody>
</table>

**CMS: Effective, Engaged, and Persuasive Communication: Spoken Component (3 hours)**

- SPCH 140 - Public Communication

**INF: Information Literacy (0-3 hours)**

- Any approved overlay or stand-alone Carolina Core INF course

**VSR: Values, Ethics, and Social Responsibility (1 Hour)**

- CSCE 390 - Professional Issues in Computer Science and Engineering

**Other Required General Education Courses**

**3 hours**

One of the following two courses:

- ENGL 462 - Technical Writing
- ENGL 463 - Business Writing

**Liberal Arts (9 hours)**

**10 hours**

- MATH 241 - Vector Calculus
- MATH 374 - Discrete Structures

**2. Other General Education (29 Hours)**

**Required Courses (13 Hours)**

- MATH 241 - Vector Calculus
- MATH 374 - Discrete Structures
- MATH 526 - Numerical Linear Algebra
- STAT 509 - Statistics for Engineers

Laboratory Science Elective (4 Hours)

A list of acceptable Laboratory Science courses is maintained in the department office and on its website. These include: BIOL 101 and BIOL 101L, CHEM 111 and CHEM 111L, GEOL 101, GEOL 201, GEOL 202, MSCI 101, MSCI 102, or PHYS 211 and PHYS 211L.

English Elective (3 Hours)

Choose from ENGL 462 - Technical Writing or ENGL 463 - Business Writing.

Liberal Arts Electives (9 Hours)

A list of acceptable Liberal Arts Elective courses is maintained in the department office and on its website.

**3. Lower Division Computing (19 Hours)**

- CSCE 145 - Algorithmic Design I
- CSCE 146 - Algorithmic Design II
- CSCE 190 - Computing in the Modern World
- CSCE 211 - Digital Logic Design
- CSCE 212 - Introduction to Computer Architecture
- CSCE 215 - UNIX/Linux Fundamentals
- CSCE 240 - Introduction to Software Engineering

**4. Computer Science Major (30 Hours)**

Required Courses (21 Hours):
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 526</td>
<td>Numerical Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>STAT 509</td>
<td>Statistics for Engineers</td>
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<tr>
<td></td>
<td>Laboratory Sciences (4 hours)</td>
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</tr>
<tr>
<td></td>
<td>The department maintains a list of approved laboratory science courses.</td>
<td></td>
</tr>
<tr>
<td>CSCE 145</td>
<td>Algorithmic Design I</td>
<td></td>
</tr>
<tr>
<td>CSCE 146</td>
<td>Algorithmic Design II</td>
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<tr>
<td></td>
<td>Required Courses in the Major</td>
<td>32</td>
</tr>
<tr>
<td>CSCE 190</td>
<td>Computing in the Modern World</td>
<td></td>
</tr>
<tr>
<td>CSCE 211</td>
<td>Digital Logic Design</td>
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<td>CSCE 212</td>
<td>Introduction to Computer Architecture</td>
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<tr>
<td>CSCE 215</td>
<td>UNIX/Linux Fundamentals</td>
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<td>CSCE 240</td>
<td>Introduction to Software Engineering</td>
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<tr>
<td>CSCE 311</td>
<td>Operating Systems</td>
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<tr>
<td>CSCE 330</td>
<td>Programming Language Structures</td>
<td></td>
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<tr>
<td>CSCE 350</td>
<td>Data Structures and Algorithms</td>
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<tr>
<td>CSCE 355</td>
<td>Foundations of Computation</td>
<td></td>
</tr>
<tr>
<td>CSCE 416</td>
<td>Introduction to Computer Networks</td>
<td></td>
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<tr>
<td>CSCE 490</td>
<td>Capstone Computing Project I</td>
<td></td>
</tr>
<tr>
<td>CSCE 492</td>
<td>Capstone Computing Project II</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Major Electives (9 Hours):</td>
<td></td>
</tr>
<tr>
<td>CSCE 317</td>
<td>Computer Systems Engineering</td>
<td></td>
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<tr>
<td>Courses numbered above 500</td>
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</tr>
<tr>
<td></td>
<td>Application Area (9 hours)</td>
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</tr>
<tr>
<td>CSCE 311</td>
<td>Operating Systems</td>
<td></td>
</tr>
<tr>
<td>CSCE 330</td>
<td>Programming Language Structures</td>
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<tr>
<td>CSCE 350</td>
<td>Data Structures and Algorithms</td>
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<td>CSCE 490</td>
<td>Capstone Computing Project I</td>
<td></td>
</tr>
<tr>
<td>CSCE 492</td>
<td>Capstone Computing Project II</td>
<td></td>
</tr>
</tbody>
</table>

Major Electives (9 Hours):
Choose from CSCE 317 or other approved CSCE courses numbered 500 and higher. A list of acceptable Major Elective courses is also maintained in the department office and on its website.

5. **Application Area (9 hours)**
An application area consists of three courses (9 hours) in a single area offered by another department. This coursework must display a distinct curriculum pattern. If a defined minor exists in the discipline of the application area, then a good set of suggested courses for the application area would be a subset of the minor. Students should consult their advisor to ensure their application area courses will meet this graduation requirement.

**Academic Standards**

**Entrance Requirements**
See the *College of Engineering and Computing* section of this bulletin for entrance requirements, progression requirements, and special academic opportunities.

**Minimum Course Grades**
The Computer Science B.S.C.S. program requires that a grade of “C” or better be earned in each of the following courses: ENGL 101, ENGL 102, MATH 141, MATH 142, MATH 374, CHEM 111 or PHYS 211, and all CSCE courses applied to the degree.

**Progression Requirements**
Progression requirement policies are described in the *College of Engineering and Computing* section of this bulletin. For the purpose of these policies, Lower Division Courses for the Computer Science B.S.C.S.
**Change in curriculum – BSE Computer Engineering (Effective: 2015-2016 Bulletin)**

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Degree Requirements (124 hours)</strong></td>
<td><strong>Curriculum (124 - 133 Hours)</strong></td>
</tr>
<tr>
<td><strong>Major Requirements (87 hours)</strong></td>
<td>11. Carolina Core (35-44 Hours)</td>
</tr>
<tr>
<td>- Carolina Core</td>
<td>12. Other General Education (22 Hours)</td>
</tr>
<tr>
<td><strong>Carolina Core</strong></td>
<td>13. Lower Division Computing (22 Hours)</td>
</tr>
<tr>
<td><strong>AIU: Aesthetic and Interpretive Understanding (3 hours)</strong></td>
<td>14. Computer Engineering Major (33 Hours)</td>
</tr>
<tr>
<td>- Any approved Carolina Core AIU course</td>
<td>15. Electrical Engineering (12 Hours)</td>
</tr>
<tr>
<td><strong>ARP: Analytical Reasoning and Problem-Solving (8 hours)</strong></td>
<td></td>
</tr>
<tr>
<td>- MATH 141 - Calculus I</td>
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<tr>
<td>- MATH 142 - Calculus II</td>
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</tr>
<tr>
<td><strong>CMW: Effective, Engaged, and Persuasive Communication: Written Component (6 hours)</strong></td>
<td></td>
</tr>
<tr>
<td>- ENGL 101 - Critical Reading and Composition</td>
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</tbody>
</table>

