REPORT: COMMITTEE ON CURRICULA AND COURSES
(For consideration by the Faculty Senate at its December 7, 2016 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 Kathleen Kirasic (Psychology) in advance of Faculty Senate meeting if errors are noted, either by phone: 777-4137 or e-mail: kck@sc.edu.

(Please note: Unless noted, approvals are effective in the 2017–2018 Bulletin)

1. COLLEGE OF ARTS AND SCIENCES

A. Department of Anthropology

New Course

ANTH 271 Language and Popular Culture. [=LING 241] (3) linguistic anthropology through the lens of popular culture, while learning about different levels of linguistic form. Explore the ethnography of communication through play and performance, discursive and semiotic practices, and varieties of language invoked in popular cultural forms that provide resources for cultural reproduction and contestation

Changes Description and to Carolina Core Designation Only

From: ANTH 212 Food and Culture. (3) Biological and cultural interactions in the development of human diets

To: ANTH 212 Food and Culture. (3) Biological and cultural interactions affecting foodways around the world, and associated ethical issues.

Carolina Core GSS, VSR

B. Department of Biological Sciences

New Course

BIOL 614 Stem Cell Biology. (3) Focuses on the understanding of how stem cells can be used to make fundamental biological discoveries with a special focus in neuroscience.

Prereq: BIOL 302 (grade of a "C" or better for this prerequisite)
Change in description (CCORE)

From: BIOL 208 Our Hungry World from Malthus to McDonalds. (3) 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
Carolina Core: VSR
(VSR credit only if taken at USC Columbia or Palmetto College Campus Fall 2013 or later.)

To: BIOL 208 Our Hungry World from Malthus to McDonalds. (3) 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
Carolina Core: VSR

C. Department of Chemistry and Biochemistry

Change to Major/Degree Program – Chemistry BS – 120 Credit Hours

Existing Program Introduction

Overview
The Department of Chemistry and Biochemistry offers three undergraduate degrees. A general major leads to the Bachelor of Science with a major in chemistry; the intensive major, suggested for those intending to enter the chemical profession, leads to the degree of Bachelor of Science in Chemistry. The department also offers a Bachelor of Science degree with a major in biochemistry and molecular biology. For all majors a minimum grade of C in CHEM 111 and CHEM 112 is required. The Department of Chemistry and Biochemistry has been approved by the American Chemical Society’s (ACS) Committee on Professional Training, and the curriculum for the Bachelor of Science in Chemistry meets ACS requirements.

Retention, Progression, and Transfer Standards

1. Chemistry majors may enroll in a chemistry course a maximum of twice to earn the required grade of C or higher.
   Biochemistry and molecular biology majors may enroll in a biology or chemistry course a maximum of twice to earn the required grade of C or higher.

2. A chemistry major must receive a grade of C or higher in any chemistry course in order for it to be used to satisfy a major requirement. A biochemistry and molecular biology major must receive a grade of C or higher in any chemistry or biology course in order for it to be used to satisfy a major requirement.

3. Any student applying for transfer to the chemistry major from other programs within the University, or from other accredited colleges and universities, is required to have a minimum overall grade point average of 2.50 on a 4.00 scale.

4. To be admitted to the biochemistry and molecular biology major, a student must have earned at least 30 semester hours with a minimum 3.25 grade point average on a 4.00 scale. The 30 semester hours must include CHEM 111, CHEM 112, BIOL 101, BIOL 102, and MATH 141, each passed with a grade of C or higher.

Note: All four standards apply for the Biochemistry and Molecular Biology, B.S. degree. The first three standards apply for the Chemistry, B.S. and the Chemistry, B.S. Chem degrees.

Existing College/School Gen Ed or Departmental Requirements:
1. Carolina Core Plus General Education Requirements

CMW: Carolina Core Effective, Engaged and Persuasive Communication: Writing (6 Hours)
- Must be passed with a grade of C or higher.

ARP: Carolina Core Analytical Reasoning and Problem-Solving (A Minimum of 12 Hours)

Specified or additional College of Arts and Sciences Requirement:
Bachelor of Science degrees require a minimum of 12 hours, as specified by the major program, to include:
- MATH 141 - Calculus I or
  MATH 122 - Calculus for Business Administration and Social Sciences
  as specified by major program
- MATH 142 - Calculus II or
  MATH 170 - Finite Mathematics or
  MATH 172 - Mathematical Modeling for the Life Sciences
  as specified by major program
- STAT 201 - Elementary Statistics (or equivalent) or higher
  as specified by major program
- CSCE 102 - General Applications Programming (or equivalent) or higher
  as specified by major program

SCI: Carolina Core Scientific Literacy (8 Hours)

Specified or additional College of Arts and Sciences Requirement:
- Two 4-credit hour laboratory science courses.

GFL: Carolina Core Global Citizenship and Multicultural Understanding: Communicate Effectively in More than One Language (0-9 Hours)

Specified or additional College of Arts and Sciences Requirement:
- Demonstration of proficiency in one foreign language equivalent to the minimal passing grade on the exit examination in the 122 course is required for all baccalaureate degrees. Students can demonstrate this proficiency by successfully completing Phase II of the Proficiency Test or by successfully completing the 122 course, including the exit exam administered as part of that course.

It is strongly recommended that students continuing the study of a foreign language begin college-level study of that language in their first semester and continue in that language until their particular foreign language requirement is completed.

GHS: Carolina Core Global Citizenship and Multicultural Understanding: Historical Thinking (6 Hours)

Specified or additional College of Arts and Sciences Requirement:
- One Carolina Core GHS-approved course primarily focused on U.S. History: HIST 111, 112, 214, or another GHS approved course determined by the College of Arts and Sciences to fit this geographic category and
- One Carolina Core GHS-approved course primarily focused on non-U.S. History: HIST 101, 102, 104, 105, 106, 108, 109, GERM 280, FILM 300, or another GHS-approved course determined by the College of Arts and Sciences to fit this geographic category.

GSS: Carolina Core Global Citizenship and Multicultural Understanding: Social Sciences (6 Hours)

Specified or additional College of Arts and Sciences Requirement:

AIU: Carolina Core Aesthetic and Interpretive Understanding (3 Hours)

Carolina Core Stand Alone or Overlay Eligible Requirements:
- Up to two of these requirements may be met in overlay courses. At least one of these requirements must be satisfied by a course not applied elsewhere in general education. (3-9 hours)
CMS: Carolina Core Effective, Engaged, and Persuasive Communication: Speech (3 Hours)

INF: Carolina Core Information Literacy (0-3 Hours)

VSR: Carolina Core Values, Ethics, and Social Responsibility (3 Hours)

Other Required General Education Courses for the College of Arts and Sciences

Fine Arts and Humanities Requirements (3 Hours)

- Bachelor of Science degrees require 3 Hours in the fine arts. (May be taken as Carolina Core Aesthetic and Interpretive Understanding.)
- Bachelor of Science degrees require an additional 3 Hours in the fine arts or humanities.

Existing Program/Major Requirements:

Major Requirements (37 Hours)

Courses in chemistry numbered 300 level and above to include the following:

- CHEM 322 - Analytical Chemistry
- CHEM 322L - Analytical Chemistry Laboratory
- CHEM 333 - Organic Chemistry I
- CHEM 333L - Comprehensive Organic Chemistry Laboratory I
- CHEM 334 - Organic Chemistry II
- CHEM 334L - Comprehensive Organic Chemistry Laboratory II
- CHEM 511 - Inorganic Chemistry
- CHEM 541 - Physical Chemistry
- CHEM 541L - Physical Chemistry Laboratory
- CHEM 542 - Physical Chemistry
- CHEM 542L - Physical Chemistry Laboratory
- CHEM 550 - Biochemistry or CHEM 555 - Biochemistry/Molecular Biology I
- CHEM 621 - Instrumental Analysis
- CHEM 621L - Instrumental Analysis Lab
- 3 credits of undergraduate research

Change Program/Major Requirements:

Major Requirements (27 Hours)

Required Courses (24 Hours)

- CHEM 322 - Analytical Chemistry
- CHEM 322L - Analytical Chemistry Laboratory
- CHEM 333 - Organic Chemistry I
- CHEM 333L - Comprehensive Organic Chemistry Laboratory I
- CHEM 334 - Organic Chemistry II
- CHEM 334L - Comprehensive Organic Chemistry Laboratory II
- CHEM 541 - Physical Chemistry
- CHEM 541L - Physical Chemistry Laboratory
- CHEM 542 - Physical Chemistry
- CHEM 542L - Physical Chemistry Laboratory

Select one course from the following:

- CHEM 511 - Inorganic Chemistry
- CHEM 533 - Comprehensive Organic Chemistry III
- CHEM 545 - Physical Biochemistry
- CHEM 550 - Biochemistry
- CHEM 555 - Biochemistry/Molecular Biology I
- CHEM 621 - Instrumental Analysis
- CHEM 623 - Introductory Environmental Chemistry
- CHEM 624 - Aquatic Chemistry
- CHEM 633 - Introduction to Polymer Synthesis
- CHEM 644 - Materials Chemistry
Existing Electives:

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.

Existing Cognate and Minor Requirements:

3. Cognate or Minor Requirements (12-18 Hours) for B.S. Degrees

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. For cognate course offerings in other colleges, consult the appropriate sections of this bulletin. Some major programs have specific cognate requirements.

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.

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 A-Z.

Other Program Requirements:  Change Program Requirements:
### Major Prerequisites

The following courses fulfill some of the general education requirements and some cognates and must be completed for a B.S. degree with a major in chemistry:

- **MATH 141 - Calculus I**
- **MATH 142 - Calculus II**
- **MATH 241 - Vector Calculus**
- One math course beyond MATH 241
- **CSCE 145 - Algorithmic Design I** or **CSCE 206 - Scientific Applications Programming**
- **STAT 509 - Statistics for Engineers** or **STAT 515 - Statistical Methods I**
- **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**

Choose one of the following options:

**Option 1:**

- **CHEM 111 - General Chemistry I**
- **CHEM 112 - General Chemistry II**

**Option 2:**

**CHEM 141, 142 are equivalent to CHEM 111, 112, and 321L.**

- **CHEM 141 - Principles of Chemistry I**
- **CHEM 142 - Principles of Chemistry II**

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### Change to Minor – Chemistry Minor - 18 Credit Hours

**Existing Cognate and Minor Requirements:**

**Change Cognate and Minor Requirements:**
Required Courses (12 Hours)

- 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

Chemistry Electives (4-6 Hours)

- 4-6 additional hours selected from CHEM 300 or above. (one 4 hour course or two 3 hour courses)

Required Courses (12 Hours)

- 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

Chemistry Electives (6 Hours)

- 6 additional hours selected from CHEM 300 or above.

Change Prerequisites

From: CHEM 112 General Chemistry II. (3)

Prereq: Grade of C or higher in CHEM 111 or CHEM 141; and a grade of C or higher in MATH 111, MATH 115, MATH 122, MATH 141 or higher math. Co-requisite: MATH 122, MATH 141 or higher MATH and CHEM 112L.

Note: Three lecture and one recitation hours per week.

To: CHEM 112 General Chemistry II. (3)

Prereq: Grade of C or higher in CHEM 111 and a grade of C or higher in MATH 111, MATH 115, MATH 122, MATH 141 or higher math. Corequisite: CHEM 112L

From: CHEM 545 Physical Biochemistry. (3)

Prereq: Grade of C or higher in CHEM 541 and CHEM 550

Note: Three lecture hours per week.

To: CHEM 545 Physical Biochemistry. (3)

Prerequisites: Grade of C or higher in CHEM 541 and in CHEM 550 or CHEM 555.

Note: Three lecture hours per week.

From: CHEM 550 Biochemistry [=BIOL 541]. (3)

Prereq: CHEM 334 or the equivalent

Note: Three lecture hours per week.
To: CHEM 550  Biochemistry [=BIOL 541]. (3)

Prereq: Grade of C or higher in CHEM 334 or the equivalent.
Note: Three lecture hours per week.

From: CHEM 555  Biochemistry and Molecular Biology I [=BIOL 545]. (3)

Prereq: CHEM 334 or equivalent

To: CHEM 555  Biochemistry and Molecular Biology I [=BIOL 543]. (3)

Prereq: a grade of “C” or higher in CHEM 334.

From: CHEM 556  Biochemistry and Molecular Biology II [=BIOL 546]. (3)

Prereq: BIOL 302; CHEM 555 or consent of instructor
Note: Three lecture hours per week.

To: CHEM 556  Biochemistry and Molecular Biology II [=BIOL 546]. (3)

Prereq: a grade of “C” or higher in BIOL 302.
Note: Three lecture hours per week.

D. Department of Criminology

Changes to Carolina Core Designation Only

From: CRJU 426  Criminal Justice and Mental Health. (3) Interface between the mental health sciences and the criminal justice system.

To: CRJU 426  Criminal Justice and Mental Health. (3) Interface between the mental health sciences and the criminal justice system.

Note: Carolina Core Integrative Course. Criminology & Criminal Justice. BA

E. Department of English

Change in description (CCORE)

From: ENGL 102  Rhetoric and Composition. (3) Instruction and intensive practice in researching, analyzing and composing written arguments about academic and public issues.
To: ENGL 102

Rhetoric and Composition. (3) Instruction and intensive practice in researching, analyzing and composing written arguments about academic and public issues.

Note: Overlay Course
Carolina Core: CMW

F. Department of Geography
Change to Major/Degree Program – Geography BA – 120 Credit Hours

Existing Program Introduction:

<table>
<thead>
<tr>
<th>Learning Outcomes</th>
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<tbody>
<tr>
<td>Students will demonstrate the ability to communicate in written and oral forms. These outcomes are evaluated together because they are connected for our students who often are in careers where their written work is the substance of their oral presentations. We see the linkage of the two to be the most important aspect.</td>
</tr>
<tr>
<td>Students will demonstrate understanding of and the use of one geographical technique such as GIS, remote sensing, cartography, or spatial statistics.</td>
</tr>
<tr>
<td>Students will demonstrate their knowledge of the central themes within the discipline.</td>
</tr>
<tr>
<td>Students will be prepared for careers in the field or for graduate study in geography.</td>
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</tbody>
</table>

Existing College/School Gen Ed or Departmental Requirements:
### Basic Degree Requirements for Bachelor of Arts Degrees (120 Hours)

Note: Bachelor of Arts degrees require 120 hours. Bachelor of Fine Arts degrees require additional hours; see [Program of Study](#) for major requirements.

1. Carolina Core Plus General Education Requirements
2. Major
3. Cognate or Minor Requirements (optional for BAIS majors)
4. Electives

#### 1. Carolina Core Plus General Education Requirements

Note: Bachelor of Fine Arts (BFA) degrees follow General Education Requirements for the BA except where specified in Programs of Study for major requirements.

**CMW:** Carolina Core Effective, Engaged and Persuasive Communication: Writing (6 Hours)

- Must be passed with a grade of C or higher.

**ARP:** Carolina Core Analytical Reasoning and Problem-Solving (6-8 Hours)

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

**GFL:** Carolina Core Global Citizenship and Multicultural Understanding: Communicate Effectively in More than One Language (0-9 Hours)

**GHS:** Carolina Core Global Citizenship and Multicultural Understanding: Historical Thinking (6 Hours)

**GSS:** Carolina Core Global Citizenship and Multicultural Understanding: Social Sciences (6 Hours)

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

**CMS:** Carolina Core Effective, Engaged, and Persuasive Communication: Speech (3 Hours)

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

**VSR:** Carolina Core Values, Ethics, and Social Responsibility (3 Hours)

**Other Required General Education Courses from the College of Arts and Sciences**
Fine Arts and Humanities Requirements (9 Hours)

- Bachelor of Arts degrees require 3 Hours in the fine arts. (May be taken as Carolina Core Aesthetic and Interpretive Understanding.)
- Bachelor of Arts degrees require an additional 9 Hours in the fine arts or humanities.

Existing Program / Major Requirements: Change Program / Major Requirements
2. Geography Major (32-38 Hours)

A minimum grade of C is required in all major courses.

Choose one of the following tracks:

- Physical/Environmental Geography
- Human/Economic Geography
- Geographic Information Science
- General Geography

2. Geography Major (27 Hours)

A minimum grade of C is required in all major courses.

Major prerequisites (3 hours)

- One of the following: GEOG 103, 104, 105, 121, 201, 202, 210

Required Courses (24 hours)

- Select 1 course from GEOG 341, 345, 363, 551
- GEOG 495
- Geography Electives (18 Hours) Select 5-6 GEOG courses with advisor’s approval that are tailored towards a topical, methodological, or geographical focus.

Notes:
Majors may take up to 9 hours of GEOG courses at the 200-level to fulfill major requirements; 6 hours must be at the 500-level. GEOG 595 can be used to fulfill up to 3 hours of geography elective credit, but not the 500-level requirement.

BA with Distinction in Geography (36 Hours)

Available to students majoring in Geography who wish to participate in significant research activities in their major field under the supervision of a faculty mentor.

Prerequisite:

- A minimum GPA of 3.50 in the major, and 3.30 overall, is required to apply for a BA or BS with Distinction in Geography.

Requirements:

- Students must submit a written application for the BA with Distinction in Geography at least eight months before completion of the degree.
- Written sponsorship agreement from a Geography faculty mentor on file in the department.
- An established thesis committee consisting of a tenure-track faculty member in Geography and at least one other tenure-track or research faculty member at the University of South Carolina.
- A written thesis demonstrating significant original work and approved by the thesis committee.
- A public presentation of the Senior Thesis research.
- General major requirements, plus 12 additional credit hours including:
  - A minimum of nine credit hours in GEOG 498, or any GEOG 500-level courses (9 hr)
  - GEOG 499 - Senior Thesis (3 hr)

Notes:

- Students who successfully fulfill all of these requirements with a minimum GPA of 3.50 in the major and 3.30 overall will be awarded their degree with “Distinction in Geography” upon graduation.
- South Carolina Honors College students satisfying the above requirements will graduate with “Honors from the South Carolina Honors College” and with “Distinction in Geography”.


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 on inapplicable courses can be obtained from the College of Arts and Sciences.

Existing Cognate and Minor Requirements:

3. Cognate or Minor Requirements (12-18 Hours) for B.A. Degrees

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. For cognate course offerings in other colleges, consult the appropriate sections of this bulletin. Some major programs have specific cognate requirements.

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 Arts degrees, all cognate courses must be passed with a grade of C or higher.

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 A-Z.

Change to Major/Degree Program – Geography BS – 120 Credit Hours

Existing Program Introduction

Learning Outcomes

- Students will demonstrate the ability to communicate in written and oral forms. These outcomes are evaluated together because they are connected for our students who often are in careers where their written work is the substance of their oral presentations. We see the linkage of the two to be the most important aspect.
- Students will demonstrate understanding of and the use of one geographical technique such as GIS, remote sensing, cartography, or spatial statistics.
- Students will demonstrate their knowledge of the central themes within the discipline.
- Students will be prepared for careers in the field or for graduate study in geography.

Existing College/School Gen Ed or Departmental Requirements:
1. Carolina Core Plus General Education Requirements

CMW: Carolina Core Effective, Engaged and Persuasive Communication: Writing (6 Hours)

- Must be passed with a grade of C or higher.