**Exclusions**

No Lower Division Computing, Computer Science Major, or Computer Science Elective course may be counted toward a minor or application area. All other degree-required courses and electives may be used for a minor as appropriate. CSCE 101 and 102 are not major courses and may not be used for degree.
<table>
<thead>
<tr>
<th>Course</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENGL 102 - Rhetoric and Composition</strong></td>
<td></td>
</tr>
<tr>
<td><strong>GSS: Global Citizenship and Multicultural Understanding: Social Sciences (3 hours)</strong></td>
<td>Any approved Carolina Core GSS course</td>
</tr>
<tr>
<td><strong>GHS: Global Citizenship and Multicultural Understanding: Historical Thinking (3 hours)</strong></td>
<td>Any approved Carolina Core GHS course</td>
</tr>
<tr>
<td><strong>GFL: Global Citizenship and Multicultural Understanding: Foreign Language (0-8 hours)</strong></td>
<td>Any approved Carolina Core course(s) for GFL or score of two or better on foreign language placement test</td>
</tr>
</tbody>
</table>
| **SCI: Scientific Literacy (8 hours)** | CHEM 111 - General Chemistry I  
PHYS 211 - Essentials of Physics I  
PHYS 211L - Essentials of Physics I Lab |
| **AIU: Aesthetic and Interpretive Understanding (3 hours)** | Any approved Carolina Core AIU course                                         |
| **GFL: Global Citizenship and Multicultural Understanding: Foreign Language (0-6 Hours)** | Score two or better on foreign language placement test; or complete the 109 and 110 courses in FREN, GERM, LATN or SPAN; or complete the 121 course in another foreign language. |
| **GHS: Global Citizenship and Multicultural Understanding: Historical Thinking (3 Hours)** | Any approved Carolina Core GHS course                                         |
| **GSS: Global Citizenship and Multicultural Understanding: Social Sciences (3 Hours)** | Any approved Carolina Core GSS course                                         |
| **CMS: Effective, Engaged, and Persuasive Communication: Spoken Component (3 hours)** | SPCH 140 - Public Communication                                              |
| **INF: Information Literacy (0-3 hours)** | USC ENGL 102 or any approved overlay or stand-alone Carolina Core INF course |
| **VSR: Values, Ethics, and Social Responsibility (1 Hour)** | CSCE 390 - Professional Issues in Computer Science and Engineering          |
| **2. Other General Education (22 Hours)** |                                                                             |
| **Required Courses (16 Hours)** | MATH 241 - Vector Calculus  
MATH 242 - Elementary Differential Equations  
MATH 374 - Discrete Structures |
| **INF: Information Literacy (0-3 Hours)** | USC ENGL 102 or any approved overlay or stand-alone Carolina Core INF course |
### 3 hours

**One of the following two courses:**

- ENGL 462 - Technical Writing
- ENGL 463 - Business Writing

### 12 hours

- MATH 241 - Vector Calculus
- MATH 242 - Elementary Differential Equations
- MATH 374 - Discrete Structures
- Mathematics elective (3 hours)

### 3 hours

- STAT 509 - Statistics for Engineers

### 4 hours

- PHYS 212 - Essentials of Physics II
- PHYS 212L - Essentials of Physics II Lab

### 8 hours

- CSCE 145 - Algorithmic Design I
- CSCE 146 - Algorithmic Design II

### Required Courses in the Major (32 Hours)

- CSCE 190 - Computing in the Modern World
- CSCE 211 - Digital Logic Design
- CSCE 212 - Introduction to Computer Architecture
- CSCE 215 - UNIX/Linux Fundamentals
- CSCE 240 - Introduction to Software Engineering
- CSCE 310 - Operating Systems
- CSCE 313 - Embedded Systems
- CSCE 317 - Computer Systems Engineering
- CSCE 360 - Data Structures and Algorithms
- CSCE 274 - Robotic Applications and Design
- PHYS 212 - Essentials of Physics II
- PHYS 212L - Essentials of Physics II Lab
- STAT 509 - Statistics for Engineers

**Mathematics elective (3 Hours)**

Choose one course from MATH 526, MATH 527, MATH 544 or CSCE 561. Other courses in linear algebra or numerical analysis may be substituted with permission of the department.

**English Elective (3 Hours)**

Choose one course from ENGL 462 or ENGL 463.

### Lower Division Computing Courses (22 hours)

- CSCE 145 - Algorithmic Design I
- CSCE 146 - Algorithmic Design II
- CSCE 190 - Computing in the Modern World
- CSCE 211 - Digital Logic Design
- CSCE 212 - Introduction to Computer Architecture
- CSCE 215 - UNIX/Linux Fundamentals
- CSCE 240 - Introduction to Software Engineering
- CSCE 274 - Robotic Applications and Design

### Computer Engineering Major (33 Hours)

**Required Courses (24 Hours)**

- CSCE 311 - Operating Systems
- CSCE 313 - Embedded Systems
- CSCE 317 - Computer Systems Engineering
- CSCE 350 - Data Structures and Algorithms
- CSCE 416 - Introduction to Computer Networks
- CSCE 490 - Capstone Computing Project I
- CSCE 492 - Capstone Computing Project II
- CSCE 611 - Advanced Digital Design

**Major Electives (9 Hours):**

Choose from CSCE 330, CSCE 355, ELCT 321, ELCT 322.
CSCE 416 - Introduction to Computer Networks
CSCE 611 - Advanced Digital Design

(12 Hours)

ELCT 102 - Electrical Science
ELCT 221 - Circuits
ELCT 222 - Signals and Systems
ELCT 371 - Electronics

(6 Hours)

CSCE 490 - Capstone Computing Project I
CSCE 492 - Capstone Computing Project II

Major electives (9 Hours)

Notes:

1. The math elective is satisfied with MATH 526 or 527 or 544 or CSCE 561. Other courses in linear algebra or numerical analysis may be substituted with permission of the department.

2. The department maintains a list of approved major electives for the computer engineering degree. Currently, CSCE 330, CSCE 355, ELCT 321, ELCT 331, and most CSCE courses numbered 510 and higher are approved. CSCE 561 satisfies the requirement as either a major elective or as a mathematics elective.

331, and other approved CSCE courses numbered 510 and higher. A list of acceptable Major Elective courses is also maintained in the department office and on its website.

5. Electrical Engineering (12 hours)
   - ELCT 102 - Electrical Science
   - ELCT 221 - Circuits
   - ELCT 222 - Signals and Systems
   - ELCT 371 - Electronics

Academic Standards

Entrance Requirements
See the College of Engineering and Computing section of this bulletin for entrance requirements, progression requirements, and special academic opportunities.

Minimum Course Grades
The Computer Engineering B.S.E. program requires that a grade of “C” or better be earned in each of the following courses: ENGL 101, ENGL 102, MATH 141, MATH 142, MATH 374, PHYS 211, PHYS 211L, and all CSCE courses applied to the degree.

Progression Requirements
Progression requirement policies are described in the College of Engineering and Computing section of this bulletin. For the purpose of these policies, Lower Division Courses for the Computer Engineering B.S.E. program consist of: ENGL 101, ENGL 102, MATH 141, MATH 142, MATH 241, MATH 242, CHEM 111, CHEM 111L, PHYS 211, PHYS 211L, ELCT 102, ELCT 221, and all Lower Division Computer Engineering courses. Upper Division Courses for the Computer Engineering B.S.E. program consist of all CSCE courses number 300 and above.

Major GPA
Major GPA requirement policies are described in the College of Engineering and Computing section of this bulletin. For the purpose of these policies, the following courses are used to determine the Major GPA for the Computer Engineering B.S.E. program: all Lower Division Computing, Computer Engineering Major, Computer Engineering Electives, Electrical Engineering Cognate courses, and CSCE 390.

Exclusions
E. Department of Electrical Engineering

**Change title, prerequisite and corequisite (Effective: 2015-2016 Bulletin)**

<table>
<thead>
<tr>
<th>From:</th>
<th>ELCT 302</th>
<th>Control Systems Laboratory. (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coreq: Prereq or Coreq: ELCT 331</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prereq: Prereq: ELCT 301</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prereq or Coreq: ELCT 331</td>
<td></td>
</tr>
<tr>
<td>To:</td>
<td>ELCT 302</td>
<td>Real Time Systems Laboratory. (3)</td>
</tr>
<tr>
<td></td>
<td>Prereq or Coreq: ELCT 331</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prereq: ELCT 301</td>
<td></td>
</tr>
</tbody>
</table>

**Change in prerequisite (Effective: 2015-2016)**

<table>
<thead>
<tr>
<th>From:</th>
<th>ELCT 350</th>
<th>Computer Modeling of Electrical Systems. (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prereq: CSCE 146, CSCE 212, ELCT 222</td>
<td></td>
</tr>
<tr>
<td>To:</td>
<td>ELCT 350</td>
<td>Computer Modeling of Electrical Systems. (3)</td>
</tr>
<tr>
<td></td>
<td>Prereq: ELCT 222, CSCE 145</td>
<td></td>
</tr>
</tbody>
</table>

**Change in curriculum – BSE Electrical Engineering (Effective: 2015-2016 Bulletin)**

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Curriculum</strong></td>
<td><strong>Curriculum (127 - 139 Hours)</strong></td>
</tr>
<tr>
<td><strong>Carolina Core (34 hours)</strong></td>
<td>16. Carolina Core (34-46 Hours)</td>
</tr>
<tr>
<td><strong>Lower Division Engineering (25 hours)</strong></td>
<td>17. Other General Requirements (23 hours)</td>
</tr>
<tr>
<td><strong>Electrical Engineering Major (30 Hours)</strong></td>
<td>18. Lower Division Engineering (25 hours)</td>
</tr>
<tr>
<td><strong>Career Plan Electives (15 Hours)</strong></td>
<td>19. Electrical Engineering Major (30 Hours)</td>
</tr>
<tr>
<td><strong>Special academic opportunities.</strong></td>
<td>20. Career Plan Electives (15 Hours)</td>
</tr>
<tr>
<td><strong>CMW: Effective, Engaged, and Persuasive Communication: Written Component (6 Hours)</strong></td>
<td><strong>CMW: Effective, Engaged, and Persuasive Communication: Written Component (6 Hours)</strong></td>
</tr>
<tr>
<td>1. Carolina Core (34-46 hours)</td>
<td>- ENGL 101 - Critical Reading and Composition</td>
</tr>
<tr>
<td></td>
<td>- ENGL 102 - Rhetoric and Composition</td>
</tr>
</tbody>
</table>
- ENGL 101 - Critical Reading and Composition
- ENGL 102 - Rhetoric and Composition

**ARP: Analytical Reasoning & Problem-Solving (8 hours)**
- MATH 141 - Calculus I
- MATH 142 - Calculus II

**SCI: Scientific Literacy (8 hours)**
- CHEM 111 - General Chemistry I
- PHYS 211 - Essentials of Physics I
- PHYS 211L - Essentials of Physics I Lab

**GFL: Global Citizenship and Multicultural Understanding: Foreign Language (0-6 hours)**
- Any approved Carolina Core course for GFL or score of two or better on foreign language placement test

**GHS: Global Citizenship and Multicultural Understanding: Historical Thinking (3 hours)**
- Any approved Carolina Core course for GHS

**GSS: Global Citizenship and Multicultural Understanding: Social Sciences (3 hours)**
- Any approved Carolina Core course for GSS

**AIU: Aesthetic and Interpretive Understanding (3 hours)**
- Any approved Carolina Core AIU course

**CMS: Effective, Engaged, and Persuasive Communication: Spoken Component (0-3 hours)**
- PHIL 325 – Engineering Ethics (CMS/VSR overlay)
- Any approved overlay or stand-alone Carolina Core CMS course

**VSR: Values, Ethics and Social Responsibility (3 hours)**
- PHIL 325 – Engineering Ethics (CMS/VSR overlay)
- Any approved overlay or stand-alone Carolina Core VSR course

**INF: Information Literacy (0-3 hours)**
### Core course for CMS

**INF: Information Literacy (0-3 hours)**
- Any approved overlay or stand-alone Carolina Core course for INF

**VSR: Values, Ethics and Social Responsibility (3 hours)**
- Any approved Carolina Core course for VSR

### Other Required General Education Courses in the Major (6 Hours)
- MATH 241 - Vector Calculus
- MATH 242 - Elementary Differential Equations

### Required Courses in the Major (3 Hours)
- STAT 509 - Statistics for Engineers

### 2. Other General Requirements (23 hours)
- CSCE 146 - Algorithmic Design II
- ECON 421 - Engineering Economics
- EMCH 220 - Mechanical Engineering Fundamentals for Non-majors
- MATH 241 - Vector Calculus
- MATH 242 - Elementary Differential Equations
- PHYS 212 - Essentials of Physics I
- PHYS 212L - Essentials of Physics I Lab
- STAT 509 - Statistics for Engineers

### 3. Lower Division Engineering (25 hours)
- CSCE 145 - Algorithmic Design I
- CSCE 211 - Digital Logic Design
- CSCE 212 - Introduction to Computer Architecture
- ELCT 101 - Electrical and Electronics Engineering
- ELCT 102 - Electrical Science
- ELCT 201 – Intro. Electrical Engineering Laboratory
- ELCT 221 – Circuits
- ELCT 222 - Signals and Systems

### 4. Electrical Engineering Major (30 hours)
- ELCT 301 - Electronics Laboratory
- ELCT 302 - Control Systems Laboratory
- ELCT 321 - Digital Signal Processing
- ELCT 331 - Control Systems
- ELCT 350 - Computer Modeling of Electrical Systems
- ELCT 361 - Electromagnetics
- ELCT 363 - Introduction to Microelectronics
- ELCT 371 - Electronics
(14 Hours)

- CSCE 145 - Algorithmic Design I
- CSCE 146 - Algorithmic Design II
- CSCE 211 - Digital Logic Design
- CSCE 212 - Introduction to Computer Architecture

(45 Hours)

- ELCT 101 - Electrical and Electronics Engineering
- ELCT 102 - Electrical Science
- ELCT 201 - Introductory Electrical Engineering Laboratory
- ELCT 221 - Circuits
- ELCT 222 - Signals and Systems
- ELCT 301 - Electronics Laboratory
- ELCT 302 - Control Systems Laboratory
- ELCT 321 - Digital Signal Processing
- ELCT 331 - Control Systems
- ELCT 350 - Computer Modeling of Electrical Systems
- ELCT 361 - Electromagnetics
- ELCT 363 - Introduction to Microelectronics
- ELCT 371 - Electronics
- ELCT 403 - Capstone Design Project I
- ELCT 404 - Capstone Design Project II

Career Track Electives (15 Hours)*

- ELCT 403 - Capstone Design Project I
- ELCT 404 - Capstone Design Project II

5. Career Plan Electives (15 hours)
The student, in consultation with his or her advisor, will select 15 hours of electives that support the student’s defined career plan. Not more than 6 hours of these electives may be from another discipline, and all must be at or above the 300-level.

Academic Standards
Minimum Course Grades
The Electrical Engineering B.S.E. program requires that a grade of “C” or better be earned in each of the following courses: CSCE 145, CSCE 211, ELCT 221, ENGL 101, ENGL 102, MATH 141, MATH 142, PHYS 211, PHYS 211L.

Progression Requirements
Progression requirement policies are described in the College of Engineering and Computing section of this bulletin. For the purpose of these policies, Lower Division Courses for the Electrical Engineering B.S.E. program consist of: ENGL 101, ENGL 102, MATH 141, MATH 142, MATH 241, MATH 242, CHEM 111, CHEM 111L, PHYS 211, PHYS 211L, PHYS 212, PHYS 212L, and all Lower Division Engineering courses. Upper Division Courses for the Electrical Engineering B.S.E. program consist of all ELCT courses number 300 and above.