ARP: Carolina Core Analytical Reasoning and Problem-Solving (A Minimum of 12 Hours)

Specified or additional College of Arts and Sciences Requirement:
Bachelor of Science degrees require a minimum of 12 hours, as specified by the major program, to include:

- MATH 141 - Calculus I or
- MATH 122 - Calculus for Business Administration and Social Sciences
  - as specified by major program

- MATH 142 - Calculus II or
- MATH 170 - Finite Mathematics or
- MATH 172 - Mathematical Modeling for the Life Sciences
  - as specified by major program

- STAT 201 - Elementary Statistics (or equivalent) or higher
  - as specified by major program
- CSCE 102 - General Applications Programming (or equivalent) or higher
  - as specified by major program

SCI: Carolina Core Scientific Literacy (8 Hours)

Specified or additional College of Arts and Sciences Requirement:
- Two 4-credit hour laboratory science courses.

GFL: Carolina Core Global Citizenship and Multicultural Understanding: Communicate Effectively in More than One Language (0-9 Hours)

Specified or additional College of Arts and Sciences Requirement:
- Demonstration of proficiency in one foreign language equivalent to the minimal passing grade on the exit examination in the 122 course is required for all baccalaureate degrees. Students can demonstrate this proficiency by successfully completing Phase II of the Proficiency Test or by successfully completing the 122 course, including the exit exam administered as part of that course.

It is strongly recommended that students continuing the study of a foreign language begin college-level study of that language in their first semester and continue in that language until their particular foreign language requirement is completed.

GHS: Carolina Core Global Citizenship and Multicultural Understanding: Historical Thinking (6 Hours)

Specified or additional College of Arts and Sciences Requirement:
- One Carolina Core GHS-approved course primarily focused on U.S. History: HIST 111, 112, 214, or another GHS approved course determined by the College of Arts and Sciences to fit this geographic category and
- One Carolina Core GHS-approved course primarily focused on non-U.S. History: HIST 101, 102, 104, 105, 106, 108, 109, GERM 280, FILM 300, or another GHS-approved course determined by the College of Arts and Sciences to fit this geographic category.

GSS: Carolina Core Global Citizenship and Multicultural Understanding: Social Sciences (6 Hours)

Specified or additional College of Arts and Sciences Requirement:

AIU: Carolina Core Aesthetic and Interpretive Understanding (3 Hours)

Carolina Core Stand Alone or Overlay Eligible Requirements:
- Up to two of these requirements may be met in overlay courses. At least one of these requirements must be satisfied by a course not applied elsewhere in general education. (3-9 hours)
### Other Required General Education Courses for the College of Arts and Sciences

#### Fine Arts and Humanities Requirements (3 Hours)

- Bachelor of Science degrees require 3 Hours in the fine arts. (May be taken as Carolina Core Aesthetic and Interpretive Understanding.)
- Bachelor of Science degrees require an additional 3 Hours in the fine arts or humanities.
### 2. Geography Major (32-38 Hours)

A minimum grade of C is required in all major courses.

**Choose one of the following tracks:**

- **Physical/Environmental Geography**
- **Human/Economic Geography**
- **Geographic Information Science**
- **General Geography**

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### 2. Geography Major (27 Hours)

A minimum grade of C is required in all major courses.

**Major prerequisites** (3 hours)

- One of the following: GEOG 103, 104, 105, 121, 201, 202, 210

Students must choose one of the following three concentrations:

**A. Physical/Environmental Geography**

**Required Courses** (24 hours)

- Select 1 course from GEOG 341, 345, 363, 551
- GEOG 495
- Geography Electives (18 Hours) Select 5-6 courses from the following: GEOG 330, 343, 346, 347, 348, 360, 365, 370, 371, 516, 530, 545, 546, 547, 549, 566, 567, 568, 569, 570, 571, 573, 590. GEOG 201 or 202 may be used if not used to satisfy the major prerequisite.

**Note:** At least 2 courses for the major must be from the 500 level. GEOG 595 can be used to fulfill up to 3 hours of geography elective credit, but not the 500-level requirement.

**B. Geographic Information Science Track**

**Required Courses** (24-25 hours)

- GEOG 363 and two of the following: GEOG 341, 345, 531
- Three of the following: 349, 535, 541, 542, 551, 552, 554, 562, 563, 564, 565, 575 (GEOG 341, 345, or 531 may be used if not used above)
- GEOG 495
- Geography Elective (3-4 Hours) Select 1 non-GIScience course at the 200-level or above with advisor’s approval.

**Note:** At least 2 courses for the major must be from the 500 level. GEOG 595 can be used to fulfill up to 3 hours of geography elective credit, but not the 500-level requirement.

**C. General Geography**

**Required Courses** (24 hours)

- Select 15 hours from the following: GEOG 330, 341, 343, 345, 346, 347, 348, 349, 360, 363, 365, 370, 371, 516, 530, 531, 535, 541, 542, 545, 546, 547, 549, 551, 552, 554, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 573, 575, 590. Courses used to fulfill major prerequisites
may not be used to fulfill these requirements.
- GEOG 495
- Geography Electives (6 Hours) Select 2 courses at the
  200-level or above with advisor’s approval

Note: At least 2 courses for the major must be from the 500-level. GEOG 595 can be used to fulfill up to 3 hours of geography elective credit, but not the 500-level requirement.

BS with Distinction in Geography (36 Hours)

Available to students majoring in Geography who wish to participate in significant research activities in their major field under the supervision of a faculty mentor.

Prerequisite:

- A minimum GPA of 3.50 in the major, and 3.30 overall, is required to apply for a BA or BS with Distinction in Geography.

Requirements:

- Students must submit a written application for the BS with Distinction in Geography at least eight months before completion of the degree.
- Written sponsorship agreement from a Geography faculty mentor on file in the department.
- An established thesis committee consisting of a tenure-track faculty member in Geography and at least one other tenure-track or research faculty member at the University of South Carolina.
- A written thesis demonstrating significant original work and approved by the thesis committee.
- A public presentation of the Senior Thesis research.
- General major requirements, plus 12 additional credit hours including:
  - A minimum of nine credit hours in GEOG 498, or any GEOG 500-level courses (9 hr)
  - GEOG 499 - Senior Thesis (3 hr)

Notes:

- Students who successfully fulfill all of these requirements with a minimum GPA of 3.50 in the major and 3.30 overall will be awarded their degree with “Distinction in Geography” upon graduation.
- South Carolina Honors College students who complete the above requirements will graduate with "Honors from the South Carolina Honors College" and with “Distinction in Geography”.

Existing Electives:
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.

Existing Cognate and Minor Requirements:

3. Cognate or Minor Requirements (12-18 Hours) for B.S. Degrees

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. For cognate course offerings in other colleges, consult the appropriate sections of this bulletin. Some major programs have specific cognate requirements. 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.

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 A-Z.

Change Title and Description

From: GEOG 499 Undergraduate Research. (3) Research on a significant geography problem in the local environment. Emphasis will be on the development of relatively individualized experiences in scientific investigation.

To: GEOG 499 Senior Thesis. (3) Senior research thesis on a problem of fundamental geographic significance, supervised by faculty member; must include a written final project report.

G. Program - Global Studies
New Courses

GLST 391  Topics in Global Studies. (3) Selected topics in Global Studies. May be repeated with a change in topic.

GLST 490  Global Studies Internship. (1-6) Academic counterpart to a professional work experience in which global or international affairs play a central role. Provides an introduction to foreign affairs and intercultural interactions in a working environment. Introduction to career possibilities for a student trained in global studies.

Prereq: Two courses from the following:
ANTH 102; GEOG 121; GEOG 210; LING 101; POLI 101; RELG 101
Restricted to: Global Studies major with 3.0 or better GPA and completion of at least 45 credits

H. Department of History

New Course

HIST 371  History of Airpower. (3) The evolution of airpower from the early 20th Century through the early 21st Century. The emphasis is on the development of various theories about the application of aerial force, and how operations in time of war have confirmed or challenged these theories from a multinational perspective.

Change in Description

From:  HIST 108  Science and Technology in World History. (3). The development of science and technology and their roles in world civilizations from antiquity to the present.

Note: Overlay Course
Carolina Core: GHS
Carolina Core: VSR
(VSR credit only if taken at USC Columbia or Palmetto College Campus Spring 2013 or later.)

To:  HIST 108  Science and Technology in World History. (3). The development of science and technology and their roles in world civilizations from antiquity to the present.

Note: Overlay Course
Carolina Core: GHS
Carolina Core: VSR

I. Department of Languages, Literatures, and Cultures
a. Comparative Literature Program

**Change in Description (CCORE)**
From: CPLT 150  Values and Ethnics in Literature. (3) Analysis of major works of world literature focusing on values, ethics, and social responsibility

Note: Overlay Course
Carolina Core: AIU, VSR
(VSR credit only if taken at USC Columbia or Palmetto College Campus Fall 2014 or later.)

To: CPLT 150  Values and Ethnics in Literature. (3) Analysis of major works of world literature focusing on values, ethics, and social responsibility

Note: Overlay Course
Carolina Core: AIU, VSR

b. Classical Studies

**Changes to Minor in Classical Studies - 18 Credit Hours**

<table>
<thead>
<tr>
<th>Existing Cognate and Minor Requirements:</th>
<th>Change Cognate and Minor Requirements:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CURRENT VERSION</strong></td>
<td><strong>Minor Requirements (18 hours)</strong></td>
</tr>
<tr>
<td>Classical Studies Minor</td>
<td>Required Courses (9 hours)</td>
</tr>
<tr>
<td><strong>College of Arts and Sciences</strong></td>
<td>• CLAS 586 - Classical Mythology (3 hrs.)</td>
</tr>
<tr>
<td>Minor Requirements (18 Hours)</td>
<td>• 6 hours from the following: CLAS 305, 320, 321, or Greek</td>
</tr>
<tr>
<td>Hours Required for the Minor: 18</td>
<td>or Latin at the 300 level or above</td>
</tr>
<tr>
<td>Required Courses (9 Hours)</td>
<td>Electives (9 hours)</td>
</tr>
<tr>
<td><strong>CLAS 586 - Classical Mythology</strong></td>
<td>Choose 1 of the following courses:</td>
</tr>
<tr>
<td>Six hours of Greek or Latin at the 300-level or above.</td>
<td>• CPLT 301</td>
</tr>
<tr>
<td>Electives (9 Hours)</td>
<td>• CLAS 320</td>
</tr>
<tr>
<td>Choose one of the following courses:</td>
<td>• CLAS 321</td>
</tr>
<tr>
<td>CPLT 301 - Great Books of the Western World</td>
<td>• CLAS 401</td>
</tr>
<tr>
<td>CLAS 240 - Sport and Combat in the Ancient World</td>
<td>• CLAS 301</td>
</tr>
<tr>
<td>CLAS 320 - Sexuality and Gender in Ancient Greece</td>
<td>Choose 1 of the following courses:</td>
</tr>
<tr>
<td>CLAS 321 - Sexuality, Gender, and Power in Ancient Rome</td>
<td>• HIST 302</td>
</tr>
<tr>
<td>CLAS 401 - Greek and Latin Literature in Translation</td>
<td>• HIST 303</td>
</tr>
<tr>
<td>Choose one of the following courses:</td>
<td>• HIST 304</td>
</tr>
<tr>
<td>Choose one of the following courses:</td>
<td></td>
</tr>
<tr>
<td>ARTH 313 - History of Roman Art</td>
<td></td>
</tr>
<tr>
<td>PHIL 505 - Plato</td>
<td></td>
</tr>
<tr>
<td>PHIL 506 - Aristotle</td>
<td></td>
</tr>
<tr>
<td>RELG 302 - New Testament</td>
<td></td>
</tr>
<tr>
<td>RELG 312 - The Life and Letters of Paul</td>
<td></td>
</tr>
<tr>
<td>RELG 313 - The Johannine Literature</td>
<td></td>
</tr>
</tbody>
</table>
Note:
Courses not listed here that are pertinent to Classical Studies may be used upon approval of the program director.

Choose 1 of the following courses:
- CLAS 323
- CLAS 302
- CLAS 360
- CLAS 361
- PHIL 505
- PHIL 506
- PHIL 526
- RELG 310
- RELG 313
- RELG 410

Note:
Other courses, with appropriate content, such as special topics, may be applied with permission of the advisor.

c. **Spanish Program**

**Changes to Major/Degree Program – Spanish BA – 120 Credit Hours**

**Existing College/School Gen Ed or Departmental Requirements:**

<table>
<thead>
<tr>
<th>1. Carolina Core Plus General Education Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note: Bachelor of Fine Arts (BFA) degrees follow General Education Requirements for the BA except where specified in Programs of Study for major requirements.</td>
</tr>
<tr>
<td><strong>CMW:</strong> Carolina Core Effective, Engaged and Persuasive Communication: Writing (6 Hours)</td>
</tr>
<tr>
<td>Must be passed with a grade of C or higher.</td>
</tr>
<tr>
<td><strong>ARP:</strong> Carolina Core Analytical Reasoning and Problem-Solving (6-8 Hours)</td>
</tr>
<tr>
<td><strong>SCI:</strong> Carolina Core Scientific Literacy (8 Hours)</td>
</tr>
<tr>
<td>Specified or additional College of Arts and Sciences Requirement:</td>
</tr>
<tr>
<td>Two 4-credit hour laboratory science courses.</td>
</tr>
<tr>
<td><strong>GFL:</strong> Carolina Core Global Citizenship and Multicultural Understanding: Communicate Effectively in More than One Language (0-9 Hours)</td>
</tr>
<tr>
<td>Specified or additional College of Arts and Sciences Requirement:</td>
</tr>
<tr>
<td>Demonstration of proficiency in one foreign language equivalent to the minimal passing grade on the exit examination in the</td>
</tr>
</tbody>
</table>
122 course is required for all baccalaureate degrees. Students can demonstrate this proficiency by successfully completing Phase II of the Proficiency Test or by successfully completing the 122 course, including the exit exam administered as part of that course.

It is strongly recommended that students continuing the study of a foreign language begin college-level study of that language in their first semester and continue in that language until their particular foreign language requirement is completed.

GHS: Carolina Core Global Citizenship and Multicultural Understanding: Historical Thinking (6 Hours)

Specified or additional College of Arts and Sciences Requirement:

- One Carolina Core GHS-approved course primarily focused on U.S. History: HIST 111, 112, 214, or another GHS-approved course determined by the College of Arts and Sciences to fit this geographic category and
- One Carolina Core GHS-approved course primarily focused on non-U.S. History: HIST 101, 102, 104, 105, 106, 108, 109, GERM 280, FILM 300, or another GHS-approved course determined by the College of Arts and Sciences to fit this geographic category.

GSS: Carolina Core Global Citizenship and Multicultural Understanding: Social Sciences (6 Hours)

Specified or additional College of Arts and Sciences Requirement:

AIU: Carolina Core Aesthetic and Interpretive Understanding (3 Hours)

Carolina Core Stand Alone or Overlay Eligible Requirements:

- Up to two of these requirements may be met in overlay courses. At least one of these requirements must be satisfied by a course not applied elsewhere in general education. (3-9 Hours)

CMS: Carolina Core Effective, Engaged, and Persuasive Communication: Speech (3 Hours)

INF: Carolina Core Information Literacy (0-3 Hours)

VSR: Carolina Core Values, Ethics, and Social Responsibility (3 Hours)

Other Required General Education Courses from the College of Arts and Sciences

Fine Arts and Humanities Requirements (9 Hours)

- Bachelor of Arts degrees require 3 Hours in the fine arts. (May be taken as Carolina Core Aesthetic and Interpretive Understanding.)
- Bachelor of Arts degrees require an additional 9 Hours in the fine arts or humanities.

Existing Program/Major Requirements:

<table>
<thead>
<tr>
<th>2. Spanish Major (27-33 Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A minimum grade of C is required in all major courses.</td>
</tr>
<tr>
<td>General Major (27 Hours)</td>
</tr>
</tbody>
</table>

Change Program/Major Requirements:

<table>
<thead>
<tr>
<th>2. Spanish Major (27-33 Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A minimum grade of C is required in all major courses.</td>
</tr>
<tr>
<td>General Major (27 Hours)</td>
</tr>
<tr>
<td>18 hours from:</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>- SPAN 302 - Advanced Spanish</td>
</tr>
<tr>
<td>- SPAN 303 - Cultural Readings and Advanced Composition</td>
</tr>
<tr>
<td>- SPAN 312 - Introduction to Reading Hispanic Literary Texts</td>
</tr>
<tr>
<td>- SPAN 400 - Spanish Civilization or SPAN 500 - Contemporary Spain</td>
</tr>
<tr>
<td>- SPAN 401 - Spanish American Civilization or SPAN 501 - Contemporary Spanish America</td>
</tr>
<tr>
<td>- SPAN 404 - Literary Tendencies and Masterpieces of Spain or SPAN 405 - Literary Tendencies and Masterpieces of Spanish America</td>
</tr>
<tr>
<td>- Other literature course SPAN 300 or above</td>
</tr>
</tbody>
</table>

Note: Select additional 9 hours electives from SPAN 304, 305, 307, 316, 317, 350, 375, 398, 409, 417, 499, and any 500-level; 3 hours may be chosen from PORT 299 or above.

**Electives (9 Hours)**

Select additional 9 hours electives from:
- SPAN 304 - Cultural Readings and Advanced Conversation
- SPAN 305 - Working with Hispanic Clients
- SPAN 307 - Advanced Oral Practice
- SPAN 316 - Business Spanish
- SPAN 317 - Spanish Phonetics and Pronunciation
- SPAN 350 - Spanish Language Study Abroad
- SPAN 375 - Topics in Hispanic Cultures and Literatures
- SPAN 398 - Selected Topics
- SPAN 409 - Introduction to Stylistics in Spanish
- SPAN 417 - Advanced Spanish for Business and the Professions
- SPAN 499 - Senior Seminar
- Any 500-level
- 3 hours may be chosen from PORT 299 or above.

**Intensive Major (33 Hours)**

<table>
<thead>
<tr>
<th>21 hours from:</th>
<th>21 hours from:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- SPAN 302 - Advanced Spanish</td>
<td>- SPAN 302 - Advanced Spanish</td>
</tr>
<tr>
<td>- SPAN 303 - Cultural Readings and Advanced Composition</td>
<td>- SPAN 303 - Cultural Readings and Advanced Composition</td>
</tr>
<tr>
<td>- SPAN 312 - Introduction to Reading Hispanic Literary Texts</td>
<td>- SPAN 312 - Introduction to Reading Hispanic Literary Texts</td>
</tr>
<tr>
<td>- SPAN 400 - Spanish Civilization or SPAN 500 - Contemporary Spain</td>
<td>- SPAN 400 - Spanish Civilization or SPAN 500 - Contemporary Spain</td>
</tr>
<tr>
<td>- SPAN 401 - Spanish American Civilization or SPAN 501 - Contemporary Spanish America</td>
<td>- SPAN 401 - Spanish American Civilization or SPAN 501 - Contemporary Spanish America</td>
</tr>
<tr>
<td>- SPAN 404 - Literary Tendencies and Masterpieces of Spain or SPAN 405 - Literary Tendencies and Masterpieces of Spanish America</td>
<td>- SPAN 404 - Literary Tendencies and Masterpieces of Spain or SPAN 405 - Literary Tendencies and Masterpieces of Spanish America</td>
</tr>
<tr>
<td>- Other literature course SPAN 300 or above</td>
<td>- Other literature course SPAN 300 or above</td>
</tr>
</tbody>
</table>

Select additional 9 hours electives from:
- SPAN 304 - Cultural Readings and Advanced Conversation
- SPAN 305 - Working with Hispanic Clients
- SPAN 316 - Business Spanish
- SPAN 317 - Spanish Phonetics and Pronunciation
- SPAN 350 - Spanish Language Study Abroad
- SPAN 375 - Topics in Hispanic Cultures and Literatures
- SPAN 380 - Hispanic Film and Culture
- SPAN 398 - Selected Topics
- SPAN 409 - Introduction to Stylistics in Spanish
- SPAN 417 - Advanced Spanish for Business and the Professions
- SPAN 499 - Senior Seminar
- Any 500-level SPAN course
- 3 hours may be chosen from PORT 299 or higher.