Major GPA
Major GPA requirement policies are described in the College of Engineering and Computing section of this bulletin. For the purpose of these policies, the following courses are used to determine the Major GPA for the Electrical Engineering B.S.E. program: all Lower Division Engineering courses, all Electrical Engineering Major courses, CSCE 146 and EMCH 220.
F. Department of Mechanical Engineering  
Change in curriculum – BSE Mechanical Engineering  
(Effective: 2015-2016 Bulletin)

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Curriculum</strong></td>
<td><strong>Curriculum (126 - 138 Hours)</strong></td>
</tr>
<tr>
<td></td>
<td>21. Carolina Core (34-46 Hours)</td>
</tr>
<tr>
<td></td>
<td>22. Other General Requirements (17 hours)</td>
</tr>
<tr>
<td></td>
<td>23. Lower Division Engineering (21 hours)</td>
</tr>
<tr>
<td></td>
<td>24. Mechanical Engineering Major (42 Hours)</td>
</tr>
<tr>
<td></td>
<td>25. Electives (12 Hours)</td>
</tr>
<tr>
<td><strong>Degree Requirements (126 Hours)</strong></td>
<td>1. Carolina Core (34-46 hours)</td>
</tr>
<tr>
<td><strong>Major Requirements (92 Hours)</strong></td>
<td><strong>CMW: Effective, Engaged, and Persuasive</strong></td>
</tr>
<tr>
<td><strong>Carolina Core</strong></td>
<td><strong>Communication: Written Component (6 hours)</strong></td>
</tr>
<tr>
<td><strong>CMW: Effective, Engaged, and Persuasive</strong></td>
<td>- ENGL 101 - Critical Reading and Composition</td>
</tr>
<tr>
<td><strong>Communication: Written Component (6 hours)</strong></td>
<td>- ENGL 102 - Rhetoric and Composition</td>
</tr>
<tr>
<td>- ENGL 101 - Critical Reading and Composition</td>
<td><strong>ARP: Analytical Reasoning &amp; Problem-Solving (8 hours)</strong></td>
</tr>
<tr>
<td>- ENGL 102 - Rhetoric and Composition</td>
<td>- MATH 141 - Calculus I</td>
</tr>
<tr>
<td><strong>ARP: Analytical Reasoning &amp; Problem-Solving (8 hours)</strong></td>
<td>- MATH 142 - Calculus II</td>
</tr>
<tr>
<td>- MATH 141 - Calculus I</td>
<td><strong>SCI: Scientific Literacy (8 hours)</strong></td>
</tr>
<tr>
<td>- MATH 142 - Calculus II</td>
<td>- CHEM 111 - General Chemistry I</td>
</tr>
<tr>
<td><strong>SCI: Scientific Literacy (8 hours)</strong></td>
<td>- CHEM 111L - General Chemistry I Lab</td>
</tr>
<tr>
<td>- CHEM 111 - General Chemistry I</td>
<td>- PHYS 211 - Essentials of Physics I</td>
</tr>
<tr>
<td>- CHEM 112 - General Chemistry II</td>
<td>- PHYS 211L - Essentials of Physics I Lab</td>
</tr>
<tr>
<td><strong>GFL: Global Citizenship and Multicultural Understanding: Foreign Language (0-6 hours)</strong></td>
<td><strong>AIU: Aesthetic and Interpretive Understanding (3 hours)</strong></td>
</tr>
<tr>
<td>- Students shall demonstrate in one Foreign Language the ability to comprehend the topic and the main ideas in written and, with the exception of Latin and Ancient Greek, spoken texts on familiar subjects. This ability can be</td>
<td>- Any approved Carolina Core AUI course</td>
</tr>
<tr>
<td></td>
<td><strong>GFL: Global Citizenship and Multicultural Understanding: Foreign Language (0-6 hours)</strong></td>
</tr>
</tbody>
</table>
| | - Score two or better on foreign language placement test; or complete the 109 and 110 courses in FREN, GERM, LATN or SPAN; or complete the 121 course in another foreign language. | **GHS: Global Citizenship and Multicultural**

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demonstrated by achieving a score of two or better on a USC foreign language test. Those failing to do so must satisfactorily complete equivalent study of foreign language at USC.

<table>
<thead>
<tr>
<th>GHS: Global Citizenship and Multicultural Understanding: Historical Thinking (3 hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Any approved Carolina Core course for GHS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GSS: Global Citizenship and Multicultural Understanding: Social Sciences (3 hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Any approved Carolina Core course for GSS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AIU: Aesthetic and Interpretive Understanding (3 hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Any approved Carolina Core course for AIU</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>CMS: Effective, Engaged, and Persuasive Communication: Spoken Component (3 hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose from:</td>
</tr>
<tr>
<td>• PHIL 325 – Engineering Ethics (CMS/VSR overlay)</td>
</tr>
<tr>
<td>• SPCH 140 - Public Communication</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VSR: Values, Ethics and Social Responsibility (0-3 hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose from:</td>
</tr>
<tr>
<td>• PHIL 325 – Engineering Ethics (CMS/VSR overlay)</td>
</tr>
<tr>
<td>• HIST 108 - Science and Technology in World History (VSR/GHS overlay)</td>
</tr>
<tr>
<td>• PHIL 211 - Contemporary Moral Issues</td>
</tr>
<tr>
<td>• PHIL 320 - Ethics</td>
</tr>
<tr>
<td>• PHIL 321 - Medical Ethics</td>
</tr>
<tr>
<td>• PHIL 322 - Environmental Ethics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INF: Information Literacy (0-3 hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• ENGL 102 (if taken at USC) or any approved overlay or stand-alone Carolina Core INF course</td>
</tr>
</tbody>
</table>

2. Other General Requirements (17 hours)

| • CHEM 112 - General Chemistry II |
| • CHEM 112L – General Chemistry II Lab |
| • MATH 241 - Vector Calculus |
| • MATH 242 - Elementary Differential Equations |
| • PHYS 212 - Essentials of Physics II |
| • PHYS 212L - Essentials of Physics II Lab |
| • STAT 509 - Statistics for Engineers |

3. Lower Division Engineering (21 hours)

| • ENCP 101 - Introduction to Engineering I |
| MATH 241 - Vector Calculus                      | EMCH 111 - Introduction to Engineering Graphics and Visualization |
| MATH 242 - Elementary Differential Equations  | or ENCP 102 – Introduction to Engineering II |
| PHYS 211 - Essentials of Physics I Lab        | • EMCH 200 - Statics                                      |
| PHYS 211L - Essentials of Physics I Lab       | or ENCP 200 - Statics                                    |
| PHYS 212 - Essentials of Physics II Lab       | • EMCH 201 - Introduction to Applied Numerical Methods    |
| PHYS 212L - Essentials of Physics II Lab      | or ENCP 201 - Introduction to Applied Numerical Methods  |
| STAT 509 - Statistics for Engineers           | • EMCH 260 - Introduction to the Mechanics of Solids     |
|                                                  | or ENCP 260 - Introduction to the Mechanics of Solids     |
| Engineering Topics (63 hours)                  | • EMCH 290 - Thermodynamic Fundamentals                  |
|                                                  | or ENCP 290 - Thermodynamic Fundamentals                 |
|                                                  | • ELCT 220 - Electrical Engineering for Non Majors      |
|                                                  | or ELCT 221 - Circuits                                   |
| ENCP 101 - Introduction to Engineering I       |                                                  |
| ELCT 221 - Circuits                           |                                                  |
| OR                                            |                                                  |
| ELCT 220 - Electrical Engineering for Non-     |                                                  |
| Majors.                                       |                                                  |
| EMCH 111 - Introduction to Engineering         | EMCH 310 - Dynamics                                    |
| Graphics and Visualization                     | EMCH 327 - Design of Mechanical Elements               |
| EMCH 200 - Statics                             | EMCH 330 - Mechanical Vibrations                       |
| EMCH 201 - Introduction to Applied Numerical   | EMCH 332 - Kinematics and Dynamics of Machines         |
| Methods                                        | EMCH 354 - Heat Transfer                               |
| EMCH 260 - Introduction to the Mechanics of    | EMCH 360 - Fluid Mechanics                             |
| Solids                                        | EMCH 361 - Mechanical Engineering Laboratory I         |
| EMCH 290 - Thermodynamic Fundamentals         | EMCH 362 - Mechanical Engineering Laboratory II        |
| EMCH 310 - Dynamics                            | EMCH 363 - Mechanical Engineering Laboratory III       |
| EMCH 327 - Design of Mechanical Elements      | EMCH 371 - Engineering Materials                       |
| EMCH 330 - Mechanical Vibrations              | EMCH 377 - Manufacturing Processes                     |
| EMCH 332 - Kinematics and Dynamics of Machines| EMCH 394 - Thermodynamic System Design and Analysis   |
| EMCH 354 - Heat Transfer                       | EMCH 427 - Mechanical Design I                         |
| EMCH 360 - Fluid Mechanics                    | EMCH 428 - Mechanical Design II                        |
| EMCH 361 - Mechanical Engineering Laboratory  |                                                  |
| I                                             |                                                  |
| EMCH 362 - Mechanical Engineering Laboratory  |                                                  |
| II                                            |                                                  |
| EMCH 363 - Mechanical Engineering Laboratory  |                                                  |
| III                                           |                                                  |
| EMCH 371 - Engineering Materials              |                                                  |
| EMCH 377 - Manufacturing Processes            |                                                  |
| EMCH 394 - Thermodynamic System Design and    |                                                  |
| Analysis                                       |                                                  |
| EMCH 427 - Mechanical Design I                |                                                  |
| EMCH 428 - Mechanical Design II               |                                                  |