2 hours from:
- SPAN 302 - Advanced Spanish
- SPAN 303 - Cultural Readings and Advanced Composition
- SPAN 312 - Introduction to Reading Hispanic Literary Texts
- **SPAN 302 - Advanced Spanish**
- **SPAN 303 - Cultural Readings and Advanced Composition**
- **SPAN 312 - Introduction to Reading Hispanic Literary Texts**

- **SPAN 402 - Spanish Civilization** or **SPAN 500 - Contemporary Spain**
- **SPAN 401 - Spanish American Civilization** or **SPAN 501 - Contemporary Spanish America**
- **SPAN 404 - Literary Tendencies and Masterpieces of Spain** or **SPAN 405 - Literary Tendencies and Masterpieces of Spanish America** or Other literature course **SPAN 304** or above

- **SPAN 499 - Senior Seminar**
- Attainment of an advanced rating on an oral proficiency interview conducted by a departmentally approved tester

*Note:* Intensive majors must earn a minimum grade of B in all major courses.

**Teacher Certification Option (64 Hours)**

- **SPAN 304 - Cultural Readings and Advanced Conversation**
- **SPAN 302 - Advanced Spanish**
- **SPAN 303 - Cultural Readings and Advanced Composition**
- **SPAN 312 - Introduction to Reading Hispanic Literary Texts**
- **SPAN 400 - Spanish Civilization**
- **SPAN 401 - Spanish American Civilization**
- **SPAN 404 - Literary Tendencies and Masterpieces of Spain**
- **SPAN 409 - Introduction to Stylistics in Spanish**
- **SPAN 515 - Introduction to Spanish Linguistics**
- **FORL 472 - Introduction to Technology in Language Education**
- **FORL 474 - Directed Teaching in Foreign Languages**
- **FORL 510 - Teaching Second Languages to Young Children**
- **FORL 511 - Teaching Foreign Languages in Secondary Schools**
- **EDRD 500 - Content Area Literacy PK-12**
- **EDTE 201 - Issues and Trends in Teaching and Learning**
Secondary Schools

- EDRD 500 - Content Area Literacy PK-12
- EDTE 201 - Issues and Trends in Teaching and Learning
- EDEX 491 - Introduction to Inclusion of Students with Mild Disabilities
- EDPY 401 - Learners and the Diversity of Learning
- EDSE 584 - Middle and High School Internship Seminar
- FORL 448 - Teaching Internship in Foreign Languages

Application and Admission

Application and admission to the professional program in education/internship are required for all majors seeking teacher certification. All teacher education candidates must adhere to all education policies and procedures related to clinical experiences and meet University and S.C. Board of Education requirements in order to be recommended for certification. Information is available from academic advisors or the College of Education, Office of Student Affairs, at 803-777-6732.

Note:

- Cognate courses must be selected in consultation with the student's major advisor (12 hours).
- Normally, students pursuing the teacher certification option may apply 300 or higher level education courses and/or 300 or higher level FORL courses to the cognate.

Existing Electives:

### 4. Electives for B.A. Degrees and B.F.A.

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 on inapplicable courses can be obtained from the College of Arts and Sciences.

Existing Cognate and Minor Requirements:

### 3. Cognate or Minor Requirements (12-18 Hours) for B.A. Degrees

#### 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.

For cognate course offerings in other colleges, consult the appropriate sections of this bulletin. Some major programs have specific...
**cognate requirements.**
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 Arts degrees, all cognate courses must be passed with a grade of C or higher.

**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 A-Z.

**Change Note**

**From: SPAN 109**    Beginning Spanish I. (3) Introduction to grammar and practical vocabulary necessary for fundamental communication skills.

Note: Restricted to those who have never studied Spanish or placed by examination into SPAN 109. Fall and Summer I only. Credit may be received only for one of the following: SPAN 109/110; 111; or 121.

**To: SPAN 109**    Beginning Spanish I. (3) Introduction to grammar and practical vocabulary necessary for fundamental communication skills.

Note: Restricted to those who have never studied Spanish or placed by examination into SPAN 109. Credit may be received only for one of the following: SPAN 109/110; 111; or 121.

**From: SPAN 110**    Beginning Spanish II. (3) Introduction to grammar and practical vocabulary necessary for fundamental communication skills.

Note: Restricted to those who have completed SPAN 109. Spring and Summer II only. Credit may be received only for one of the following: SPAN 109/110; 111; or 121.

**To: SPAN 110**    Beginning Spanish II. (3) Introduction to grammar and practical vocabulary necessary for fundamental communication skills.

Note: Restricted to those who have completed SPAN 109. Credit may be received only for one of the following: SPAN 109/110; 111; or 121.
Change Prerequisites

From: SPAN 312  Introduction to Reading Hispanic Literary Texts. (3)
Prereq: Placement at 300 level on Phase II placement exam, grade of C+ or better in SPAN 302, or consent of instructor. Department permission required for transfer students. Note: Graduate students fulfill their foreign language reading requirement with successful completion of the course. Undergraduates may take the course as an elective only. Grades S/U for graduates and undergraduates.

To: SPAN 312  Introduction to Reading Hispanic Literary Texts. (3)
Prereq: SPAN 303, placement above the 303 level on Phase II placement exam, or consent of instructor.

From: SPAN 375  Topics in Hispanic Cultures & Literatures. (3)
Prereq: Placement at 300 level on Phase II placement exam, grade of B or better in SPAN 210 or 211, or consent of instructor. Department permission required for transfer students.

To: SPAN 375  Topics in Hispanic Cultures & Literatures. (3)
Prereq: SPAN 303, placement above the 303 level on Phase II placement exam, or consent of instructor.

From: SPAN 380A  Hispanic Film and Culture. (3)
Prereq: Placement at 300 level on Phase II placement exam, grade of C+ or better in SPAN 309, or consent of instructor. Department permission required for transfer students.

To: SPAN 380A  Hispanic Film and Culture. (3)
Prereq: Placement at 300 level on Phase II placement exam, grade of C+ or better in SPAN 303, or consent of instructor. Department permission required for transfer students.

From: SPAN 380B  Hispanic Film and Culture. (3)
Prereq: Placement at 300 level on Phase II placement exam, grade of C+ or better in SPAN 309, or consent of instructor. Department permission required for transfer students.
To: SPAN 380B Hispanic Film and Culture. (3)

Prereq: Placement at 300 level on Phase II placement exam, grade of C+ or better in SPAN 303, or consent of instructor. Department permission required for transfer students.

**Add Prerequisite**

From: SPAN 400 Spanish Civilization. (3)  
To: SPAN 400 Spanish Civilization. (3)

Prereq: Placement at 300 level on Phase II placement exam, grade of C+ or better in SPAN 303, or consent of instructor. Department permission required for transfer students.

From: SPAN 401 Spanish American Civilization [=LASP 361]. (3)  
To: SPAN 401 Spanish American Civilization [=LASP 361]. (3)

Prereq: Placement at 300 level on Phase II placement exam, grade of C+ or better in SPAN 303, or consent of instructor. Department permission required for transfer students.

From: SPAN 500 Contemporary Span. (3)  
To: SPAN 500 Contemporary Span. (3)

Prereq: For Undergraduates: SPAN 303, Phase II placement exam above SPAN 303, or consent of instructor.

From: SPAN 518 Introduction to Spanish Medieval Literature. (3)  
To: SPAN 518 Introduction to Spanish Medieval Literature. (3)

Prereq: For Undergraduates: SPAN 312 or consent of instructor.

From: SPAN 524 Renaissance and Golden Age Literature. (3)  
To: SPAN 524 Renaissance and Golden Age Literature. (3)

Prereq: For Undergraduates: SPAN 312 or consent of instructor.

From: SPAN 534 Nineteenth-Century Spanish Literature. (3)
To: SPAN 534  Nineteenth-Century Spanish Literature. (3)
Prereq: For Undergraduates: SPAN 312 or consent of instructor.

From: SPAN 538  Twentieth-Century Spanish Literature. (3)
To: SPAN 538  Twentieth-Century Spanish Literature. (3)
Prereq: For Undergraduates: SPAN 312 or consent of instructor.

From: SPAN 543  Spanish-American Literature from the Independence Through Modernism. (3)
To: SPAN 543  Spanish-American Literature from the Independence Through Modernism (3)
Prereq: For Undergraduates: SPAN 312 or consent of instructor

From: SPAN 555  Spanish-American Literature from Modernism Through 1960. (3)
To: SPAN 555  Spanish-American Literature from Modernism Through 1960. (3)
Prereq: For Undergraduates: SPAN 312 or consent of instructor
J. Department of Linguistics

New course

LING 241  Language and Popular Culture [=ANTH 271]. (3) Linguistic anthropological approaches to popular culture, covering different levels of linguistic form and discourse structure. Ethnography of communication, performance, discursive and semiotic practices, varieties of language.

K. Department of Philosophy

Change in description

From: PHIL 325  Engineering Ethics. (3) An investigation of ethical issues in engineering and engineering-related technology. Topics include whistleblowing, employee/employer relations, environmental issues, issues related to advances in information technology, and privacy

Note: Overlay Course
Carolina Core: CMS
Carolina Core: VSR
(CMS credit only if taken at USC Columbia or Palmetto College Campus Fall 2013 or later.)

Graduation with Leadership Distinction: Community Service
Graduation with Leadership Distinction: Professional and Civic Engagement

To: PHIL 325  Engineering Ethics. (3) An investigation of ethical issues in engineering and engineering-related technology. Topics include whistleblowing, employee/employer relations, environmental issues, issues related to advances in information technology, and privacy

Note: Overlay Course
Carolina Core: CMS
Carolina Core: VSR

Graduation with Leadership Distinction: Community Service
Graduation with Leadership Distinction: Professional and Civic Engagement

L. Department of Physics

Change to Minor/Physics Minor – 18 Credit Hours

Existing Cognate and Minor Requirements:  

<table>
<thead>
<tr>
<th>Minor Requirements</th>
<th>Prerequisite Courses</th>
</tr>
</thead>
</table>

Change Cognate and Minor Requirements:  

<table>
<thead>
<tr>
<th>Minor Requirements</th>
<th>Prerequisite Courses</th>
</tr>
</thead>
</table>


Select one option from the following:

PHYS 206 - Principles of Physics I

or

PHYS 211 - Essentials of Physics I

PHYS 211L - Essentials of Physics I Lab

Required Courses

PHYS 207 - Principles of Physics II

PHYS 212 - Essentials of Physics II

PHYS 212L - Essentials of Physics II Lab

PHYS 306 - Principles of Physics III

PHYS 307 - Introduction to Modern Physics

PHYS 308 - Classic Experiments in Physics I

Additional Courses

Four or more credits in advanced courses numbered 309 or higher.

Change to Concentration – Bachelors BS – Physics – 120 Credit Hours

<table>
<thead>
<tr>
<th>Existing Concentration/Area of Emphasis</th>
<th>Change Concentration/Area of Emphasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Major (Engineering Physics Concentration)</td>
<td>Applied Major (Engineering Physics Concentration)</td>
</tr>
<tr>
<td>Select one option from the following:</td>
<td>General Requirements</td>
</tr>
<tr>
<td>Computer Option (50-51 Hours)</td>
<td>In order to select the Applied Major a student must have achieved a minimum overall GPA of 2.5 with at least 15 hours taken at USC-Columbia. In addition, the student must have passed MATH 141 with a grade of &quot;C&quot; or higher.</td>
</tr>
</tbody>
</table>

Note: An AP or IB exam score that provides credit for MATH
<table>
<thead>
<tr>
<th>Physics (31-32 Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 307 - Introduction to Modern Physics</td>
</tr>
<tr>
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</tr>
<tr>
<td>PHYS 506 - Thermal Physics and Statistical Mechanics</td>
</tr>
<tr>
<td>PHYS 509 - Solid State Electronics</td>
</tr>
<tr>
<td>Select one course from the following:</td>
</tr>
<tr>
<td>PHYS 501 - Quantum Physics I</td>
</tr>
<tr>
<td>PHYS 511 - Nuclear Physics</td>
</tr>
<tr>
<td>PHYS 512 - Solid State Physics</td>
</tr>
<tr>
<td>PHYS 514 - Optics, Theory, and Applications</td>
</tr>
<tr>
<td>Computer Science (16 Hours)</td>
</tr>
<tr>
<td>CSCE 146 - Algorithmic Design II</td>
</tr>
<tr>
<td>CSCE 212 - Introduction to Computer Architecture</td>
</tr>
<tr>
<td>Select one course from CSCE 491 or above.</td>
</tr>
<tr>
<td>Select one pair from the following:</td>
</tr>
</tbody>
</table>

| 141 also satisfies this requirement |
| Select one option from the following: |

<table>
<thead>
<tr>
<th>Computer Option (50-51 Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics (31-32 Hours)</td>
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<td>-</td>
</tr>
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</tr>
<tr>
<td>Computer Science (16 Hours)</td>
</tr>
<tr>
<td>Course Code</td>
</tr>
<tr>
<td>-------------</td>
</tr>
<tr>
<td>CSCE 211</td>
</tr>
<tr>
<td>CSCE 313</td>
</tr>
<tr>
<td>or</td>
</tr>
<tr>
<td>CSCE 245</td>
</tr>
<tr>
<td>CSCE 311</td>
</tr>
</tbody>
</table>

**Economics (3 Hours)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 421</td>
<td>Engineering Economics (may be used as a Group IV Social Science Elective)</td>
</tr>
</tbody>
</table>

**Electrical Option (54-57 hours)**

**Physics (31-32 Hours)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 307</td>
<td>Introduction to Modern Physics</td>
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<tr>
<td>PHYS 308</td>
<td>Classic Experiments in Physics I</td>
</tr>
<tr>
<td>PHYS 309</td>
<td>Classic Experiments in Physics II</td>
</tr>
<tr>
<td>PHYS 311</td>
<td>Introduction to Applied Numerical Methods</td>
</tr>
<tr>
<td>PHYS 502</td>
<td>Quantum Physics II</td>
</tr>
<tr>
<td>PHYS 503</td>
<td>Mechanics</td>
</tr>
<tr>
<td>PHYS 504</td>
<td>Electromagnetic Theory</td>
</tr>
<tr>
<td>PHYS 506</td>
<td>Thermal Physics and Statistical Mechanics</td>
</tr>
</tbody>
</table>

Select two courses from the following:

- CSCE 146 - Algorithmic Design II
- CSCE 212 - Introduction to Computer Architecture
- Select one course from CSCE 491 or above.
- Select one pair from the following:
  - CSCE 211 - Digital Logic Design
  - CSCE 313 - Embedded Systems
  or
  - CSCE 245 - Object-Oriented Programming Techniques
  - CSCE 311 - Operating Systems

**Electrical Option (54-57 hours)**

**Electrical Option (52-53 hours)**

**Physics (31-32 Hours)**

**Required Intermediate Physics Courses (10 hours)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 307</td>
<td>Introduction to Modern Physics</td>
</tr>
<tr>
<td>PHYS 311</td>
<td>Introduction to Applied Numerical Methods</td>
</tr>
</tbody>
</table>

Either

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 308</td>
<td>Classic Experiments in Physics I, and</td>
</tr>
<tr>
<td>PHYS 309</td>
<td>Classic Experiments in Physics II</td>
</tr>
</tbody>
</table>

Or

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 310</td>
<td>Intermediate Experimental Physics</td>
</tr>
<tr>
<td>Required Upper Division Physics Courses (18 hours)</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>PHYS 502 - Quantum Physics II</td>
<td></td>
</tr>
<tr>
<td>PHYS 501 - Quantum Physics I</td>
<td></td>
</tr>
<tr>
<td>PHYS 503 - Mechanics</td>
<td></td>
</tr>
<tr>
<td>PHYS 504 - Electromagnetic Theory</td>
<td></td>
</tr>
<tr>
<td>PHYS 506 - Thermal Physics and Statistical Mechanics</td>
<td></td>
</tr>
<tr>
<td>PHYS 541 - Advanced Experimental Physics I</td>
<td></td>
</tr>
<tr>
<td>Select two courses from the following:</td>
<td></td>
</tr>
<tr>
<td>Physics Elective (3-4 hours)</td>
<td></td>
</tr>
<tr>
<td>Select one course from the following:</td>
<td></td>
</tr>
<tr>
<td>PHYS 501 - Quantum Physics I</td>
<td></td>
</tr>
<tr>
<td>PHYS 502 - Quantum Physics II</td>
<td></td>
</tr>
<tr>
<td>PHYS 509 - Solid State Electronics</td>
<td></td>
</tr>
<tr>
<td>PHYS 511 - Nuclear Physics</td>
<td></td>
</tr>
<tr>
<td>PHYS 512 - Solid State Physics</td>
<td></td>
</tr>
<tr>
<td>PHYS 514 - Optics, Theory, and Applications</td>
<td></td>
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<tr>
<td>PHYS 521 - Biophysics</td>
<td></td>
</tr>
<tr>
<td>PHYS 542 - Advanced Experimental Physics II</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrical Engineering (18 Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELCT 101 - Electrical and Electronics Engineering</td>
</tr>
<tr>
<td>ELCT 201 - Introductory Electrical Engineering Laboratory</td>
</tr>
<tr>
<td>ELCT 221 - Circuits</td>
</tr>
<tr>
<td>ELCT 222 - Signals and Systems</td>
</tr>
<tr>
<td>ELCT 301 - Electronics Laboratory</td>
</tr>
<tr>
<td>ELCT 371 – Electronics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Computer Science (3 Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCE 211 - Digital Logic Design</td>
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<table>
<thead>
<tr>
<th>Economics (3 Hours)</th>
</tr>
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<tbody>
<tr>
<td>ECON 421 - Engineering Economics (may be used as a Group IV Social Science Elective)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Mechanical Option (55-57 hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELCT 101 - Electrical and Electronics Engineering</td>
</tr>
<tr>
<td>ELCT 102 - Electrical Science</td>
</tr>
<tr>
<td>Physics (31-33 Hours)</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>PHYS 307 - Introduction to Modern Physics</td>
</tr>
<tr>
<td>PHYS 308 - Classic Experiments in Physics I</td>
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<td>PHYS 309 - Classic Experiments in Physics II</td>
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</tr>
<tr>
<td>PHYS 504 - Electromagnetic Theory</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Select three courses from the following:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>PHYS 501 - Quantum Physics I</td>
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<tr>
<td>PHYS 506 - Thermal Physics and Statistical Mechanics</td>
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<tr>
<td>PHYS 509 - Solid State Electronics</td>
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<td>PHYS 511 - Nuclear Physics</td>
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<tr>
<td>PHYS 512 - Solid State Physics</td>
</tr>
<tr>
<td>PHYS 514 - Optics, Theory, and Applications</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering (21 Hours)</td>
</tr>
<tr>
<td>EMCH 200 - Statics</td>
</tr>
<tr>
<td>EMCH 260 - Introduction to the Mechanics of Solids</td>
</tr>
<tr>
<td>EMCH 290 - Thermodynamic Fundamentals</td>
</tr>
<tr>
<td>EMCH 327 - Design of Mechanical Elements</td>
</tr>
<tr>
<td>EMCH 360 - Fluid Mechanics</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Physics (31-33 Hours)</td>
</tr>
</tbody>
</table>