Engineering Electives (12 Hours)

4. Mechanical Engineering Major (52 hours)

| EMCH 310 - Dynamics                          | EMCH 310 - Dynamics                          |
| EMCH 327 - Design of Mechanical Elements     | EMCH 327 - Design of Mechanical Elements     |
| EMCH 330 - Mechanical Vibrations             | EMCH 330 - Mechanical Vibrations             |
| EMCH 332 - Kinematics and Dynamics of Machines| EMCH 332 - Kinematics and Dynamics of Machines|
| EMCH 354 - Heat Transfer                      | EMCH 354 - Heat Transfer                      |
| EMCH 360 - Fluid Mechanics                   | EMCH 360 - Fluid Mechanics                   |
| EMCH 361 - Mechanical Engineering Laboratory I| EMCH 361 - Mechanical Engineering Laboratory I|
| EMCH 362 - Mechanical Engineering Laboratory II| EMCH 362 - Mechanical Engineering Laboratory II|
| EMCH 363 - Mechanical Engineering Laboratory III| EMCH 363 - Mechanical Engineering Laboratory III|
| EMCH 377 - Manufacturing Processes           | EMCH 377 - Manufacturing Processes           |
| EMCH 394 - Thermodynamic System Design and   | EMCH 394 - Thermodynamic System Design and   |
| Analysis                                      | Analysis                                      |
| EMCH 427 - Mechanical Design I               | EMCH 427 - Mechanical Design I               |
| EMCH 428 - Mechanical Design II              | EMCH 428 - Mechanical Design II              |

5. Electives (12 hours)
A listing of acceptable elective courses is maintained in the department office and its website.

Mechanical Engineering Electives (9 hours):
- Choose from EMCH 308, 441, 460, 497, any EMCH course numbered 500 or higher.

Technical Elective (3 hours):
- Choose from any EMCH elective or from a list of acceptable technical elective courses that is maintained in the department office and on its website.

Academic Standards

Minimum Course Grades
The Mechanical Engineering B.S.E. program requires that a grade of “C” or better be earned in each of the following courses: ENGL 101, ENGL 102, MATH 141, MATH 142, CHEM 111, PHYS 211, PHYS 211L, and EMCH 200.

Progression Requirements
Progression requirement policies are described in the *College of Engineering and Computing* section of this bulletin. For the purpose of these policies, Lower Division Courses for the Mechanical Engineering B.S.E. program consist of: ENGL 101, ENGL 102, MATH 141, MATH 142, MATH 241, MATH 242, CHEM 111, CHEM 111L, CHEM 112, CHEM 112L, PHYS 211, PHYS 211L, PHYS 212, PHYS 212L, STAT 509 and all Lower Division Engineering courses. Upper Division Courses for the Mechanical Engineering B.S.E. program consist of all EMCH courses number 300 and above, except for EMCH 361.

Major GPA
Major GPA requirement policies are described in the *College of Engineering and Computing* section of this bulletin. For the purpose of these policies, the following courses are used to determine the Major GPA for the Mechanical Engineering B.S.E. program: all Lower Division Engineering courses, all Mechanical Engineering Major courses, and all courses used to satisfy a Mechanical Engineering Elective or Technical Elective.

5. COLLEGE OF HOSPITALITY, RETAIL, AND SPORT MANAGEMENT

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Department of Integrated Information Technology

Change in course number (Effective: 2015-2016)

From: ITEC 343 Introduction to Computer Hardware and Software Support. (3)
To: ITEC 233 Introduction to Computer Hardware and Software Support. (3)

From: ITEC 346 Computer Applications in Business II. (3)
To: ITEC 265 Computer Applications in Business II. (3)

Change in course number, prerequisite and corequisite (Effective: 2015-2016)

From: ITEC 345 Introduction to Networking. (3)
   Coreq: ITEC 343
   Prereq: ITEC 343
To: ITEC 245 Introduction to Networking. (3)
   Prereq and Coreq: ITEC 243

Change in curriculum – BS in Integrated Information Technology
(Effective: 2015-2016 Bulletin)

Current

Integrated Information Technology (iIT)
College of Hospitality, Retail, and Sport Management

This major prepares graduates for careers in information technology. The program focuses on the design, implementation and management of information systems and networks, including databases, large-scale computers, and Internet-based systems, as well as corporate training and project management. The program includes general education courses, information technology core and advanced courses, management courses related to the field, and an industry internship.

Learning Outcomes

Students demonstrate preparation for their internship.

Proposed

Integrated Information Technology (iIT)
College of Hospitality, Retail, and Sport Management

This major prepares graduates for careers in information technology. The program focuses on the design, implementation and management of information systems and networks, including databases, large-scale computers, and Internet-based systems, as well as project management and end-user support. The program includes general education courses, information technology core and advanced courses, management courses related to the field, and an industry internship.

Accreditation

The Integrated Information Technology program is accredited by the Computing Accreditation Commission of ABET.
www.abet.org

Learning Outcomes

Students will demonstrate the ability to:

GOAL 1 advance in their careers through their
positions, including technical and communication skills.

- Students demonstrate effective work habits including the ability to work independently, thoroughly completing assignments, responsibility, dependability, creativity, and level of productivity.
- Students demonstrate professionalism including attitude, adaptability, cooperativeness, punctuality, courteousness, and personal appearance.
- Students produce a report based on their internship experience.

<table>
<thead>
<tr>
<th>Knowledge of information technology, communication skills, and understanding of business and technological issues.</th>
</tr>
</thead>
<tbody>
<tr>
<td>- function effectively on teams to accomplish a common goal;</td>
</tr>
<tr>
<td>- communicate effectively with a range of audiences;</td>
</tr>
<tr>
<td>- use and apply current technical concepts and practices in the core information technologies</td>
</tr>
</tbody>
</table>

**GOAL 2** continue their professional development through professional study and research.

- recognize the need for and be able to engage in continuing professional development;

**GOAL 3** contribute to economic development and society through the effective use of technology to address problems in a broad range of settings.