**Required Intermediate Physics Courses (10 hours)**

PHYS 307 - Introduction to Modern Physics

PHYS 311 - Introduction to Applied Numerical Methods

Either

PHYS 308 - Classic Experiments in Physics I, and

PHYS 309 - Classic Experiments in Physics II

Or
<table>
<thead>
<tr>
<th>EMCH 507 - Computer-Aided Design</th>
<th>PHYS 310 - Intermediate Experimental Physics</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMCH 508 - Finite Element Analysis in Mechanical Engineering</td>
<td><strong>Required Upper Division Physics Courses (15 hours)</strong></td>
</tr>
<tr>
<td><strong>Economics (3 Hours)</strong></td>
<td></td>
</tr>
<tr>
<td>ECON 421 - Engineering Economics (may be used as a Group IV Social Science Elective)</td>
<td>PHYS 501 - Quantum Physics I</td>
</tr>
<tr>
<td></td>
<td>PHYS 503 - Mechanics</td>
</tr>
<tr>
<td></td>
<td>PHYS 504 - Electromagnetic Theory</td>
</tr>
<tr>
<td></td>
<td>PHYS 541 - Advanced Experimental Physics I</td>
</tr>
</tbody>
</table>

**Physics Electives (6-8 hours)**

Select two courses from the following:

| PHYS 502 - Quantum Physics II |
| PHYS 506 - Thermal Physics and Statistical Mechanics |
| PHYS 509 - Solid State Electronics |
| PHYS 511 - Nuclear Physics |
| PHYS 512 - Solid State Physics |
| PHYS 514 - Optics, Theory, and Applications |
| PHYS 521 - Biophysics |
| PHYS 542 - Advanced Experimental Physics II |

**Mechanical Engineering (21 Hours)**

| EMCH 200 - Statics |
| EMCH 260 - Introduction to the Mechanics of Solids |
| EMCH 290 - Thermodynamic Fundamentals |
Choose 4 courses (at least 12 hours) from EMCH 300 and above

- EMCH 327 - Design of Mechanical Elements
- EMCH 360 - Fluid Mechanics
- EMCH 507 - Computer-Aided Design
- EMCH 508 - Finite Element Analysis in Mechanical Engineering

Economics (3 Hours)

- ECON 421 - Engineering Economics (may be used as a Group IV Social Science Elective)

Change to Major/Degree Program – Physics B.S. – 120 Credit Hours

Existing Program/Major Requirements:

<table>
<thead>
<tr>
<th>Major Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following courses fulfill some of the general education requirements and some cognates and must be completed for a major in physics:</td>
</tr>
<tr>
<td>PHYS 199 - Measurement and Analysis in Physics</td>
</tr>
<tr>
<td>PHYS 206 - Principles of Physics I or</td>
</tr>
<tr>
<td>PHYS 211 - Essentials of Physics I</td>
</tr>
<tr>
<td>PHYS 207 - Principles of Physics II or</td>
</tr>
</tbody>
</table>

Change Program/Major Requirements:

<table>
<thead>
<tr>
<th>Major Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following courses fulfill some of the general education requirements and some cognates and must be completed for a major in with a grade of &quot;C&quot; or higher for a B.S. degree in physics:</td>
</tr>
<tr>
<td>PHYS 199 - Measurement and Analysis in Physics</td>
</tr>
<tr>
<td>PHYS 206 - Principles of Physics I or</td>
</tr>
<tr>
<td>PHYS 211 - Essentials of Physics I</td>
</tr>
<tr>
<td>PHYS 207 - Principles of Physics II or</td>
</tr>
<tr>
<td>PHYS 212 - Essentials of Physics II</td>
</tr>
<tr>
<td>PHYS 306 - Principles of Physics III</td>
</tr>
<tr>
<td>MATH 141 - Calculus I</td>
</tr>
<tr>
<td>MATH 142 - Calculus II</td>
</tr>
</tbody>
</table>
Major Requirements

General Major (30-32 hours)

Physics (24 Hours)

PHYS 307 - Introduction to Modern Physics
PHYS 308 - Classic Experiments in Physics I
PHYS 309 - Classic Experiments in Physics II

Note:
A grade of C or higher is required in all physics, mathematics, and engineering courses.

Transfer Requirements

In addition to the minimum University and College of Arts and Sciences requirements, a student seeking to transfer to the physics major from another program within the University, or from another accredited college or university, is required to have earned a grade of "C" or higher in MATH 141.

Note: An AP or IB exam score that provides credit for MATH 141 also satisfies this requirement.

Major Requirements

All major courses must be completed with a grade of "C" or
<table>
<thead>
<tr>
<th>PHYS 501 - Quantum Physics I</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 502 - Quantum Physics II</td>
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<td>PHYS 503 - Mechanics</td>
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</tr>
<tr>
<td>PHYS 504 - Electromagnetic Theory</td>
<td></td>
</tr>
<tr>
<td>PHYS 506 - Thermal Physics and Statistical Mechanics</td>
<td></td>
</tr>
<tr>
<td>Experimental Physics (6-8 Hours)</td>
<td></td>
</tr>
</tbody>
</table>

Experimental physics courses include but are not limited to:

| PHYS 509 - Solid State Electronics |  |
| PHYS 510 - Digital Electronics |  |
| PHYS 511 - Nuclear Physics |  |
| PHYS 512 - Solid State Physics |  |
| PHYS 514 - Optics, Theory, and Applications |  |
| PHYS 531 - Advanced Physics Laboratory I |  |
| PHYS 532 - Advanced Physics Laboratory II |  |

**Higher:**

**General Major (30-32 hours)**

- Physics (24 Hours)

**Required Intermediate Courses (7 hours)**

- PHYS 307 - Introduction to Modern Physics

**Either**

- PHYS 308 - Classic Experiments in Physics I, and
- PHYS 309 - Classic Experiments in Physics II

**Or**

- PHYS 310 - Intermediate Experimental Physics

**Required Upper Division Courses (21 hours)**

- PHYS 501 - Quantum Physics I
- PHYS 502 - Quantum Physics II
- PHYS 503 - Mechanics
- PHYS 504 - Electromagnetic Theory
- PHYS 506 - Thermal Physics and Statistical Mechanics
- PHYS 541 - Advanced Experimental Physics I

**Experimental Physics (6-8 Hours)**

**Experimental Physics Elective (4 Hours)**

Experimental physics courses include but are not limited to:

- PHYS 509 - Solid State Electronics
- PHYS 510 - Digital Electronics
- PHYS 511 - Nuclear Physics
Delete Courses

PHYS 203 Physics for Medical Sciences. (1)
PHYS 206 Principles of Physics I. (3)
PHYS 207 Principles of Physics II. (3)
PHYS 441 Topics in Modern Physics. (1-3)
PHYS 522 Biophysics Laboratory. (3)

Change Description and Prerequisites

From: PHYS 307 Introduction to Modern Physics. (3) Experimental foundations and general concepts of quantum theory; applications to atomic, condensed matter, and nuclear physics

Prereq: a grade of C or better in PHYS 207, 208, and MATH 241

To: PHYS 307 Introduction to Modern Physics. (3) Experimental foundations and general concepts of quantum theory and special relativity; with selected applications from atomic, condensed matter, and nuclear physics.

Prereq: a grade of C or better in PHYS 212 and MATH 241

Change Prerequisites

From: PHYS 502 Quantum Physics II. (3)

Prereq: PHYS 501
To: PHYS 502 Quantum Physics II. (3)
    Prereq: grade of C or better in PHYS 501

From: PHYS 504 Electromagnetic Theory. (4)
    Prereq: PHYS 503

To: PHYS 502 Electromagnetic Theory. (4)
    Prereq: grade of C or better in PHYS 503

From: PHYS 506 Thermal Physic and Statistical Mechanics. (3)
    Prereq: PHYS 306

To: PHYS 506 Thermal Physics and Statistical Mechanics. (3)
    Prereq: grade of C or better in PHYS 306

From: PHYS 510 Digital Electronics. (3)
    Prereq: PHYS 509

To: PHYS 510 Digital Electronics. (3)
    Prereq: grade of C or better in PHYS 509

From: PHYS 511 Nuclear Physics. (4)
    Prereq: Prerequisites: PHYS 502
    Note: Three lecture and three laboratory hours per week.

To: PHYS 511 Nuclear Physics. (4)
    Prereq: grade of C or better in PHYS 501
    Note: Three lecture and three laboratory hours per week.

From: PHYS 517 Computational Physics. (3)
    Prereq: a grade of C or better in PHYS 207 and MATH 142

To: PHYS 517 Computational Physics. (3)
    Prereq: a grade of C or better in PHYS 212 and MATH 142
M. Department of Political Science

Change in Description

From: POLI 201 American National Government. (3) The formation and development of the national government, its organization and powers.

Note: Overlay Course
Carolina Core GSS
Carolina Core VSR
(VSR credit only if taken at USC Columbia or Palmetto College Campus Fall 2013 or later.)

To: POLI 201 American National Government. (3) The formation and development of the national government, its organization and powers.

Note: Overlay Course
Carolina Core GSS
Carolina Core VSR

N. Department of Psychology

Change to Major/Degree Program – BA in Experimental Psychology - 120 Credit Hours

Existing Program Introduction:

<table>
<thead>
<tr>
<th>Experimental Psychology, B.A.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>Learning Outcomes</strong></td>
</tr>
<tr>
<td>• <strong>Degree Requirements</strong></td>
</tr>
<tr>
<td>o • Department of Psychology</td>
</tr>
<tr>
<td>o • College of Arts and Sciences</td>
</tr>
</tbody>
</table>

Learning Outcomes

• Students will demonstrate knowledge of theory and research in the core areas of psychology and demonstrate their ability to apply them beyond the laboratory.
• Students will demonstrate the ability to utilize scientific methodology and psychological principles in the critical evaluation of information in the public domain.
• Graduates will review and synthesize data from multiple sources and prepare and present data based reports.
• Students will demonstrate preparedness for careers based on the foundations of social and behavioral science and/or graduate study.

Basic Degree Requirements for Bachelor of Arts Degrees (120 Hours)
Note: Bachelor of Arts degrees require 120 hours. Bachelor of Fine Arts degrees require additional hours; see Program of Study for major requirements.

1. Carolina Core Plus General Education Requirements
2. Major
3. Cognate or Minor Requirements (optional for BAIS majors)
4. Electives

Existing College/School Gen Ed or Departmental Requirements:

1. **Carolina Core Plus General Education Requirements**

Note: Bachelor of Fine Arts (BFA) degrees follow General Education Requirements for the BA except where specified in Programs of Study for major requirements.

**CMW:** Carolina Core Effective, Engaged and Persuasive Communication: Writing (6 Hours)
- Must be passed with a grade of C or higher.

**ARP:** Carolina Core Analytical Reasoning and Problem-Solving (6-8 Hours)

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

**Specified or additional College of Arts and Sciences Requirement:**
- Two 4-credit hour laboratory science courses.

**GFL:** Carolina Core Global Citizenship and Multicultural Understanding: Communicate Effectively in More than One Language (0-9 Hours)

**Specified or additional College of Arts and Sciences Requirement:**
- Demonstration of proficiency in one foreign language equivalent to the minimal passing grade on the exit examination in the 122 course is required for all baccalaureate degrees. Students can demonstrate this proficiency by successfully completing Phase II of the Proficiency Test or by successfully completing the 122 course, including the exit exam administered as part of that course.

*It is strongly recommended that students continuing the study of a foreign language begin college-level study of that language in their first semester and continue in that language until their particular foreign language requirement is completed.*

**GHS:** Carolina Core Global Citizenship and Multicultural Understanding: Historical Thinking (6 Hours)

**Specified or additional College of Arts and Sciences Requirement:**
- One Carolina Core GHS-approved course primarily focused on U.S. History: HIST 111, 112, 214, or another GHS-approved course determined by the College of Arts and Sciences to fit this geographic category and
- One Carolina Core GHS-approved course primarily focused on non-U.S. History: HIST 101, 102, 104, 105, 106, 108, 109, GERM 280, FILM 300, or another GHS-approved course determined by the College of Arts and Sciences to fit this geographic category.

**GSS:** Carolina Core Global Citizenship and Multicultural Understanding: Social Sciences (6 Hours)

Specified or additional College of Arts and Sciences Requirement:
**Carolina Core Stand Alone or Overlay Eligible Requirements:**

- Up to two of these requirements may be met in overlay courses. At least one of these requirements must be satisfied by a course not applied elsewhere in general education. (3-9 Hours)

**CMS:** Carolina Core Effective, Engaged, and Persuasive Communication: Speech (3 Hours)

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

**VSR:** Carolina Core Values, Ethics, and Social Responsibility (3 Hours)

**Other Required General Education Courses from the College of Arts and Sciences**

**Fine Arts and Humanities Requirements (9 Hours)**

- Bachelor of Arts degrees require 3 Hours in the fine arts. (May be taken as Carolina Core Aesthetic and Interpretive Understanding.)
- Bachelor of Arts degrees require an additional 9 Hours in the fine arts or humanities.

**Existing Program/Major Requirements**

2. **Experimental Psychology Major**

Students planning a major in psychology are advised to take basic science credits in biology and chemistry or physics. This is especially important for those contemplating graduate work.

**Major Prerequisites (7 Hours)**

The following prerequisites may also fulfill General Education and/or Elective requirements:

- **PSYC 101 - Introduction to Psychology**
- **BIOL 110 - General Biology** or 1 Lab Science that studies the animal kingdom

**Change Program/Major Requirements:**

**Major Prerequisites (7 Hours)**

The following prerequisites may also fulfill General Education and/or Elective requirements:

- **PSYC 101 - Introduction to Psychology**
- **BIOL 110 - General Biology** or 1 Lab Science that studies the animal kingdom

**Major Requirements (32 Hours)**

A minimum grade of C is required in all major courses.

**Required Courses (8 Hours)**

- **PSYC 226 - Research Methods in Psychology**
- **PSYC 227 - Psychological Statistics**
- **PSYC 228 - Laboratory in Psychology**

Select 1 course from the following:

- **PSYC 400 - Survey of Learning and Memory**
Major Requirements (32 Hours)

A minimum grade of C is required in all major courses.

Required Courses (8 Hours)

- PSYC 226 - Research Methods in Psychology
- PSYC 227 - Psychological Statistics
- PSYC 228 - Laboratory in Psychology

Select 1 course from the following:

- PSYC 400 - Survey of Learning and Memory
- PSYC 405 - Cognitive Psychology
- PSYC 470 - Introduction to Language Sciences

Select 1 course from the following:

- PSYC 420 - Survey of Developmental Psychology
- PSYC 430 - Survey of Social Psychology
- PSYC 465 - Health Psychology
- PSYC 480 - Multi-Cultural Psychology
- PSYC 487 - Community Psychology

Select 1 course from the following:

- PSYC 410 - Behavioral and Mental Disorders
- PSYC 440 - Survey of Personality
- PSYC 510 - Child Behavioral and Mental Disorders

Select 1 course from the following:

- PSYC 450 - Sensation and Perception
- PSYC 455 - Introduction to Neuroscience
- PSYC 460 - Brain and Behavior
- PSYC 503 - Psychology of Drug Use and Effects
- PSYC 507 - Cognitive Neuroscience

Additional Electives (12 Hours)

- Select 3 hours from PSYC 300 or above
- Select 6 hours from PSYC 400 or above
- Select 3 hours from PSYC 500 or above

Notes:
1. A maximum of 6 hours of independent study (PSYC 498), individual research (PSYC 598, PSYC 599), and/or practicum (PSYC 489) courses may apply as major credit.
2. Students may not receive major credit for both PSYC 455 and 460.
### Additional Electives (12 Hours)

- Select 3 hours from PSYC 300 or above
- Select 6 hours from PSYC 400 or above
- Select 3 hours from PSYC 500 or above

**Note:**

A maximum of 6 hours of independent study (PSYC 498), individual research (PSYC 598, PSYC 599), and/or practicum (PSYC 489) courses may apply as major credit.

### Existing Electives:

**2. Electives for B.A. Degrees and B.F.A.**

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 on inapplicable courses can be obtained from the College of Arts and Sciences.

### Existing Cognate and Minor Requirements:

**2. Cognate or Minor Requirements (12-18 Hours) for B.A. Degrees**

**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." For cognate course offerings in other colleges, consult the appropriate sections of this bulletin. Some major programs have specific cognate requirements.

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 Arts degrees, all cognate courses must be passed with a grade of C or higher.

**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 programsof study can be found at Programs A-Z.

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**Change to Major/Degree Program – BS in Experimental Psychology - 120 Credit Hours**

**Existing Program Introduction:**

**Columbia Campus**

2016-2017 Undergraduate Studies Bulletin

**Experimental Psychology, B.S.**

- Learning Outcomes
- Degree Requirements
  - Department of Psychology
  - College of Arts and Sciences

**Learning Outcomes**

- Students will demonstrate knowledge of theory and research in the core areas of psychology and demonstrate their ability to apply them beyond the laboratory.
- Students will demonstrate the ability to utilize scientific methodology and psychological principles in the critical evaluation of
information in the public domain.

- Graduates will review and synthesize data from multiple sources and prepare and present data based reports.
- Students will demonstrate preparedness for careers based on the foundations of social and behavioral science and/or graduate study.

**Basic Degree Requirements for Bachelor of Science Degrees (120 Hours)**

Note: Bachelor of Science degrees with majors in Biological Sciences, Chemistry, Economics, Geography, Geological Sciences, Interdisciplinary Studies, Mathematics, Physics, Psychology, Sociology or Statistics, and the Bachelor of Science in Chemistry with a major in Chemistry require 120 hours. All other Bachelor of Science degrees require a minimum of 128 hours.

1. Carolina Core Plus General Education Requirements
2. Major
3. Cognate or Minor Requirements (optional for BSIS majors)
4. Electives

**Existing College/School Gen Ed or Departmental Requirements:**

1. **Carolina Core Plus General Education Requirements**

   **CMW: Carolina Core Effective, Engaged and Persuasive Communication: Writing (6 Hours)**
   
   - Must be passed with a grade of C or higher.

   **ARP: Carolina Core Analytical Reasoning and Problem-Solving (A Minimum of 12 Hours)**

2. **Specified or additional College of Arts and Sciences Requirement:**

   Bachelor of Science degrees require a minimum of 12 hours, as specified by the major program, to include:
   
   - **MATH 141 - Calculus I** or
   - **MATH 122 - Calculus for Business Administration and Social Sciences** as specified by major program
   
   - **MATH 142 - Calculus II** or
   - **MATH 170 - Finite Mathematics** or
   - **MATH 172 - Mathematical Modeling for the Life Sciences** as specified by major program
   
   - **STAT 201 - Elementary Statistics** (or equivalent) or higher as specified by major program
   - **CSCE 102 - General Applications Programming** (or equivalent) or higher as specified by major program

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

3. **Specified or additional College of Arts and Sciences Requirement:**
• Two 4-credit-hour laboratory science courses.

**GFL: Carolina Core Global Citizenship and Multicultural Understanding: Communicate Effectively in More than One Language (0-9 Hours)**

**Specified or additional College of Arts and Sciences Requirement:**

• Demonstration of proficiency in one foreign language equivalent to the minimal passing grade on the exit examination in the 122 course is required for all baccalaureate degrees. Students can demonstrate this proficiency by successfully completing Phase II of the Proficiency Test or by successfully completing the 122 course, including the exit exam administered as part of that course.

*It is strongly recommended that students continuing the study of a foreign language begin college-level study of that language in their first semester and continue in that language until their particular foreign language requirement is completed.*

**GHS: Carolina Core Global Citizenship and Multicultural Understanding: Historical Thinking (6 Hours)**

**Specified or additional College of Arts and Sciences Requirement:**

• One Carolina Core GHS-approved course primarily focused on U.S. History: HIST 111, 112, 214, or another GHS approved course determined by the College of Arts and Sciences to fit this geographic category and

  • One Carolina Core GHS-approved course primarily focused on non-U.S. History: HIST 101, 102, 104, 105, 106, 108, 109, GERM 280, FILM 300, or another GHS-approved course determined by the College of Arts and Sciences to fit this geographic category.

**GSS: Carolina Core Global Citizenship and Multicultural Understanding: Social Sciences (6 Hours)**

**Specified or additional College of Arts and Sciences Requirement:**

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

**Carolina Core Stand Alone or Overlay Eligible Requirements:**

• Up to two of these requirements may be met in overlay courses. At least one of these requirements must be satisfied by a course not applied elsewhere in general education. (3-9 hours)

**CMS: Carolina Core Effective, Engaged, and Persuasive Communication: Speech (3 Hours)**

**INF: Carolina Core Information Literacy (0-3 Hours)**
VSR: Carolina Core Values, Ethics, and Social Responsibility (3 Hours)

Other Required General Education Courses for the College of Arts and Sciences

Fine Arts and Humanities Requirements (3 Hours)

- Bachelor of Science degrees require 3 Hours in the fine arts. (May be taken as Carolina Core Aesthetic and Interpretive Understanding.)
- Bachelor of Science degrees require an additional 3 Hours in the fine arts or humanities.

Existing Program/Major Requirements: Change Program/Major Requirements:
2. Experimental Psychology

Major

Students planning a major in psychology are advised to take basic science credits in biology and chemistry or physics. This is especially important for those contemplating graduate work.

Major Prerequisites (7 Hours)

The following prerequisites may also fulfill General Education and/or Elective requirements.

- PSYC 101 - Introduction to Psychology
- BIOL 110 - General Biology or 1 Lab Science that studies the animal kingdom

Major Requirements (32 Hours)

A minimum grade of C is required in all major courses.

Required Courses (8 Hours)

- PSYC 226 - Research Methods in Psychology
- PSYC 227 - Psychological Statistics
- PSYC 228 - Laboratory in Psychology

Select 1 course from the following:

- PSYC 400 - Survey of Learning and Memory
- PSYC 405 - Cognitive Psychology
- PSYC 470 - Introduction to Language Sciences

Select 1 course from the following:

- PSYC 420 - Survey of Developmental Psychology
- PSYC 430 - Survey of Social Psychology
- PSYC 465 - Health Psychology
- PSYC 480 - Multi-Cultural Psychology
- PSYC 487 - Community Psychology

Advanced Laboratory Course (3 Hours)

Select 1 course from the following:

- PSYC 570 - Neuroscience Laboratory
- PSYC 571 - Cognitive Neuroscience Laboratory
- PSYC 572 - Cognitive Psychology Laboratory
- PSYC 574 - Sensation and Perception Laboratory
- PSYC 575 - Developmental Psychology Laboratory
- PSYC 598 - Individual Research
- PSYC 599 - Individual Research

Additional Electives (9 Hours)
- PSYC 410 - Survey of Abnormal Psychology
- PSYC 440 - Survey of Personality
- PSYC 510 - Abnormal Behavior in Children

Select 1 course from the following:

- PSYC 450 - Sensation and Perception
- PSYC 460 - Physiological Psychology
- PSYC 503 - Psychology of Drug Use and Effects
- PSYC 507 - Cognitive Neuroscience

**Advanced Laboratory Course (3 Hours)**

Select 1 course from the following:

- PSYC 570 - Physiological Psychology Laboratory
- PSYC 571 - Cognitive Neuroscience Laboratory
- PSYC 572 - Cognitive Psychology Laboratory
- PSYC 574 - Sensation and Perception Laboratory
- PSYC 575 - Developmental Psychology Laboratory
- PSYC 598 - Individual Research
- PSYC 599 - Individual Research

**Additional Electives (9 Hours)**

- Select 3 hours from PSYC 300 or above
- Select 6 hours from PSYC 400 or above

**Notes:**

1. A maximum of 6 hours of independent study (PSYC 498), individual research (PSYC 598, PSYC 599), and/or practicum (PSYC 489) courses may apply as major credit.
2. Students may not receive major credit for both PSYC 455 and 460.

**Existing Electives:**
2. 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.

Existing Cognate and Minor Requirements:

2. Cognate or Minor Requirements (12-18 Hours) for B.S. Degrees

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 interest 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.

For cognate course offerings in other colleges, consult the appropriate sections of this bulletin.

Some major programs have specific cognate requirements.

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.

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 A-Z.

New Course
PSYC 455  Introduction to Neuroscience. (3) Function of the brain including basic neuroanatomy, neurophysiology and neurochemistry, neural systems, and psychopharmacology as it relates to behavior

PSYC 480  Multi-Cultural Psychology. (3) This course provides an introduction to theories and research in the study of psychosocial issues of racial, ethnic and cultural groups.

Prereq: PSYC 101

**Change Title**

From: PSYC 410  Survey of Abnormal Psychology. (3)
To:  PSYC 410  Behavioral and Mental Disorders. (3)

From: PSYC 510  Abnormal Behavior in Children. (3)
To:  PSYC 510  Child Behavior and Mental Disorders. (3)

**Change Title, and Description**

From: PSYC 460  Physiological Psychology. (3) The neurochemical and neuroanatomical bases of behavior ranging from the reflex to schizophrenia.

To:  PSYC 460  Brain and Behavior. (3) How the brain mediates simple and complex behavior and how we can apply basic research about the brain to real world problems.

**Change Prerequisite**

From: PSYC 503  Psychology of Drug Use and Effects. (3)
Prereq:  PSYC 450 or PSYC 460 or SCHC 330P or consent of instructor

To:  PSYC 503  Psychology of Drug Use and Effects. (3)
Prereq: PSYC 450 or PSYC 455 or PSYC 460 or consent of instructor

From: PSYC 507  Cognitive Neuroscience. (3)
Prereq: one course from PSYC 400, 405, 450, or 460

To:  PSYC 507  Cognitive Neuroscience. (3)
From: PSYC 571  
Cognitive Neuroscience Laboratory. (3)  
Prereq: PSYC 226 and 227; Prereq or coreq: one course from PSYC 400, 405, 450, or 460  
To:  PSYC 571  
Cognitive Neuroscience Laboratory. (3)  
Prereq: PSYC 226 and 227; Prereq or coreq: One course from PSYC 400, 405, 450, 455, or 460

Change Title, Description and Prerequisite

From: PSYC 560  
Advanced Physiological Psychology. (3) Intensive study of topics selected from the field of physiological psychology.  
Prerequisites: PSYC 460  
To: PSYC 560  
Advanced Topics in Neuroscience. (3) Intensive study of topics selected from the field of neuroscience.  
Prereq: PSYC 455 or 460

Change Title and Prerequisite

From: PSYC 570  
Physiological Psychology Laboratory. (3)  
Prereq: PSYC 460 or consent of instructor  
To: PSYC 570  
Neuroscience Laboratory. (3)  
Prereq: PSYC 455 or 460 or consent of instructor

O. Department of Religious Studies

Approved for Carolina Core, GSS

RELG 388  Sociology of Religion [=SOCY 307]. (3)

P. Department of Sociology

Change to Major/Degree Program - BA in Sociology – 120 Credit Hours
Other Program Requirements: Change Program Requirements:

<table>
<thead>
<tr>
<th>Major Prerequisite</th>
<th>Major Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCY 101 - Introductory Sociology</td>
<td>SOCY 101 - Introductory Sociology</td>
</tr>
<tr>
<td>SOCY 220 - Elementary Statistics for Sociologists (or</td>
<td>SOCY 220 - Elementary Statistics for Sociologists</td>
</tr>
<tr>
<td>equivalent course in Quantitative methods)</td>
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</tr>
</tbody>
</table>

Change to Major/BS in Sociology – BS in Sociology – 20 Credit Hours

Other Program Requirements: Change Program Requirements:

<table>
<thead>
<tr>
<th>Major Prerequisite</th>
<th>Major Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCY 101 - Introductory Sociology</td>
<td>SOCY 101 - Introductory Sociology</td>
</tr>
<tr>
<td>SOCY 220 - Elementary Statistics for Sociologists (or</td>
<td>SOCY 220 - Elementary Statistics for Sociologists</td>
</tr>
<tr>
<td>equivalent course in Quantitative methods)</td>
<td></td>
</tr>
</tbody>
</table>

Change in Title, Description
From: SOCY 301 Sociology of Sex Roles [=WGST 300]. (3) Theories, methods, and substantive issues in a sociological approach to sex roles. Topics usually include sex role expectations and socialization in contemporary societies, sub-cultural and social class variations, and structural and institutional factors.
To: SOCY 301 Sex and Gender [=WGST 300]. (3) Critical ways of thinking about sex and gender as social processes in everyday lives. Topics include how sex and gender shape and affect the experiences of women, men, girls, boys, and individuals who live in the spaces in-between (those who are intersex or transgender) across a wide range of social institutions (family, work, education, politics, etc.).

Change in Title
From: SOCY 305 Sociology of the Family [=WGST 305]. (3)
To: SOCY 305 Sociology of Families [=WGST 305]. (3)

Change Course number,
From: SOCY 513 Life Course Demographics. (3)
To: SOCY 510 Life Course Demographics. (3)

Approved for Carolina Core, GSS
SOCY 307 Sociology of Religion [=RELG 338]. (3)
SOCY 309 An Introduction to Social Inequality. (3)
SOCY 310 Social Demography. (3)
SOCY 340 Introduction to Social Problems. (3)

**Q. Program – Speech (CCORE)**

**New Course**

SPCH 145 Online Public Communication. (3) Introduction to theory and practice of live and recorded online spoken communication in public, social, and institutional contexts. Training in invention, performance, and critical analysis of online spoken communication, including audience analysis, persuasion, delivery, and ethical engagement. Includes significant practice in preparing and presenting live online public communication.

**R. Department of Statistics**

**Change in Description**

From: STAT 112 Statistics and the Media. (3) 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

(INF credit only if taken at USC Columbia or Palmetto College Spring 2013 or later.)

To: STAT 112 Statistics and the Media. (3) 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

**S. Department of Theatre and Dance**

**Change to Concentration – Theatre, - Bachelors BA – Theatre – 120 Credit Hours**
Existing Concentration

2. Theatre Major

Major Prerequisites (3 Hours)

- THEA 201 - Introduction to Theatre Studies

Major Requirements (31 Hours)

A minimum grade of C is required in all major courses.

Required Courses (15 Hours)

- THEA 270 - Beginning Acting
- THEA 280 - Elements of Design for Theatre Production
- THEA 561 - History of the Theatre I
- THEA 562 - History of the Theatre II
- THEA 490 - Theatre Capstone Course

Theatre Production Laboratory (4 Hours)

Majors are required to complete 4 hours of Theatre Laboratory credits. All Theatre lab courses maybe repeated for credit. THEA 120 and THEA 121 are required Laboratory credits. THEA 120 must be completed within the first year of declaring the Theatre major.

- THEA 120 - Laboratory Theatre Production
- THEA 121 - Theatre Running Crew Laboratory

Plus 2 hours from:

- THEA 122 - Theatre Performance Laboratory
- THEA 123 - Theatre Production Studio
- THEA 221 - Stage Management Laboratory

Theatre Electives (12 Hours)

- Select 6 hours from THEA 200-300 level
- Select 6 hours from THEA 400 or above

Dramatic Literature (6 Hours)

- Select 6 hours of dramatic literature from ENGL 300 or above

Note:

* May apply towards fulfillment of the Cognate.

Change Concentration

2. Theatre Major

Major Prerequisites (3 Hours)

- THEA 201 - Introduction to Theatre Studies

Major Requirements (31 Hours)

A minimum grade of C is required in all major courses.

Required Courses (15 Hours)

- THEA 270 - Beginning Acting
- THEA 280 - Elements of Design for Theatre Production
- THEA 561 - History of the Theatre I
- THEA 562 - History of the Theatre II
- THEA 490 - Theatre Capstone Course

or THEA 578 Play Direction

Theatre Production Laboratory (4 Hours)

Majors are required to complete 4 hours of Theatre Laboratory credits. All Theatre lab courses maybe repeated for credit. THEA 120 and THEA 121 are required Laboratory credits. THEA 120 must be completed within the first year of declaring the Theatre major.

- THEA 120 - Laboratory Theatre Production
- THEA 121 - Theatre Running Crew Laboratory

Plus 2 hours from:

- THEA 122 - Theatre Performance Laboratory
- THEA 123 - Theatre Production Studio
- THEA 221 - Stage Management Laboratory

Theatre Electives (12 Hours)

- Select 6 hours from THEA 200-300 level
- Select 6 hours from THEA 400 or above

Dramatic Literature (6 Hours)

- Select 6 hours of dramatic literature from ENGL 300 or above

Note:

* May apply towards fulfillment of the Cognate.

Change in description, coreq

From: DANC 471 Synthesis of Dance Education Constructs (pre-internship seminar). (1) Seminar allows students to synthesize content and skills from all previous course work for dance and education before their student teaching experience.
Co-requisite: DANC 470
Prerequisites: DANC 270, 270P, 370, 370P. Open only to teacher certification candidates in dance education

To: DANC 471  Synthesis of Dance Education Constructs (pre-internship seminar). (1) Seminar allows students to synthesize content and skills from all previous dance and education coursework in conjunction with their student teaching experience.

Co-requisite: DANC 479

**Change in description**

From: DANC 478  Integrated Approaches in Dance Education. (5) The application and integration of instructional technology; interdisciplinary, integrated, and immersion instructional strategies; and approaches to cultural dance pedagogy.

To: DANC 478  Integrated Approaches in Dance Education. (5) Study and application of strategies for teaching diverse learners, implementation of instructional technology in the dance classroom, and dance/arts integration.

Note: Carolina Core Integrative Course, Dance, BA

Graduation with Leadership Distinction: Community Service

**Change in description, co-req, and prereq**

From: DANC 479  Teaching Internship in Dance Education, (12) The student will demonstrate the pedagogical knowledge, skill, and disposition necessary to effectively teach K-12 dance education as defined by NASD and NCATE and as measured by a departmental student teaching evaluation.

Prerequisites: minimum of 90 hours in program of study and a 2.5 GPA or higher, formally admitted to the professional program, completed 6 hours of approved courses in the field of education, and completed the additional course requirement for dance education; coreq: EDSE 484 should be taken the same semester

To: DANC 479  Teaching Internship in Dance Education, (12) Practical demonstration of pedagogical knowledge, skill, and dispositions necessary to effectively teach in K-12 dance education as defined and measured by CAEP and ADEPT standards

Prerequisite: Must have fulfilled all other program requirements except DANC 471 (and DANC 479), be admitted to the professional program, and approved for student teaching. Corequisite: DANC 471
T. Women’s & Gender Studies

Change in description
From: WGST 112 Women in Society. (3) 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
(VSR credit only if taken at USC Columbia or Palmetto College Campus Fall 2013 or later.)
Graduation with Leadership Distinction: Diversity and Social Advocacy
Graduation with Leadership Distinction: Community Service
Graduation with Leadership Distinction: Professional and Civic Engagement

To: WGST 112 Women in Society. (3) 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
Graduation with Leadership Distinction: Diversity and Social Advocacy
Graduation with Leadership Distinction: Community Service
Graduation with Leadership Distinction: Professional and Civic Engagement

Change title
From: WGST 305 Sociology of the Family. [=SOCY 305] (3)
To: WGST 305 Sociology of Families. [=SOCY 305] (3)

Change title, description
From: WGST 300 Sociology of Sex Roles. [=SOCY 301] (3) Theories, methods, and substantive issues in a sociological approach to sex roles. Topics usually include sex role expectations and socialization in contemporary societies, sub cultural and social class variations, and structural and institutional factors
To: WGST 300  Sex and Gender. [=SOCY 301] (3) Critical ways of thinking about sex and gender as social processes in everyday lives. Topics include how sex and gender shape and affect the experiences of women, men, girls, boys, and individuals who live in the spaces in-between (those who are intersex or transgender) across a wide range of social institutions (family, work, education, politics, etc.)

U. School of Visual Art and Design
Change to Concentration/Graphic Design/ BFA – Art Studio -  48 Credit Hours

<table>
<thead>
<tr>
<th>Existing</th>
<th>Change</th>
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<tr>
<td><strong>B.F.A. Graphic Design Option (48 Hours)</strong></td>
<td><strong>B.F.A. Graphic Design Option (48 Hours)</strong></td>
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<tr>
<td>- ARTS 245 - Graphic Design I</td>
<td>- ARTS 245 - Graphic Design I</td>
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<tr>
<td>- ARTS 246 - Graphic Design II</td>
<td>- ARTS 246 - Graphic Design II</td>
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<td>- ARTS 100 - Portfolio Review</td>
<td>- ARTS 100 - Portfolio Review</td>
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<td>- ARTS 260 - Photography for Non-Majors</td>
<td>- ARTS 260 - Photography for Non-Majors</td>
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<td>- ARTS 265 - Illustration</td>
<td>- ARTS 265 - Illustration or ARTS 266 - Illustration II</td>
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<tr>
<td>- ARTS 345 - Visual and Verbal Interaction</td>
<td>- ARTS 345 - Visual and Verbal Interaction or 300 level or higher course in Drawing, Painting, or Printmaking</td>
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<td>- ARTS 346 - Series Development and Practice</td>
<td>- ARTS 346 - Series Development and Practice or 300 level or higher course in Drawing, Painting, or Printmaking</td>
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<tr>
<td>- ARTS 445 - Time and Sequence</td>
<td>- ARTS 445 - Time and Sequence</td>
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<td>- ARTS 446 - Structures</td>
<td>- ARTS 446 - Structures or ARTS 465 - Advanced Illustration or ARTS 466 - Advanced Illustration II</td>
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<td>- ARTS 447 - Senior Project I</td>
<td>- ARTS 447 - Senior Project I</td>
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<tr>
<td>- ARTS 448 - Senior Graphic Design Portfolio Preparation</td>
<td>- ARTS 448 - Senior Graphic Design Portfolio Preparation</td>
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<tr>
<td></td>
<td>- ARTS 545 - Internship in Graphic Design or 500 level ARTS course in Drawing, Painting or Printmaking</td>
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<tr>
<td>- ARTS Elective - 200-level or above (3 hrs)</td>
<td>- ARTS Elective - 200-level or above (3 hrs)</td>
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<tr>
<td>- ARTS 400 - Senior Thesis Exhibition</td>
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</tbody>
</table>
V. Additional Programs – College of Arts and Sciences

a. Leadership in the Global Economy

New Concentration – 24 Credit Hours

Optional Concentration/Area of Emphasis/ Distinction Requirements:

<table>
<thead>
<tr>
<th>Global Studies, B.A.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Learning Outcomes</strong></td>
</tr>
<tr>
<td>- Global Studies majors will employ a variety of disciplinary perspectives to demonstrate a critical understanding of global processes and the theories and concepts used to explain and interpret these processes.</td>
</tr>
<tr>
<td>- Global Studies majors will evaluate the interactions between global and local processes by selecting a world region for intensive study.</td>
</tr>
<tr>
<td>- Global Studies majors will demonstrate expertise in key global issues through courses in one of four thematic areas: Global Development and Sustainability; Global Health; Global Conflict and Security Studies; and Global Cultural Studies.</td>
</tr>
<tr>
<td>- Global Studies majors will demonstrate proficiency in a foreign language, allowing them to study, work, travel, and/or conduct research outside of the United States.</td>
</tr>
</tbody>
</table>

**Overview**

Students at the University of South Carolina are living in an increasingly globalized context in which economic, social, environmental, and cultural transformations in one part of the world can affect all others. The Global Studies major is a flexible, interdisciplinary degree program that familiarizes students with the complex historical and contemporary relationships and processes that link together people and places. By focusing on themes relating to globalization, the major also encourages students to recognize and to appreciate the world’s diversity. To achieve this end, the major requires students to focus on a particular world region and to attain proficiency in a modern foreign language. The overall aim of the program is to foster in students a critical, global outlook that will allow them to engage with pressing global questions and to thrive in an interconnected world.