- analyze a problem and identify and define the computing requirements appropriate to its solution;
- understand professional, ethical, legal, security, and social issues and responsibilities;
- design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs;

**GOAL 4** advocate for the needs of users and organizations in developing technical solutions.

- identify / analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems;
- effectively integrate IT-based solutions into the user environment;

**GOAL 5** anticipate the changing direction of information technology and evaluate and communicate the likely utility of new technologies to an individual or organization.

- analyze the local and global impact of computing on individuals, organizations, and society;

**GOAL 6** manage the information resources of an individual or organization.

- assist in the creation of an effective project plan.
Curriculum (Total Credit Hours: 125)

A bachelor of science degree in Integrated Information Technology consists of the Carolina Core, related coursework, College of HRSM required courses, iIT required and elective courses, and free electives.

1. Carolina Core Courses
2. Related Coursework
3. HRSM College Required Courses
4. iIT Major Requirements
5. Free Electives

Integrated Information Technology majors may pursue a minor in any course of study offered by the College of Hospitality, Retail and Sport Management (HRSM) as well as any other University program with an approved minor. College of HRSM required courses may not be counted toward a minor.

Progression Requirements

Pre-professional courses needed to progress to Professional Division (45 Hours)

The IIT program is divided into Pre-Professional and Professional division classes. Students are required to complete 15 designated Pre-Professional courses (see below) and obtain a minimum grade point average of 2.00 before being eligible to enroll in Professional Division classes. Students who do not meet the specific course, semester hour, and grade point average requirements for progression must continue in the Pre-Professional division or change to another major. The required Pre-

- use current techniques, skills, and tools necessary for computing practice;

GOAL 7 explain and apply appropriate information technologies and employ appropriate methodologies to help an individual or organization achieve its goals and objectives.

- apply knowledge of computing and mathematics appropriate to the discipline;
- identify best practices and standards and their application;

Curriculum (Total Credit Hours: 125)

A bachelor of science degree in Integrated Information Technology consists of the Carolina Core, related coursework, College of HRSM required courses, iIT required and elective courses, and free electives.

1. Carolina Core Courses
2. Related Coursework
3. HRSM College Required Courses
4. iIT Major Requirements
5. Free Electives

Integrated Information Technology majors may pursue a minor in any course of study offered by the College of Hospitality, Retail and Sport Management (HRSM) as well as any other University program with an approved minor. College of HRSM required courses may not be counted toward a minor.

Progression Requirements

Pre-professional courses needed to progress to Professional Division (45 Hours)

The IIT program is divided into Pre-Professional and Professional division classes. Students are required to complete 15 designated Pre-Professional courses (see below) and obtain a minimum grade point average of 2.00 before being eligible to enroll in Professional Division classes. Students who do not meet the specific course, semester hour, and grade point average requirements for progression must continue in the Pre-Professional division or change to another major. The
Professional classes are:

- ARP Carolina Core Requirement
- CMW Carolina Core Requirement
- 12 additional credit hours of Carolina Core Learning Outcomes
- CSCE 201 - Introduction to Computer Security
- ITEC 242 - Business Communications
- ITEC 264 - Computer Applications in Business I
- ITEC 343 - Introduction to Computer Hardware and Software Support
- ITEC 345 - Introduction to Networking
- ITEC 346 - Computer Applications in Business II
- ITEC 362 - Web-Based Support Systems

Course Grade Requirements

All courses listed under CMW Carolina Core Requirements, College of HRSM Required Courses, iIT Core Courses, and iIT Professional Division Courses must be completed with a grade of C or better.

Graduation requires a 2.00 GPA. In order to satisfy the requirements for a degree in Integrated Information Technology and regardless of other satisfactory work, a student may not take an ITEC course more than two times.

Degree Requirements (125 Credit Hours)

1. Carolina Core for the College of HRSM and General Education for the Degree Program (31–43 Credit Hours)

Integrated Information Technology majors must fulfill all Carolina Core general education requirements. The Carolina Core consists of 31 to 43 credit hours of required coursework in ten different areas of study. Students select one or more courses for each learning outcome to satisfy the minimum number or credit hours required. (For additional information and lists of approved courses, please refer to the Carolina Core section of the Bulletin.)
### CMW: Effective, Engaged, and Persuasive Communication: Writing (6 hours)

- ENGL 101 - Critical Reading and Composition
- ENGL 102 - Rhetoric and Composition

### ARP: Analytical Reasoning and Problem Solving (6-8 hours)

Two courses, one from category A, one from category B

**A.** Either MATH 122 - Calculus for Business Administration and Social Sciences OR MATH 141 - Calculus I

**B.** Either MATH 142 - Calculus II, or higher (not MATH 221 or MATH 222) OR Any STAT

### SCI: Scientific Literacy (7 hours)

- Two approved Carolina Core courses from the natural sciences including one laboratory selected from Astronomy, Biology, Chemistry, Environmental Science, Geology, Marine Science or Physics

### GFL: Global Citizenship and Multicultural Understanding/Foreign Language (0-6 hours)

- College of HRSM students must demonstrate proficiency in a foreign language by achieving a score of 2 or higher on the foreign language placement test or by completing one foreign language course through to 110 or 121. See list of approved GFL courses.

### GHS: Global Citizenship and Multicultural Understanding: Historical Thinking (3 hours)

- Any approved Carolina Core course for Global Citizenship and Multicultural Understanding: Historical Thinking

### GSS: Global Citizenship and Multicultural Understanding/Social Sciences (3 hours)
- Any approved Carolina Core course for Global Citizenship and Multicultural Understanding/Social Sciences

**AIU: Aesthetic and Interpretive Understanding (3 hours)**

- Any approved Carolina Core course for Aesthetic and Interpretive Understanding

**CMS: Effective, Engaged and Persuasive Communication (3 hours)**

- SPCH 140 - Public Communication
- OR
- SPCH 230 - Business and Professional Speaking

**INF: Information Literacy**

- This requirement may be met in an overlay course that combines learning outcomes from two Carolina Core components.

**VSR: Values, Ethics and Social Responsibility**

- This requirement may be met in an overlay course that combines learning outcomes from two Carolina Core components.

2. Related Coursework (6 Credit Hours)

- CSCE 201 - Introduction to Computer Security
- ECON 224 - Introduction to Economics

3. College of HRSM Required Courses (21 Credit Hours)

- SPTE 240 - Business Law
- ITEC 242 - Business Communications
- ITEC 264 - Computer Applications in Business I
- RETL 261 - Functional Accounting I

- Any approved Carolina Core course for Global Citizenship and Multicultural Understanding/Social Sciences

**AIU: Aesthetic and Interpretive Understanding (3 hours)**

- Any approved Carolina Core course for Aesthetic and Interpretive Understanding

**CMS: Effective, Engaged and Persuasive Communication (3 hours)**

- SPCH 140 - Public Communication
- OR
- SPCH 230 - Business and Professional Speaking

**INF: Information Literacy**

- This requirement may be met in an overlay course that combines learning outcomes from two Carolina Core components.

**VSR: Values, Ethics and Social Responsibility**

- This requirement may be met in an overlay course that combines learning outcomes from two Carolina Core components.

2. Related Coursework (3 Credit Hours)

- ECON 224 - Introduction to Economics

3. College of HRSM Required Courses (21 Credit Hours)

- SPTE 240 - Business Law
- ITEC 242 - Business Communications
4. Integrated Information Technology Requirements (46 Credit Hours)

### A. iIT Core Courses (24 Credit Hours)

- ITEC 343 - Introduction to Computer Hardware and Software Support
- ITEC 345 - Introduction to Networking
- ITEC 346 - Computer Applications in Business II
- ITEC 352 - Software Design
- ITEC 362 - Web-Based Support Systems
- ITEC 370 - Database Systems in Information Technology
- ITEC 444 - Corporate Training and Development
- ITEC 445 - Advanced Networking

### B. iIT Professional Division Classes (22 Credit Hours)

The following courses are restricted to students enrolled in the professional division of Integrated Information Technology, or those students who receive special permission from the program chair:

- ITEC 301 - Professional Internship Seminar
- ITEC 447 - Management of Information Technology
- ITEC 495 - Professional Internship
- ITEC 544 - Training Systems
- ITEC 560 - Analysis and Applications of Project Management Software
- ITEC 564 - Project Management for Information Systems
- ITEC Elective (one of the following courses)

---

4. Integrated Information Technology Requirements (52 Credit Hours)

### A. iIT Core Courses (30 Credit Hours)

- ITEC 101 – Information Technology in a Global Society
- ITEC 243 - Introduction to Computer Hardware and Software Support
- ITEC 245 - Introduction to Networking
- ITEC 246 - Computer Applications in Business II
- CSCE 204 Program Design and Development
- ITEC 352 - Software Design
- ITEC 362 - Web-Based Support Systems
- ITEC 370 - Database Systems in Information Technology
- ITEC 444 – Human Computer Interaction
- ITEC 445 - Advanced Networking

### B. iIT Professional Division Classes (22 Credit Hours)

The following courses are restricted to students enrolled in the professional division of Integrated Information Technology, or those students who receive special permission from the program chair:

- ITEC 301 - Professional Internship Seminar
- ITEC 447 - Management of Information Technology
- ITEC 493 – IT Security for Managers
- ITEC 495 - Professional Internship
- ITEC 560 - Analysis and Applications of Project Management Software
- ITEC 564 - Project Management for Information Systems
### ITEC Elective (one of the following courses required):

1. ITEC 475 - Mainframe Systems
2. ITEC 545 - Telecommunications
3. ITEC 562 - Advanced Web Support Systems
4. ITEC 570 - Database Management and Administration
5. ITEC 586 - eCommerce Technology in Hospitality
6. ITEC 590 - Special Topics in Integrated Information Technology

### 5. Free Electives (6-18 Credit Hours)

The IIT curriculum includes 6-18 hours of electives depending on how students fulfill the Carolina Core requirements. Any course in the university can be used to satisfy the elective requirement (including additional electives in the major).

### 6. COLLEGE OF NURSING

**New courses (Effective: 2015-2016 Bulletin)**

NURS 309   Nursing Health Assessment. (3) Cognitive skills, psychomotor skills and technologies necessary to perform health assessment.
Prereq and/or coreq: NURS 250
**Restricted to: RN-BSN program students**

**Restricted to: RN-BSN program students**
**Special Permission required:** By instructor

NURS 420   Emerging Issues in Health Care. (3) Examination of emerging health-related issues and their relevance to professional nursing practice.
Prereq: NURS 250
**Restricted to: RN-BSN program students**
NURS 434  Community Health Practicum for RNs. (3) Community-based application and synthesis of professional nursing roles and responsibilities with selected populations determined to be at risk for a variety of health-related problems.  
Restricted to: RN-BSN program students 
Special Permission required: By instructor  

Change in corequisite and prerequisites (Effective: 2015-2016 Bulletin)  
From: NURS 313  Nursing Care of the Older Adult. (3)  
Coreq: NURS 311  
To: NURS 313  Nursing Care of the Older Adult. (3)  
Prereq: NURS 311 and 312 for Generic BSN students;  
NURS 250 RN-BSN students  

From: NURS 428  Nursing Leadership and Management. (4)  
Coreq: Senior Capstone Course  
Preq: NURS 412  
To: NURS 428  Nursing Leadership and Management. (4)  
Prereq: NURS 412 for Pre-licensure BSN students;  
NURS 250 RN-BSN students  

From: NURS 431  Family and Community Health Nursing. (3)  
Coreq: NURS 400  
Prereq: NURS 400  
To: NURS 431  Family and Community Health Nursing. (3)  
Prereq: NURS 250 RN-BSN students  

Change in prerequisites (Effective: 2015-2016 Bulletin)  
From: NURS 400  Evidence Based Practice. (3)  
Prereq: STAT 110, NURS 314  
To: NURS 400  Evidence Based Practice. (3)  
Prereq: STAT 110 and NURS 314 for Generic BSN students;  
NURS 250 for RN-BSN students  

Change in Curriculum – Nursing RN-BSN (Effective: 2015-2016 Bulletin)  
*See attached “c&c Nursing Attachment” pages  

7. ARNOLD SCHOOL OF PUBLIC HEALTH  

A. Department of Environmental Health Sciences  
New course (Effective: 2015-2016 Bulletin)
ENHS 666 Metals and Human Health. (3) Trace metal(loid)s, their fate and transport in the environment and their potential impacts on human health. (Prereq: BIOL 101 or 110; CHEM 101 and 102, or equivalent)

B. Department of Health Promotion, Education and Behavior
Change in curriculum – Addition/change of Minor or Undergrad. Research Track
(Effective: 2015-2016 Bulletin)

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
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<tbody>
<tr>
<td>Core Course Requirements (42 Hours)</td>
<td>Core Course Requirements (6 Hours)</td>
</tr>
<tr>
<td>• HPEB 300 – Introduction to Health Promotion, Education, and Behavior</td>
<td>• HPEB 300 – Introduction to Health Promotion, Education, and Behavior</td>
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<tr>
<td>• HPEB 321 – Personal and Community Health</td>
<td>• HPEB 553 – Community Health Problems</td>
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<td>• HPEB 550 – Behavioral Concepts and Processes for the Health Professional</td>
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<tr>
<td>• HPEB 553 – Community Health Problems</td>
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<tr>
<td>Electives (6 Hours)</td>
<td>Electives (12 Hours)</td>
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<tr>
<td>Select two from the following:</td>
<td>Please select one of the following courses on the topic of “Special Populations”:</td>
</tr>
<tr>
<td>• PUBH 102 – Introduction to Public Health</td>
<td>• SOCY 313 – Sociology of Aging</td>
</tr>
<tr>
<td>• HPEB 301 – Practicum in Health Education</td>
<td>• WGST 113 – Women’s Health</td>
</tr>
<tr>
<td>• HPEB 335 – First Aid and Emergency Preparedness</td>
<td>• WGST 388 – Cultures, Pregnancy, and Birth</td>
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<tr>
<td>• HPEB 492 – Special Topics in Health Promotion, Education, and Behavior</td>
<td>• HPEB 512 – Southern Discomfort: Public Health in the American South</td>
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<td>• HPEB 501 – Human Sexuality Education</td>
<td>• HPEB 513 – Race, Ethnicity, and Health: Examining Health Inequalities</td>
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<tr>
<td>• HPEB 502 – Applied Aspects of Human Nutrition</td>
<td>• HPEB 621 – Maternal and Child Health</td>
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<tr>
<td>• HPEB 511 – Health Problems in a Changing Society</td>
<td>• HPEB 627 – Lesbian, Gay, Bisexual and Transgender (LGBT) Health</td>
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<td>• HPEB 512 – Southern Discomfort: Public Health in the American South</td>
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<td>• HPEB 513 – Race, Ethnicity, and Health</td>
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<tr>
<td>Health: Examining Health Inequalities</td>
<td>PSYC 300 – Human Sexual Behavior</td>
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<td>• HPEB 540 – Drug Prevention</td>
<td>• PSYC 465 – Health Psychology</td>
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<td>• HPEB 542 – Tobacco Prevention and Control in Public Health</td>
<td>• SOCY 360 – Sociology of Medicine and Health</td>
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<td>• HPEB 547 – Consumer Health in Contemporary Society</td>
<td>• HPEB 335 – First Aid and Emergency Preparedness</td>
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<tr>
<td>• HPEB 551 – Medical Anthropology: Field Work</td>
<td>• HPEB 501 – Human Sexuality Education</td>
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<tr>
<td>• HPEB 552 – Medical Anthropology</td>
<td>• HPEB 502 – Applied Aspects of Human Nutrition</td>
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<tr>
<td>• HPEB 620 – Nutrition through the Life Cycle</td>
<td>• HPEB 521 – Total School Health Program</td>
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<tr>
<td>• HPEB 621 – Maternal and Child Health</td>
<td>• HPEB 540 – Drug Prevention</td>
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<tr>
<td>• HPEB 627 – Lesbian, Gay, Bisexual and Transgender (LGBT) Health</td>
<td>• HPEB 542 – Tobacco Prevention and Control in Public Health</td>
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<tr>
<td>• HPEB 654 – Maternal and Child Nutrition</td>
<td>• HPEB 620 – Nutrition through the Life Cycle</td>
</tr>
<tr>
<td>• HPEB 684 – HIV/STI Prevention</td>
<td>• HPEB 654 – Maternal and Child Nutrition</td>
</tr>
</tbody>
</table>