**Basic Degree Requirements for Bachelor of Arts Degrees (120 Hours)**

Note: Bachelor of Arts degrees require 120 hours. Bachelor of Fine Arts degrees require additional hours; see Program of Study for major requirements.

1. Carolina Core Plus General Education Requirements
2. Major
3. Cognate or Minor Requirements (optional for BAIS majors)
4. Electives

1. Carolina Core Plus General Education Requirements

Note: Bachelor of Fine Arts (BFA) degrees follow General Education Requirements for the BA except where specified in Programs of Study for major requirements.

**CMW: Carolina Core Effective, Engaged and Persuasive Communication: Writing (6 Hours)**
• Must be passed with a grade of C or higher.

ARP: Carolina Core Analytical Reasoning and Problem-Solving (6-8 Hours)

SCI: Carolina Core Scientific Literacy (8 Hours)

Specified or additional College of Arts and Sciences Requirement:
• Two 4-credit hour laboratory science courses.

GFL: Carolina Core Global Citizenship and Multicultural Understanding: Communicate Effectively in More than One Language (0-9 Hours)

Specified or additional College of Arts and Sciences Requirement:
• Demonstration of proficiency in one foreign language equivalent to the minimal passing grade on the exit examination in the 122 course is required for all baccalaureate degrees. Students can demonstrate this proficiency by successfully completing Phase II of the Proficiency Test or by successfully completing the 122 course, including the exit exam administered as part of that course.

It is strongly recommended that students continuing the study of a foreign language begin college-level study of that language in their first semester and continue in that language until their particular foreign language requirement is completed.

GHS: Carolina Core Global Citizenship and Multicultural Understanding: Historical Thinking (6 Hours)

Specified or additional College of Arts and Sciences Requirement:
• One Carolina Core GHS-approved course primarily focused on U.S. History: HIST 111, 112, 214, or another GHS-approved course determined by the College of Arts and Sciences to fit this geographic category and
• One Carolina Core GHS-approved course primarily focused on non-U.S. History: HIST 101, 102, 104, 105, 106, 108, 109, GERM 280, FILM 300, or another GHS-approved course determined by the College of Arts and Sciences to fit this geographic category.

GSS: Carolina Core Global Citizenship and Multicultural Understanding: Social Sciences (6 Hours)

Specified or additional College of Arts and Sciences Requirement:

AIU: Carolina Core Aesthetic and Interpretive Understanding (3 Hours)

Carolina Core Stand Alone or Overlay Eligible Requirements:
• Up to two of these requirements may be met in overlay courses. At least one of these requirements must be satisfied by a course not applied elsewhere in general education. (3-9 Hours)
• Bachelor of Arts degrees require 3 Hours in the fine arts. (May be taken as Carolina Core Aesthetic and Interpretive Understanding.)
• Bachelor of Arts degrees require an additional 9 Hours in the fine arts or humanities.

CMS: Carolina Core Effective, Engaged, and Persuasive Communication: Speech (3 Hours)

INF: Carolina Core Information Literacy (0-3 Hours)

VSR: Carolina Core Values, Ethics, and Social Responsibility (3 Hours)

Other Required General Education Courses from the College of Arts and Sciences
Fine Arts and Humanities Requirements (9 Hours)

Prerequisites (6 Hours)

Two courses from the following:

- ANTH 102 - Understanding Other Cultures
- GEOG 121 - Globalization and World Regions
- GEOG 210 - Peoples, Places, and Environments
- LING 101 - Linguistics 1: Introduction to Language
- POLI 101 - Introduction to Global Politics
- RELG 101 - Exploring Religions

Notes:

1. Historical Thinking: College of Arts and Sciences general education requirements specify that students must take two courses designated as Carolina Core GHS (Historical Thinking); one course must be focused on U.S. history and the other focused on non-U.S. history. Prerequisites may be applied to general education requirements, where appropriate.

2. Language Proficiency: Global Studies students must demonstrate proficiency in one modern foreign language, approved by the advisor, at the advanced level by completing 6 hours in language courses numbered 300 and above or the equivalent. Courses in that foreign language at the beginning or intermediate levels (100 or 200 - levels), if needed as prerequisites, may be applied to general education requirements, where appropriate.

3. Analytical Reasoning and Problem Solving: Global Studies students pursuing the Leadership in the Global Economy concentration must select either MATH 122 or MATH 141 as one of their ARP-approved courses. Prerequisites may be applied to general education requirements, where appropriate.

4. Global Citizenship and Multicultural Understanding: Social Science: Global Studies students pursuing the Leadership in the Global Economy concentration must use ECON 224 as one of the two required GSS courses. As ECON 224 is not on the list of approved Carolina Core courses for GSS, they need to make sure their other GSS course is approved for the Carolina Core.

Major Requirements (24-33 Hours)

I. Foreign language (modern) - Two 300 or above level language courses (6 Hours)

II. Global Theme or Concentration --- Students must complete one theme or one concentration from the following lists (6-15 hours). Special topics courses with appropriate content may be applied to the global theme or concentration requirement with approval of the advisor.

II.a. Global Themes - Two courses selected from one of the following global theme groups (6 Hours)

- Global Development and Sustainability Studies Courses
  - ANTH 208 - Anthropology of Globalization and Development
  - ANTH 381 - Gender and Globalization
  - ANTH 556 - Language and Globalization
  - ANTH 569 - Environment and Development
  - ANTH 581 - Globalization and Cultural Questions
  - ECON 224 - Introduction to Economics
  - ECON 548 - Environmental Economics
  - ENVR 231 - Introduction to Sustainability Management and Leadership
  - ENVR 295 - Green Technology in Germany
  - ENVR 322 - Environmental Ethics
  - ENVR 331 - Integrating Sustainability
Global Health Studies Courses
- AFAM 365 - Medical Experimentation and the Black Body
- ANTH 204 - Plagues Past and Present
- ANTH 365 - Medical Experimentation and the Black Body
- ANTH 388 - Cultures, Pregnancy, and Birth
- ANTH 551 - Medical Anthropology: Fieldwork
- ANTH 552 - Medical Anthropology
- ANTH 565 - Health and Disease in the Past
- ENHS 321 - Environmental Pollution and Health
- ENHS 323 - Global Environmental Health
- ENV 321 - Environmental Pollution and Health
- ENV 323 - Global Environmental Health
- EPID 410 - Principles of Epidemiology
- HPEB 470 - Principles of Global Health
- HPEB 551 - Medical Anthropology: Field Work
- HPEB 552 - Medical Anthropology
- HPEB 621 - Maternal and Child Health
- HPEB 684 - HIV/STI Prevention
- RELG 473 - Religions, Medicines, and Healing
- SOCY 360 - Sociology of Medicine and Health
- SOWK 306 - Social Work in Other Nations
- SOWK 307 - International Social Work and Social Justice
- WGST 113 - Women's Health
- WGST 388 - Cultures, Pregnancy, and Birth
- WGST 621 - Maternal and Child Health

Global Conflict and Security Studies Courses
- ANTH 353 - Anthropology of Law and Conflict
- ANTH 535 - Conflict Archaeology
ARMY 406 - American Military Experience
GEOG 330 - The Geography of Disasters
GEOG 530 - Environmental Hazards
HIST 335 - The History of Modern Russia and the Soviet Union
HIST 338 - Modern Germany
HIST 347 - The Middle East in Modern Times
HIST 352 - Africa since 1800
HIST 354 - Modern East Asia
HIST 356 - China Since 1949
HIST 358 - Japan since 1800
HIST 374 - Nationalism: Myth and Reality
HIST 376 - War and European Society, 1914-1945
HIST 396 - Evolution of Warfare I
HIST 397 - Evolution of Warfare II
HIST 406 - The United States and a World at War, 1917-1945
HIST 407 - United States History Since 1945
HIST 421 - Modern Latin America
LASP 342 - Modern Latin America
LING 240 - Language Conflict and Language Rights
HIST 465 - American Diplomatic History
HIST 466 - American Diplomatic History
HIST 468 - American Military Experience
POLI 330 - International Organization
POLI 340 - The Conduct and Formulation of United States Foreign Policy
POLI 341 - Contemporary United States Foreign Policy
POLI 342 - National Security Policies of the United States
POLI 383 - Genocide: A Comparative Perspective
POLI 416 - Revolution and Political Violence
POLI 417 - Theories of War in International Relations
POLI 420 - International Law
POLI 421 - Law and Contemporary International Problems
POLI 432 - Nationalism and Ethnicity in World Politics
POLI 442 - Globalization and Security

**Global Cultural Studies Courses**

AFAM 202 - Introduction to African-American Studies: Arts and Cultural Foundations
ANTH 355 - Language, Culture, and Society
ANTH 381 - Gender and Globalization
ANTH 553 - Anthropological Approaches to Narrative and Performance
ANTH 556 - Language and Globalization
ANTH 581 - Globalization and Cultural Questions
ARTH 335 - History of 20th Century Art
CHIN 335 - Women in China
CPLT 270 - World Literature
CPLT 301 - Great Books of the Western World I
CPLT 302 - Great Books of the Western World II
CPLT 303 - Great Books of the Eastern World
EDUC 360 - Global and Multicultural Perspectives on Education in International Settings
ENGL 270 - World Literature
ENGL 390 - Great Books of the Western World I
ENGL 391 - Great Books of the Western World II
ENGL 392 - Great Books of the Eastern World
ENGL 437 - Women Writers
ENGL 455 - Language in Society
II.b. Global Concentrations – Courses selected to fulfill one of the following concentrations (12-18 Hours)

- **Leadership in the Global Economy** (15-18 Hours)
  Prerequisite: Students must select one of the following options (3-6 Hours):
  
  - ACCT 222 – Introduction to Accounting
  - RETL 261 – Functional Accounting I and RETL 262 – Functional Accounting II
  
  Required Courses: Students must select one course from four of the following categories (12 Hours)
  
  - **Environmental Studies**
    - ENVR 332 - Environmental Ethics
    - ENVR 531 - Sustainability Management and Leadership Strategies
    - ENVR 548 – Environmental Economics
  
  - **Geography**
    - GEOG 311 – Cultural Geography
    - GEOG 312 – Geography and Global Geopolitics (GLD)
    - GEOG 313 – Economic Geography
    - GEOG 569 – Environment and Development (GLD)
    - GEOG 581 – Globalization and Cultural Questions
  
  - **Journalism**
    - JOUR 541 - International Mass Communications
    - JOUR 542 – Public Opinion and Persuasion
  
  - **Management**
    - MGMT 403 - Leadership in Organizations
  
  - **Music**
    - MUSC 580 – Music/Arts Entrepreneurship
    - MUSC 582 – Music and Money
  
  - **Philosophy**
    - PHIL 320 – Ethics
    - PHIL 322 - Environmental Ethics
    - PHIL 323 - Ethics of Science and Technology
    - PHIL 324 – Business Ethics
  
  - **Political Science**
    - POLI 315- International Relations (GLD)
    - POLI 330 – International Organization (GLD)
    - POLI 370 - Introduction to Public Administration
III. World Region - Three courses selected from one of the following area studies groups (9 Hours). See entries for minors in these areas in the undergraduate Bulletin for lists of approved courses. Special topics courses with appropriate content may be applied to the world region requirement with approval of the advisor.

- African Studies
- Asian Studies
- European Studies
- Middle East and North Africa (Islamic World Studies)
- Latin American Studies
- Russian and Eurasian Studies

IV. Major Elective – One course from any of the approved global theme, global concentration, or world region courses (0-3 Hours). Note: Students completing a concentration are exempt from this requirement.

Notes:

- International Experience
  Students are strongly encouraged to spend a period of time overseas, preferably in a country where they can develop their language skills. Participating in a study abroad program or an overseas work experience are two ways to gain an international experience. A period of a semester or full year is most beneficial. Approved study abroad courses may apply to some Global Studies major requirements, with permission of the advisor and the College.

- Second Majors
  Global Studies majors are encouraged to pursue appropriate second majors, where possible. Students who are declared majors in both Global Studies and a second major may count 3 credit hours of major course work, where applicable, toward both majors.

3. Cognate or Minor Requirements (12-18 Hours) for B.A. Degrees

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.

For cognate course offerings in other colleges, consult the appropriate sections of this bulletin. Some major programs have specific cognate requirements.

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 Arts degrees, all cognate courses must be passed with a grade of C or higher.

Recommended Cognates

Diversity

- AFAM 580 – Culture and Identity in the African Diaspora
- PSYC 487 – Community Psychology
- SOCY 308 – Community Organization
- WGST 381 – Gender and Globalization

Sustainability

- GEOG 321 – Sustainable Cities
- ENVR 331 – Integrating Sustainability
- ENVR 531 – Sustainability Management and Leadership Strategies
- PHIL 322 – Environmental Ethics

Tourism and Management

Prerequisite: HRTM 280 – Foundations of Tourism (satisfies GSS Carolina Core requirement)

- HRTM 483 – Tourism Economics
- HRTM 537 – Multi-Cultural Dimensions of the Hospitality Industry
- HRTM 565 – International Lodging Management
- HRTM 597 – Global Travel and Tourism

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 A-Z.


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 on inapplicable courses can be obtained from the College of Arts and Sciences.

b. Neuroscience

Change to Minor – Neuroscience Minor - 18 Credit Hours
**Existing Cognate and Minor Requirements:**

**Columbia Campus**  
**2016-2017 Undergraduate Studies Bulletin**  
**Neuroscience Minor**

- **Application**
  - Opportunity to Participate in Honors College Courses
  - Minor Requirements
    - Interdisciplinary Minors
    - College of Arts and Sciences

This minor is designed for students going into graduate studies in neuroscience, animal behavior, or psychology; students going into medicine; and students simply interested in gaining a better understanding of their own interactions with the world. The minor will provide opportunities to develop a strong background in how the nervous system works from the social and behavioral to the cellular and molecular levels. Beyond a core requirement, students may focus on topics of specific interest. Research experience is required.

**Application**

Students must complete an application and qualify for the neuroscience minor. Applications can be submitted anytime after the freshman year (30 credit hours must be completed). Normally, students will be expected to have at least a 3.30 grade point average. Applications will be evaluated by the Neuroscience Education Committee, and they will be judged on overall academic merit. Application forms can be obtained from the Departments of Psychology and Biological Sciences, the College of Arts and Sciences, and the Honors College and off the Web at [http://zebra.biol.sc.edu/neurominor](http://zebra.biol.sc.edu/neurominor).

**Opportunity to Participate in Honors College Courses**

Courses suitable for the neuroscience minor may be offered as honors courses. Students minoring in neuroscience will be able to take these courses, and they will have priority registration, even over Honors College students who are not minoring in neuroscience. This will provide students outside of the Honors College with the opportunity to do course work in the Honors College.

**Minor Requirements (18 Hours)**

Eighteen credit hours are required to satisfy the minor. Students must complete at least two of the listed core courses (Group A) and an optional distribution of courses from a secondary list (Group C). Students must also complete 2-3 credit hours of neuroscience research experience in a participating laboratory (BIOL 399, PSYC 498, or SCCC 399)—these credit hours are in addition to the research or practicum hours that may be applied to the chosen major. Information about laboratories in neuroscience can be found at [http://zebra.biol.sc.edu/neurominor](http://zebra.biol.sc.edu/neurominor). Additional honors proseminars or other specialized courses in the neurosciences may satisfy minor requirements in Group C, provided the course substitutions are approved by the Neuroscience Education Committee.

**Group A: Core Courses (6-7 Hours)**

Select two courses from the following:

- SCCC 330P - Introduction to Neuroscience
- BIOL 635 - Neurobiology
- PSYC 460 - Physiological Psychology

**Group B: Research in Neuroscience (2-3 Hours)**

Select one course from the following:

- PSYC 498 - Advanced Independent Study
- BIOL 399 - Independent Study
Group C (8-10 Hours)
Select 8 to 10 hours from the following:

- ANTH 361 - Becoming Human
- BIOL 534 - Animal Behavior
- BIOL 534L - Animal Behavior Laboratory
- BIOL 460 - General Physiology
- BIOL 543 - Comparative Physiology
- BIOL 302 - Cell and Molecular Biology
- BIOL 302L - Cell and Molecular Biology Laboratory
- BIOL 635 - Neurobiology
- PSYC 400 - Survey of Learning and Memory
- PSYC 405 - Cognitive Psychology
- PSYC 450 - Sensation and Perception
- PSYC 498 - Advanced Independent Study
- PSYC 503 - Psychology of Drug Use and Effects
- PSYC 524 - Nature of Students with Mental Retardation
- PSYC 507 - Cognitive Neuroscience
- PSYC 571 - Cognitive Neuroscience Laboratory
- PSYC 560 - Advanced Physiological Psychology
- PSYC 570 - Physiological Psychology Laboratory
- SCHC 386F - Neurobiology of Culture
- SCHC 383Q - Neuroethics
- SCHC 393E - Scientific Publishing (Neuroscience)
- SCHC 399 - Independent Study

Change Cognate and Minor Requirements:

**College of Arts and Sciences Neuroscience Minor**

The minor is designed for students going into graduate studies in neuroscience, animal behavior, psychology or medicine and for students simply interested in gaining a better understanding of their own interactions with the world. The minor will provide opportunities to develop a strong background of how the nervous system works from the social and behavioral to the cellular and molecular levels. Beyond core requirements, students may focus on topics of specific interest in the very broad field of neuroscience. Research experience in neuroscience is required.

**Application**

Students must complete an application and qualify for the neuroscience minor. Applications can be submitted any time after their first year of college (30 credit hours must be completed). Normally, students will be expected to have at least a 3.30 grade point average. Applications will be evaluated by the co-directors of the Neuroscience Minor and they will be judged on overall academic merit. Application forms can be obtained from the Departments of Psychology and Biological Sciences and from the neuroscience minor web page.
Requirements

Eighteen credit hours are required to satisfy the minor. Students must complete the required three credit Introduction to Neuroscience course and 2-3 credit hours of neuroscience research experience under an independent study number. Additional honors courses or other specialized courses in the neurosciences may also satisfy the minor requirements provided the course substitutions are approved by the co-directors of the neuroscience minor. No more than a total of six credits of independent study credits may count towards the minor.

Required Prerequisites to the Minor:

- BIOL 101 – Biological Principles I
- PSYC 101 – Introduction to Psychology

Required: 3 credits:

Research Requirement: 2 to 3 credits

The independent research can be done under any major independent research codes as long as the research is in the field of neuroscience, and is approved by the co-directors of the neuroscience minor. Examples include BIOL 399, PSYC 498, PSYC 598, PSYC 599, SCHC 399, and BMEN 499

Electives: Select courses from the following list. In addition, one three credit independent study in neuroscience may count in the Elective group. Sometimes Honors courses and special topics courses in neuroscience are offered and these are approved on a semester by semester basis by the co-directors of the neuroscience minor.

Note that many of the courses below have prerequisites and/or co-requisites. Course instructors can always give permission to take the course without the listed prerequisites and/or co-requisites and you should consult with individual instructors if you think that you have an adequate background and would like to take the course.

- ANTH 361 – Becoming Human
- BIOL 302/L – Cell and Molecular Biology and Laboratory (Prereqs: BIOL 102, Coreqs: CHEM 333)
- BIOL 405 – Molecular and Cellular Neurobiology (Prereqs: BIOL 101 and 302 or permission of instructor)
- BIOL 460 – Physiology (Prereqs: BIOL 302 or MSCI 311)
- BIOL 534 – Animal Behavior (Prereqs: 301 or MSCI 311)
- BIOL 534L – Animal Behavior Laboratory (Coreq: BIOL 534)
- BIOL 614 – Stem Cell Biology (Prereqs: BIOL 302 or permission of instructor)
- BIOL 634 – Biology of Neurological Disease (Prereqs: BIOL 302 and SCHC 330 or BIOL 405)
- BIOL 635 – Neurophysiology (Prereqs: BIOL 302 and permission of Instructor)
- BMEN 321 – Biomonitoring and Electrophysiology (Prereqs: MATH 242, PHYS 212, BIOL 302)
- CSCE 555 – Algorithms in Bioinformatics (Prereqs: CSCE 350)
- ELCT 220 – Electrical Engineering for Non-majors (Prereq: MATH 142)
- EXSC 351 – Acquisition of Motor Skills (Prereqs: EXSC 223 and 224)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 351</td>
<td>Mind &amp; Nature</td>
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<tr>
<td>PSYC 370</td>
<td>Psychology of Consciousness</td>
<td></td>
</tr>
<tr>
<td>PSYC 400</td>
<td>Survey of Learning and Memory (Prereq: PSYC 101)</td>
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<tr>
<td>PSYC 405</td>
<td>Cognitive Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 450</td>
<td>Sensation and Perception (Prereq: PSYC 101)</td>
<td></td>
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<tr>
<td>PSYC 503</td>
<td>Psychology Drug Use and Effects (Prereq: PSYC 450 or PSYC 460 or PSYC 455)</td>
<td></td>
</tr>
<tr>
<td>PSYC 507</td>
<td>Cognitive Neuroscience (Prereq: PSYC 400 or 405 or 450 or 460)</td>
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<tr>
<td>PSYC 571</td>
<td>Cognitive Neuroscience Laboratory (Prereqs: PSYC 226 and 227; Prereq or coreq: PSYC 400 or 405 or 450 or 460 or 455)</td>
<td></td>
</tr>
<tr>
<td>PSYC 560</td>
<td>Advanced Topics in Neuroscience (Prereq: PSYC 455 or 460)</td>
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</tr>
<tr>
<td>PSYC 570</td>
<td>Neuroscience Laboratory (Prereq: PSYC 455 or 460)</td>
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### c. Social Advocacy and Ethical Life

**Change in Description**

**From:** SAEL 200  
Social Advocacy and Ethical Life. (3) Introduction to nature and relationship of ethics and oral forms of advocacy. Includes foundational training in ethical theory and its relevance to socio-political expression and training in the principles and performance of ethical oral communication, with emphasis on argumentation and audience engagement.

**Note:** Overlay Course  
Carolina Core: CMS  
Carolina Core: VSR  
(VSR credit only if taken at USC Columbia or Palmetto College Campus Spring 2013 or later.)

Graduation with Leadership Distinction: Diversity and Social Advocacy  
Graduation with Leadership Distinction: Professional and Civic Engagement

**To:** SAEL 200  
Social Advocacy and Ethical Life. (3) Introduction to nature and relationship of ethics and oral forms of advocacy. Includes foundational training in ethical theory and its relevance to socio-political expression and training in the principles and performance of ethical oral communication, with emphasis on argumentation and audience engagement.

**Note:** Overlay Course  
Carolina Core: GSS,  
Carolina Core: VSR

Graduation with Leadership Distinction: Diversity and Social Advocacy  
Graduation with Leadership Distinction: Professional and Civic Engagement
2. MOORE SCHOOL OF BUSINESS

a. Department of Economics

**New Course**
ECON 514 The Economics of Terrorism. (3) Focuses on the following aspects of terrorism: (1) its causes/determinants (historical, social, cultural, economic, political, and religious determinants); (2) the organizational and funding structure of terrorist groups; (3) the tactics and weapons of terrorist groups; (4) mobilization and recruitment within terror networks; and (5) counterterrorism methods.

Pre-requisite: ECON 221 and ECON 222 or ECON 224

Restricted to: Business Majors and Economics Arts and Sciences Majors

b. Department of International Business

**New Course**
IBUS 403 International Entrepreneurship. (3) Develop a business plan for a global startup, integrate international strategy into the business model and financing strategy, analyze the costs of internationalization.

Prereq: IBUS 310

c. Department of Management

**New Course**
MGMT 590 Special Topics in Management. (3) Current topics, issues and practices in various areas of Management. Course may be repeated up to four (4) times as content varies by title.

**Change Course Hour Type**
From: MGMT 490 Special Topics in Management. (3)  
Course Hour Type: Fixed  
To: MGMT 490 Special Topics in Management. (3)  
Course Hour Type: Variable  
Credit Hours Minimum for a Single Offering: 1
3. COLLEGE OF EDUCATION
   a. Instruction & Teacher Education

Change to Major/Degree Program – BA in Elementary Education- 121 Credit Hours

<table>
<thead>
<tr>
<th>The Elementary Education Professional Program</th>
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<tbody>
<tr>
<td>Upon completion of 60 semester hours of course work including courses specified by the program area, the candidate may apply for admission to the Professional Program in Elementary Education. For admission to the professional program, the candidate must:</td>
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</tr>
<tr>
<td>1. meet the state basic skills testing requirement;</td>
<td>1. meet the state basic skills testing requirement;</td>
</tr>
<tr>
<td>2. pass the USC Education and Economic Development Act Assessment;</td>
<td>2. pass the USC Education and Economic Development Act Assessment;</td>
</tr>
<tr>
<td>3. achieve an minimum overall GPA of 2.75</td>
<td>3. achieve an minimum overall GPA of 2.75</td>
</tr>
<tr>
<td>4. achieve a GPA of 3.00 or higher and no grade lower than C in education courses and field experiences;</td>
<td>4. achieve a GPA of 3.00 or higher and no grade lower than C in education courses and field experiences;</td>
</tr>
<tr>
<td>5. earn minimum required grade in specific course work as required by the program area, including a grade of B or better in EDEL 305 &amp; EDEL 305P;</td>
<td>5. earn minimum required grade in specific course work as required by the program area, including a grade of B or better in EDEL 305.</td>
</tr>
<tr>
<td>6. submit an essay addressing the dispositions (stewardship, intellectual spirit, integrity, and justice) of the College of Education Conceptual Framework.</td>
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</tbody>
</table>

The Elementary Education Internship Admission Requirements

For admission to the senior internship semesters, the candidate must:

1. be admitted to the professional program;
2. achieve a minimum overall GPA of 2.75
3. achieve a GPA of 3.00 or higher in all education course work;
4. complete EDEL 441 with a grade of B or better;
5. achieve a grade of C or better in specific course work as required by the program area;
6. successfully complete criminal background check as required by the S.C. Department of Education by program deadline.

In addition to the above, for admission to EDEL 490A, EDEL 490B, and EDEL 490C, a GPA of 3.00 or higher is required in EDEL 570, EDEL 571, EDEL 440, EDEL 450, EDEL 460, and EDRD 431.

In addition to the above, for admission to EDEL 490, a GPA of 3.00 or higher is required in EDEL 471, EDEL 440, EDEL 450, EDEL 460, and EDRD 431.
<table>
<thead>
<tr>
<th>Earth Sciences</th>
<th>Earth Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-4 hours from the following:</td>
<td>3-4 hours from the following:</td>
</tr>
<tr>
<td>• ENVR 101 - Introduction to the Environment and</td>
<td>• ENVR 101 - Introduction to the Environment and</td>
</tr>
<tr>
<td>• ENVR 101L - Introduction to the Environment Lab</td>
<td>• ENVR 101L - Introduction to the Environment Lab</td>
</tr>
<tr>
<td>• ENVR 200 - Natural History of South Carolina</td>
<td>• ENVR 200 - Natural History of South Carolina</td>
</tr>
<tr>
<td>• GEOL 101 - Introduction to the Earth</td>
<td>• GEOL 101 - Introduction to the Earth</td>
</tr>
<tr>
<td>• GEOL 103 - Environment of the Earth</td>
<td>• GEOL 103 - Environment of the Earth</td>
</tr>
<tr>
<td>• GEOL 201 - Observing the Earth</td>
<td>• GEOL 201 - Observing the Earth</td>
</tr>
<tr>
<td>• MSCI 210 - Oceans and Society and</td>
<td>• MSCI 210 - Oceans and Society and</td>
</tr>
<tr>
<td>• MSCI 210L - Oceans and Society Laboratory</td>
<td>• MSCI 210L - Oceans and Society Laboratory</td>
</tr>
<tr>
<td>• MSCI 215 - Coastal Environments of the Southeastern U.S and</td>
<td>• MSCI 215 - Coastal Environments of the Southeastern U.S and</td>
</tr>
<tr>
<td>• MSCI 215L - Coastal Environments of the Southeastern U.S. (Laboratory)</td>
<td>• MSCI 215L - Coastal Environments of the Southeastern U.S. (Laboratory)</td>
</tr>
</tbody>
</table>
Degree Requirements (121-127 Hours)
See College of Education for professional program admissions
requirements, certification requirements, and other academic
opportunities.
(Total semester hours: 121-127)
1. Carolina Core Plus Elementary Education General
   Education (40-52 Hours)
2. Electives (6 Hours)
3. Specialized Content Preparation (15 Hours)
4. Education (63 Hours)

Grade of B or better required in EDEL 505, EDEL 505P, and EDEL 441, - grade of C or better required in all other
Education courses.

Education Core (45 Hours)
- EDTE 201 - Issues and Trends in Teaching and Learning
- EDFI 300 - Schools In Communities
- EDPY 401 - Learners and the Diversity of Learning
- EDRM 423 - Introduction to Classroom Assessment
- EDEX 523 - Introduction to Exceptional Children

Elementary Core and Clinical Experience (27 Hours)
- EDRD 430 - Elementary Literacy Instruction I
- EDRD 431 - Reading Assessment
- EDEL 440 - Elementary Mathematics Instruction
- EDEL 450 - Elementary Science Instruction
- EDEL 460 - Elementary Social Studies Instruction
- EDEL 505 - Nature and Management of Elementary
  Classrooms
- EDEL 506 - Integrated Curriculum in Elementary Schools
- EDEL 491 - Seminar on Teaching

Practicum and Internship Experiences (22 Hours)
- EDEL 505P - Inquiry Practicum: The Elementary School
- EDEL 441 - Introductory Elementary Internship
- EDEL 570 - Internship in Environments for Teaching and Learning
- EDEL 571 - Internship in Planning and Motivation
- EDEL 490A - Internship in Curriculum and Assessment
- EDEL 490B - Internship in Teaching
- EDEL 490C - Internship in Professional Roles

Degree Requirements (120-126 Hours)
See College of Education for professional program admissions
requirements, certification requirements, and other academic
opportunities.
(Total semester hours: 120-126)
1. Carolina Core Plus Elementary Education General
   Education (40-52 Hours)
2. Electives (3 Hours)
3. Specialized Content Preparation (15 Hours)
4. Education (62 Hours)

Grade of B or better required in EDEL 305 and EDEL 441, - grade of C or better required in all other Education courses.

Education Core (14 Hours)
- EDTE 201 - Issues and Trends in Teaching and Learning
- EDFI 300 - Schools In Communities
- EDPY 401 - Learners and the Diversity of Learning
- EDRM 423 - Introduction to Classroom Assessment
- EDEX 523 - Introduction to Exceptional Children

Elementary Core and Clinical Experience (27 Hours)
- EDRD 430 - Elementary Literacy Instruction I
- EDRD 431 - Reading Assessment
- EDEL 440 - Elementary Mathematics Instruction
- EDEL 450 - Elementary Science Instruction
- EDEL 460 - Elementary Social Studies Instruction
- EDEL 305 - Nature and Management of Elementary
  Classrooms
- EDEL 306 - Culturally Sustaining Pedagogy for the Elementary Classroom
- EDEL 491 - Seminar on Teaching

Practicum and Internship Experiences (21 Hours)
- EDEL 441 - Introductory Elementary Internship
- EDEL 471 - Internship in Environments, Planning, and Motivation for Teaching and Learning
- EDEL 490 - Internship in Elementary Education
**New Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEL 471</td>
<td>Internship in Environments, Planning, and Motivation for Teaching and Learning. (6) Internship for practice in classrooms appropriate to elementary education related to curriculum design and assessment. Field experiences emphasize planning lessons that actively engage students in learning.</td>
</tr>
<tr>
<td>EDEL 490</td>
<td>Internship in Elementary Education. (12) Internship for practice in elementary classrooms (grades 2-6) related to curriculum design, assessment, interactive teaching, and professional roles. Prereq: Admission to Internship II in Elementary Education Corequisite: EDEL 491 Restricted to: B.A. in Elementary Education majors</td>
</tr>
</tbody>
</table>

**Change Course Number and Prerequisite, delete Co-requisite**

| From: EDEL 505 | Nature and Management of Elementary Classrooms. (3) Prereq: EDPY 401, 401P, EDTE 201 Co-requisite: EDEL 505P |
| To: EDEL 305  | Nature and Management of Elementary Classrooms. (3) Prereq: EDPY 401, EDTE 201 |

**4. COLLEGE OF ENGINEERING AND COMPUTING**

**Change to Major/Degree Program – Engineering and Computing**

Existing Program Introduction: Change Optional Program Introduction:
Baccalaureate Degrees

The College of Engineering and Computing offers eight undergraduate programs. The majors and degrees are:

- Biomedical Engineering, B.S.
- Chemical Engineering, B.S.E.
- Civil Engineering, B.S.E.
- Computer Engineering, B.S.E.
- Computer Information Systems, B.S.
- Computer Science, B.S.C.S.
- Electrical Engineering, B.S.E.
- Mechanical Engineering, B.S.E.

The curricula for all baccalaureate degree programs include a set of courses that fulfill the general education requirements of the University and a set of courses that are specific to the major. Students have the opportunity to pursue specializations within these basic programs.

The programs in Biomedical Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, and Mechanical Engineering are accredited by the Engineering Accreditation Commission of ABET. The programs in Computer Science and in Computer Information Systems are accredited by the Computing Accreditation Commission of ABET. For additional information, visit www.abet.org.

Minors

The College of Engineering and Computing offers four minors for qualified students:

- Aerospace Engineering Minor
- Applied Computing Minor
- Computer Science Minor
- Nuclear Engineering Minor

A student in the College of Engineering and Computing may add to his or her program of study any minor listed in the Academic Programs A-Z section of this bulletin, provided the minor field of study is distinctly different from the major. Students completing the Computer Information Systems bachelor’s degree program automatically earn a minor in Business Information Systems. In most other cases, additional coursework is required to add a minor to a program of study.
<table>
<thead>
<tr>
<th>Entrance Requirements</th>
<th>Entrance Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission requirements and processes for freshman, transfer students, and former students seeking readmission are managed by the Office of Undergraduate Admissions. All engineering and computing students must earn a minimum of 30 semester hours, including at least half of the hours of work in the major, in residence.</td>
<td></td>
</tr>
<tr>
<td>Admission requirements and processes for freshman, transfer students, and former students seeking readmission are managed by the Office of Undergraduate Admissions. All engineering and computing students must earn a minimum of 30 semester hours, including at least half of the hours of work in the major, in residence. Qualified students outside of this college may enroll in engineering and computing courses through the college’s Student Services Office on a space-available basis.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Existing Program/Major Requirements:</th>
<th>Change Program/Major Requirements:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Progression Requirements</strong></td>
<td><strong>Progression Requirements</strong></td>
</tr>
<tr>
<td>Progression requirement polices for each major degree program in the College of Engineering and Computing are described in that program’s section of this bulletin. For the programs that include an Upper Division, a student must have a GPA of 2.00 or better on all Lower-Division courses required in the degree program. The GPA computation will include repeated grades, with the exception of those for which the university-approved grade forgiveness has been applied. A student not meeting these requirements must change major or transfer out of the College of Engineering and Computing. Lower and Upper Division course lists are included in the program sections of this bulletin. Additional requirements, including minimum grades in specific courses, may be specified by each major degree program. Students who are within 30 hours of completing all degree requirements should request a senior check from the Student Services Office.</td>
<td></td>
</tr>
<tr>
<td>Any program-specific progression requirement polices are described in that program’s section of this bulletin. Students who are within 30 hours of completing all degree requirements should request a senior check from the Student Services Office.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>a. Department of Biomedical Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Change to Major/Degree Program – BS Biomedical Engineering – 120 Credit Hours</strong></td>
</tr>
<tr>
<td>Existing Electives</td>
</tr>
</tbody>
</table>

80
### 4. Biomedical Engineering Electives (6 Hours)

Students must take 6 credit hours of Biomedical Engineering electives. Of these 6 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](http://example.com).

<table>
<thead>
<tr>
<th>Elective</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMEN 342 Infectious Disease and Immunology for Biomedical Engineers</td>
</tr>
<tr>
<td>BMEN 389 Special Topics in Biomedical Engineering for Undergraduates</td>
</tr>
<tr>
<td>BMEN 392 Fundamentals of Biochemical Engineering</td>
</tr>
<tr>
<td>BMEN 499 Independent Research</td>
</tr>
<tr>
<td>BMEN 546 Delivery of Bioactive Agents</td>
</tr>
<tr>
<td>BMEN 572 Tissue Engineering</td>
</tr>
<tr>
<td>BMEN 589 Topics in Biomedical Engineering</td>
</tr>
<tr>
<td>BMEN 589 Microfluidics and Lab-on-a-chip</td>
</tr>
<tr>
<td>BMEN 589 Bio Nano/Micro Electromechanical Systems (BioNEMS/MEMS)</td>
</tr>
<tr>
<td>EMCH 580 Mechanics of Solid Biomaterials</td>
</tr>
<tr>
<td>EXSC 535 Biomechanics of Human Movement</td>
</tr>
<tr>
<td>PSYC 507 Cognitive Neuroscience</td>
</tr>
</tbody>
</table>

### 5. Engineering Electives (3 Hours)

Students must take 3 credit hours of engineering electives. A listing of acceptable engineering electives is maintained in the Biomedical Engineering office and on its [website](http://example.com).