Please select one of the following courses on the topic of “General Concepts in Health Promotion”:

| • SOCY 310 – Social Demography     | • HPEB 511 – Health Problems in a Changing Society |
| • SOCY 315 – World Populations: Problems and Policies | • HPEB 547 – Consumer Health in Contemporary Society |
| • HPEB 301 – Practicum in Health Education | • HPEB 550 – Behavioral Concepts and Processes for the Health Professional |
| • HPEB 321 – Personal and Community Health | |
| • HPEB 470 – Principles of Global Health | |
| • HPEB 488 – Food Systems | |
• HPEB 551 – Medical Anthropology: Field Work
• HPEB 552 – Medical Anthropology

Please select an additional course from one of the three focus areas listed above: “Special Populations”; “Health and Health Behaviors”; or “General Concepts in Health Promotion”.

A maximum of 3 non-HPEB courses can be taken to fulfill the elective requirements.

New course (Effective: Spring 2015)
HPEB 683 Contemporary Topics in Sexual Health. (3) Comprehensive overview of contemporary topics in sexual health.

9. ADDITIONAL ITEMS FOR CONSIDERATION

A. Policy for Approval of USC Connect Graduation with Leadership Distinction Courses

1. USC Connect maintains and posts the list of approved Graduation with Leadership Distinction courses for each pathway on its website. Courses will also be tagged in the Academic Bulletin (similar to the Carolina Core).

2. All courses that were part of the original proposal for Graduation with Leadership Distinction and approved by Faculty Senate June 2013 stand approved.

3. For a course to be added:
   a. Faculty submit a course syllabus with a request for the course to be added including the specification of the desired pathway category to the Office of USC Connect. Pathway categories are:
      i. Community Service
      ii. Global Learning
      iii. Research
      iv. Professional and Civic Engagement: Internships
v. Professional and Civic Engagement: Leadership

b. The request and syllabus are reviewed by a committee of three including the Executive Director of USC Connect or his/her designee, a faculty member in a field related to the pathway, and a professional staff member in the related pathway. The review committee uses the attached guidelines.

c. Upon the committee’s approval, the course is added to the official list.

4. Service Learning Courses: As per the approved Graduation with Leadership Distinction proposal, service learning courses count toward Graduation with Leadership Distinction in Community Service. Service Learning courses are approved via the Office of Student Engagement according to the six hallmarks for service learning. The Office of Student Engagement maintains a semester by semester list of approved service learning courses by section (since all sections of a course are not necessarily service learning sections).

5. The Office of USC Connect submits an annual list to Faculty Senate of courses that are added each year for the official record.
USC Connect Graduation with Leadership Distinction Course Definitions

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Definitions (includes courses focused solely on related content and courses incorporating a beyond the classroom experience)</th>
</tr>
</thead>
</table>
| Community Service| A course focused on non-profit or governmental support roles, services, and issues related to meeting basic human needs, and/or human behavior and human rights in a cultural/societal context. OR A course that integrates meaningful community service with academic content including such components as  
  • Purposeful experience in an off-campus community/agency as a course component, prerequisite, or co-requisite  
  • Reflection across related concepts/issues and community service experience |
| Global Learning  | A course focused on world political, economic, social, and/or cultural differences, commonalities, and relationships. Note: Global Learning courses do NOT include courses taken at an international location (e.g., transfer courses taken as part of a typical Study Abroad experience). OR A course that integrates the study of political, economic, social, and cultural relationships of the world with an international experience including such components as  
  • Purposeful experience in a country other than the United States as a course component, co-requisite or pre-requisite.  
  • Reflection across related concepts/issues and international experience |
| Research         | A course focused on the study of research/inquiry approaches applicable to one or more disciplines. OR A course that integrates experience in research, inquiry or creative scholarship with knowledge and skills from the discipline including such components as  
  • Inquiry, research, or creative scholarship experience appropriate to the field of study  
  • Reflection across related concepts/issues and |
Professional and Civic Engagement: Internship component

A course focused on issues related to work life such as professional ethics, the interrelationship of professional roles, and work responsibilities in the societal context.

OR

A course that integrates knowledge and theory with practical application and skill development in a work setting including such components as
- Purposeful experience in a work setting as a course component, co-requisite, or pre-requisite (including learning outcomes for the work-based experience).
- Reflection across related concepts/issues and work-based experience.

Professional and Civic Engagement: Leadership component

A course focused on knowledge and skills that can assist students in promoting positive change in social, community, or professional settings.

OR

A course that integrates direct leadership experiences with academic content including
- Purposeful experience in leadership as a course component, co-requisite, pre-requisite (including learning outcomes related to leadership)
- Reflection across related concepts/issues and leadership experience.

B. Proposal for Standardized Bulletin Language for Overlay Course Descriptions

Proposal recommends the addition of a note regarding effective date of overlay option to the course description for POLI 201, and to the descriptions of all other currently approved overlay courses. Such language will be a required component in the course descriptions of future Carolina Core overlay courses.

<table>
<thead>
<tr>
<th>Overlay Course</th>
<th>Description with Proposed New Language (underlined)</th>
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<tbody>
<tr>
<td>BIOL 208 Our Hungry World from Malthus to McDonalds</td>
<td>Scientific and social issues concerning the interrelationship of culture and agricultural biotic diversity and technology, climate change, resources management, food security, and human health. Note: Overlay Course Carolina Core: SCI</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
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<td>CPLT 150</td>
<td>Values and Ethics in Literature</td>
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<td>HIST 108</td>
<td>Science and Technology in World History</td>
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<td>Engineering Ethics</td>
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<td>POLI 201</td>
<td>American National Government</td>
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<td>SAEL 200</td>
<td>Social Advocacy and Ethical Life</td>
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<td>Course Code</td>
<td>Course Name</td>
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</table>
| STAT 112    | Statistics and the Media | Statistical and information literacy. Experimental and survey design; descriptive statistics; basic probability; simple confidence intervals and hypothesis tests; statistical software; collection, management, and evaluation of information; and presentation of statistics in the media. Credit given for only STAT 110 or STAT 112.  
**Note:** Overlay Course  
Carolina Core: ARP  
Carolina Core: INF  
(Note: INF credit only if taken at USC Columbia or Palmetto College Campus Spring 2013 or later.) |
| WGST 112    | Women in Society     | A social science perspective of women in psychological, sociological, historical, anthropological, economic, and political contexts; the changing roles, images, and institutions.  
**Note:** Overlay Course  
Carolina Core: GSS  
Carolina Core: VSR  
(Note: VSR credit only if taken at USC Columbia or Palmetto College Campus Fall 2013 or later.) |
| XXX ###     | [Course Name]        | [Course Description]  
**Note:** Overlay Course  
Carolina Core: AAA  
Carolina Core: BBB  
(Note: BBB credit only if taken at USC Columbia or Palmetto College Campus [Effective Term] [Year] or later.) |