<table>
<thead>
<tr>
<th>Elective</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCE 204/MGSC 298 Program Design and Development</td>
</tr>
<tr>
<td>CSCE 206 Scientific Applications Programming</td>
</tr>
<tr>
<td>CSCE 215 UNIX/Linux Fundamentals</td>
</tr>
<tr>
<td>CSCE 240 Introduction to Software Engineering</td>
</tr>
<tr>
<td>CSCE 245 Object-Oriented Programming Techniques</td>
</tr>
<tr>
<td>CSCE 317 Computer Systems Engineering</td>
</tr>
<tr>
<td>CSCE 330 Programming Language Structures</td>
</tr>
<tr>
<td>CSCE 350 Data Structures and Algorithms</td>
</tr>
<tr>
<td>Course Code</td>
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<td>-------------</td>
</tr>
<tr>
<td>CSCE 355</td>
</tr>
<tr>
<td>CSCE 500</td>
</tr>
<tr>
<td>CSCE 551/MATH 562</td>
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<tr>
<td>CSCE 555</td>
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<tr>
<td>CSCE 561/MATH 527</td>
</tr>
<tr>
<td>CSCE 563</td>
</tr>
<tr>
<td>ECHE 300</td>
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<tr>
<td>ECHE 321</td>
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<td>ECHE 322</td>
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<td>ECHE 372</td>
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<td>ECHE 430</td>
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<td>ECHE 440</td>
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<td>ECHE 456</td>
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<td>ECHE 550</td>
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<td>ECHE 572</td>
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<td>ECHE 573</td>
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<td>ECIV 111</td>
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<td>ECIV 350</td>
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<td>ECIV 521</td>
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<td>ELCT 220</td>
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<td>ELCT 321</td>
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<td>EMCH 502</td>
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<tr>
<td>EMCH 507</td>
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<tr>
<td>EMCH 508</td>
</tr>
</tbody>
</table>
Engineering
EMCH 516 Control Theory in Mechanical Engineering
EMCH 528 Product Safety Engineering
EMCH 529 Sustainable Design and Development
EMCH 532 Intermediate Dynamics
EMCH 535 Robotics in Mechanical Engineering
EMCH 554 Intermediate Heat Transfer
EMCH 555 Instrumentation for Nuclear Engineering
EMCH 557 Introduction to Radiation Shielding and Sources
EMCH 560 Intermediate Fluid Mechanics
EMCH 571 Mechanical Behavior of Materials
EMCH 575 Adaptive Materials and Smart Structures
EMCH 580 Mechanics of Solid Biomaterials
EMCH 584 Advanced Mechanics of Materials
EMCH 585 Introduction to Composite Materials
EMCH 586 Experimental Stress Analysis

6. Technical Electives (6 Hours)
Students must take 6 credit hours of technical electives. A listing of acceptable technical electives is maintained in the Biomedical Engineering office and on its website. These include the following.

BIOL 250 Microbiology
BIOL 301 Ecology and Evolution
BIOL 303 Fundamental Genetics
BIOL 415 Comparative Vertebrate Anatomy
BIOL 460 General Physiology
BIOL 505 Developmental Biology
BIOL 530 Histology
BIOL 531 /ENHS 551 /EPIC 661 Parasitology
BIOL 534 Animal Behavior
BIOL 541 /CHEM 550 Biochemistry
BIOL 545 /CHEM 555 Biochemistry/ Molecular Biology I BIOL 546 /
CHEM 556 Biochemistry/ Molecular Biology II
BIOL 553 Genomics
BIOL 610 Hallmarks of Cancer
BIOL 612 Virology - Classical and Emerging Concepts
BIOL 620 Immunobiology
BIOL 635 Neurobiology
BIOL 653 Bioinformatics
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 655</td>
<td>Biotechnology</td>
</tr>
<tr>
<td>BIOL 656</td>
<td>Experimental Biotechnology</td>
</tr>
<tr>
<td>BIOL 662</td>
<td>Signal Transduction and Pathogenesis</td>
</tr>
<tr>
<td>BIOL 665</td>
<td>Human Molecular Genetics</td>
</tr>
<tr>
<td>BIOL 667</td>
<td>Molecular and Genetic Mechanisms of Disease</td>
</tr>
<tr>
<td>BIOL 690</td>
<td>Electron Microscopy</td>
</tr>
<tr>
<td>CHEM 321</td>
<td>Quantitative Analysis</td>
</tr>
<tr>
<td>CHEM 322</td>
<td>Analytical Chemistry</td>
</tr>
<tr>
<td>CHEM 334</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td>CHEM 340</td>
<td>Elementary Biophysical Chemistry</td>
</tr>
<tr>
<td>CHEM 541</td>
<td>Physical Chemistry I</td>
</tr>
<tr>
<td>CHEM 542</td>
<td>Physical Chemistry II</td>
</tr>
<tr>
<td>CHEM 545</td>
<td>Physical Biochemistry</td>
</tr>
<tr>
<td>CHEM 550</td>
<td>/BIOL 541 Biochemistry</td>
</tr>
<tr>
<td>CHEM 555</td>
<td>/BIOL 545 Biochemistry/Molecular Biology I</td>
</tr>
<tr>
<td>CHEM 556</td>
<td>/BIOL 546 Biochemistry/Molecular Biology II</td>
</tr>
<tr>
<td>EXSC 530</td>
<td>The Physiology of Muscular Activity</td>
</tr>
<tr>
<td>EXSC 535</td>
<td>Biomechanics of Human Movement</td>
</tr>
<tr>
<td>EXSC 562</td>
<td>Impairments of the Human Motor System</td>
</tr>
<tr>
<td>MATH 344</td>
<td>Applied Linear Algebra</td>
</tr>
<tr>
<td>MATH 374</td>
<td>Discrete Structures</td>
</tr>
<tr>
<td>MATH 520</td>
<td>Ordinary Differential Equations</td>
</tr>
<tr>
<td>MATH 524</td>
<td>Nonlinear Optimization</td>
</tr>
<tr>
<td>MATH 526</td>
<td>Numerical Linear Algebra</td>
</tr>
<tr>
<td>MATH 544</td>
<td>Linear Algebra</td>
</tr>
<tr>
<td>MATH 546</td>
<td>Algebraic Structures I</td>
</tr>
<tr>
<td>MATH 547</td>
<td>Algebraic Structures II</td>
</tr>
<tr>
<td>MATH 550</td>
<td>Vector Analysis</td>
</tr>
<tr>
<td>MATH 552</td>
<td>Applied Complex Variables</td>
</tr>
<tr>
<td>PHYS 514</td>
<td>Optics, Theory, and Applications</td>
</tr>
<tr>
<td>PHYS 515</td>
<td>Mathematical Physics I</td>
</tr>
<tr>
<td>PHYS 516</td>
<td>Mathematical Physics II</td>
</tr>
<tr>
<td>PHYS 517</td>
<td>Computational Physics</td>
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<td>PHYS 521</td>
<td>Biophysics</td>
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<td>STAT 516</td>
<td>Statistical Methods II</td>
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<td>STAT 518</td>
<td>Nonparametric Statistical Methods</td>
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<tr>
<td>STAT 519</td>
<td>Sampling</td>
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<tr>
<td>STAT 520</td>
<td>/MGSC 520 Forecasting and Time Series</td>
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<tr>
<td>STAT 523</td>
<td>Financial Mathematics II</td>
</tr>
<tr>
<td>STAT 525</td>
<td>/ Statistical Quality Control</td>
</tr>
</tbody>
</table>

84
Other Program Requirements

**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, BIOL 302, CHEM 111, CHEM 111L, CHEM 112, ENGL 101, MATH 141, MATH 142, MATH 241, MATH 242, and PHYS 211.

**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 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.

**Change Program Requirements:**

**Academic Standards**

**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 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.
Program Educational Objectives

Graduates of the Biomedical Engineering Program will:

1. Practice in a professional career or pursue an advanced or professional degree in which they are contributing to scientific, professional, and/or local communities through the improvement of human health.
2. Advance their careers by engaging in teamwork, effective communication, and continued learning to expand their professional development and technical understanding.

Learning Outcomes

Students graduating from the Biomedical Engineering Bachelor's of Science program will be able to:

- apply knowledge of mathematics; biological, chemical, and physical sciences; and engineering to solve problems at the interface of engineering and medicine.
- design and conduct laboratory experiments on living systems and their interactions with non living systems, as well as to analyze and interpret data.
- design a biomedical device or process to meet desired needs within realistic constraints, including economical and ethical constraints.
- function on multi-disciplinary teams.
- identify, formulate, and solve problems at the interface of engineering and medicine.
- function on multi-disciplinary teams.
- demonstrate professional and ethical responsibility.
- present technical material through professional written reports and oral presentations.
- recognize economic, social, and global issues and to evaluate the impact that biomedical engineering solutions may have upon society.
- recognize the need for lifelong learning and demonstration of the ability to learn independently.
- recognize contemporary issues as they relate to biomedical engineering problems.
- employ the necessary techniques, skills, and modern tools necessary for biomedical engineering practice.

Degree Requirements (130-142 Hours)

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

1. Carolina Core Requirements (34-46 Hours)
2. Other General Education Requirements (36 Hours)
3. Biomedical Engineering Major (38 Hours)
4. Biomedical Engineering Electives (9 Hours)
5. Engineering Electives (6 Hours)
6. Technical Electives (6 Hours)
## Existing College/School Gen Ed

### 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 Laboratory
- CHEM 331L - Essentials of Organic Chemistry Laboratory I
- CHEM 332 - Organic Chemistry I
- MATH 241 - Vector Calculus
- 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 or
- EMCH 360 - Fluid Mechanics

### 2. Other General Requirements (33 Hours)

- CHEM 112 - General Chemistry II
- CHEM 112L - General Chemistry II Laboratory
- CHEM 331L - Essentials of Organic Chemistry Laboratory I
- CHEM 332 - Organic Chemistry I
- CHEM 334 - Organic Chemistry II
- CHEM 550 or BIOL 541 - Biochemistry
- MATH 241 - Vector Calculus
- 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 or
- EMCH 360 - Fluid Mechanics

## Existing Program/Major Requirements:

## Change Program/Major Requirements:
### 3. Biomedical Engineering Major (38 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 271 - Introduction to Biomaterials
- BMEN 290 - Thermodynamics of Biomolecular Systems
- 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
- BMEN 428 - Senior Biomedical Engineering Design II

### 3. Biomedical Engineering Major (48 Hours)

- BMEN 101 - Introduction to Biomedical Engineering
- BMEN 211 - Computational Tools for Modeling Biomedical Systems
- BMEN 212 - Fundamentals of Biomedical Systems
- BMEN 240 - Cellular, Molecular, and Physical Biology
- BMEN 263 - Introduction to Biomechanics
- BMEN 271 - Introduction to Biomaterials
- BMEN 290 - Thermodynamics of Biomolecular Systems
- BMEN 303 - Professional Development and Ethics in Biomedical Engineering
- BMEN 321 - Biomonitoring and Electrophysiology
- BMEN 345 - Human Anatomy and Physiology for Biomedical Engineers
- BMEN 354 - Biotransport
- BMEN 363 - Biomedical Instrumentation
- BMEN 381 - Biomedical Engineering Laboratory I
- BMEN 382 - Biomedical Engineering Laboratory II
- BMEN 391 - Kinetics in Biomolecular Systems
- BMEN 427 - Senior Biomedical Engineering Design I
- BMEN 428 - Senior Biomedical Engineering Design II

**Existing Electives:**

**Change Electives:**
### 4. 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.

### 5. Engineering Electives (6 Hours)

Students must take 6 credit hours of engineering electives. A listing of acceptable engineering electives is maintained in the Biomedical Engineering office and on its website.

### 6. Technical Electives (6 Hours)

Students must take 6 credit hours of technical electives. A listing of acceptable technical electives is maintained in the Biomedical Engineering office and on its website.

### 7. Technical Laboratory Elective (1 Hour)

Students must take 1 credit hour of technical lab elective. A list of acceptable technical lab electives is maintained in the Biomedical Engineering office and on its website.

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**Other Program Requirements:**

**Change Program Requirements:**

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89
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.

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, BIOL 302, CHEM 111, CHEM 111L, CHEM 112, ENGL 101, MATH 141, MATH 142, MATH 241, MATH 242, and PHYS 211.

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 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.

New Courses

BMEN 212 Fundamentals of Biomedical Systems. (3) Fundamentals of static equilibrium, free body diagrams, force and momentum balances; viscoelastic mechanical behavior and models of viscoelasticity; introduction to linear circuit analysis, filters, and amplifiers.

Prereq: C or better in BMEN 211, C or better in CHEM 111 or CHEM 141, C or better in MATH 142

BMEN 240 Cellular and Molecular Biology with Engineering Applications. (4) Introduction to molecular, cellular and physical biology principles and concepts and application of engineering principles to further the understanding of biological systems. Protein and nucleic acid structure and function; DNA replication, mutations, and repair; transcription, translation, and post-translational processing; cellular organization; molecular transport and trafficking; and cellular models.

Prereq: C or better in BIOL 101, C or better in BMEN 211, C or better in CHEM 112 or CHEM 142, C or better in MATH 142

BMEN 263 Introduction to Biomechanics. (3) Mathematical and theoretical analysis of the mechanical properties and functions of materials, including those of biological origin and clinical relevance. Stress, strain, mechanical properties of materials, axial loading, torsion, bending, and stress/strain transformations. Application of the categories and methodology of solid mechanics to study biological tissues and events.
BMEN 363  Biomedical Instrumentation. (3) Sensing and measurement of biophysical and biochemical properties and signals in the human body for quantitative molecular, cell, and tissue analysis. Overview on the theory, design and application of common biomedical instrumentation used for diagnosis, treatment, and scientific study of physiological parameters in clinical medicine and biomedical research
Prereq: BMEN 321

BMEN 381  Biomedical Engineering Laboratory I. (2) Introduction to laboratory techniques and tools used for physiological measurements in biomedical engineering, with focus on biological, physical, and biomaterial methods. Data processing and analysis, as well as effective communication of results in written and oral form.
Prereq: BMEN 260 or BMEN 263, STAT 509
Pre- or Co-requisites: BMEN 271

BMEN 382  Biomedical Engineering Laboratory II. (2) Introduction to laboratory techniques and tools used for physiological measurements in biomedical engineering, with focus on measurement of biosignals and common analytical methods employed in biomedical research and clinical settings. Data processing and analysis, as well as effective communication of results in written and oral form.
Prereq: BMEN 321, BMEN 381
Pre- or Co-requisites: BMEN 363

Change title, description, prerequisite and credit hours
From: BMEN 101  Professional Development and Ethics in Biomedical Engineering I. (1) Introduction to the field of Biomedical Engineering. Analyzing and discussing current issues, including ethical issues, in biomedical engineering. Information access, library, and literature search skills. Effective oral communication involving technical material
To: BMEN 101  Introduction to Biomedical Engineering. (2) Introduction to topics comprising the field of Biomedical Engineering, including their ethical impacts. Familiarization with resources and basic skills necessary to succeed in this major and field
Co- or Pre- requisite: MATH 141

Change Title, Description and Prerequisite
From: BMEN 211  Mathematical Modeling in Biomedical Engineering I. (3) Introduction to modern computational modeling tools used in biomedical engineering. Programming, analysis, visualization, and image processing using engineering software, as applied to problems of interest in biomedical engineering.
Prereq: C or better in MATH 141

To: BMEN 211 Computational Tools for Modeling Biomedical Systems. (3) Introduction to modern computational modeling tools used in biomedical engineering. Analysis and visualization using engineering software as applied to problems of interest in biomedical engineering. Material balance modeling of biomedical systems

Prereq: C or better in MATH 141 Co or Pre-requisite: CHEM 111 or CHEM 141

**Change Prerequisites**

From: BMEN 271 Introduction to Biomaterials. (3)

Prereq: BMEN 290, CHEM 333, C or better in BIOL 302

To: BMEN 271 Introduction to Biomaterials. (3)

Prereq: CHEM 333, C or better in BMEN 240 or BIOL 302, C or better in BMEN 260 or BMEN 263, C or better in BMEN 290

From: BMEN 321 Biomonitoring and Electrophysiology. (3)

Prereq: BIOL 302, PHYS 212, C or better in MATH 242

To: BMEN 321 Biomonitoring and Electrophysiology. (3)

Prereq: PHYS 212, C or better in BMEN 211 or BMEN 212, C or better in BMEN 240 or BIOL 302, C or better in MATH 242

From: BMEN 345 Human Anatomy and Physiology for Biomedical Engineers. (4)

Prereq: BMEN 271, C or better in BIOL 302

To: BMEN 345 Human Anatomy and Physiology for Biomedical Engineers. (4)

Prereq: BMEN 271, C or better in BIOL 302 or BMEN 240

From: BMEN 427 Senior Biomedical Engineering Design I. (3)

Prereq: BMEN 271, BMEN 354, BMEN 361

To: BMEN 427 Senior Biomedical Engineering Design I. (3)

Prereq: BMEN 271, BMEN 345, BMEN 354, BMEN 361 or BMEN 363

**Change Description and Prerequisites**
From: BMEN 391 Kinetics in Biomolecular Systems. (3) Kinetic theory applied to biomedical systems; chemical kinetics and rate of complex reactions; enzymatic reactions; cell growth; kinetic models of biological systems; genetic engineering.

Prereq: BMEN 290, CHEM 333, C or better in MATH 242

To: BMEN 391 Kinetics in Biomolecular Systems. (3) Kinetic theory applied to biomedical systems, including enzymatic reactions, cell growth, and kinetic models of biological systems.

Prereq: CHEM 333 or CHEM 550 or BIOL 541; C or better in BMEN 290; C or better in MATH 242

Change Short Title and Prerequisites

From: BMEN 290 Thermodynamics of Biomelecular Systems. (3)

Short Course Title – Thermodynamics Biomolecular Sy

To: BMEN 290 Thermodynamics of Biomolecular Systems. (3)

Prereq: C or better in BMEN 240 or BMEN 211, C or better in MATH 241, C or better in PHYS 211

Short Course Title – Thermo of Biomolecular Systems

Change Title, Short Title, Description and Prerequisites

From: BMEN 303 Professional Development and Ethics in Biomedical Engineering III. (1) Analysis and discussion of industries, products, patents, industrial inventiveness, and biomedical research. Ethical issues associated with research, introduction of new products, animal subjects and human subjects. Informative and persuasive communication of advanced scientific information.

Prereq: BMEN 202

Short Title - Prof Dev & Ethics in BMEN III

To: BMEN 303 Professional Development and Ethics in Biomedical Engineering. (1) Analysis and discussion of industries, products, patents, industrial inventiveness, and biomedical research. Ethical issues associated with research, introduction of new products, animal subjects, and human subjects.

Prereq: BMEN 101

Short Title - Prof Dev & Ethics in BMEN
b. Department of Chemical Engineering

Change to Major/Degree Program – Chemical Engineering B.S.E. – 131 Credit Hours

Existing Program Curriculum                                    Change Optional Program Introduction
### Learning Outcomes

- Students will apply knowledge of mathematics and chemistry to typical problems encountered in chemical engineering practice.
- Students will apply knowledge of engineering to typical problems encountered in chemical engineering practice.
- Students will gain an understanding of chemical engineering science fundamentals.
- Students will be able to design and conduct laboratory experiments, as well as to analyze and interpret data using factorial design methods.
- Students will be able to use chemical process simulators and other techniques, skills, and modern engineering tools necessary for chemical engineering practice.
- Students will be able to design a chemical engineering system, unit, or chemical process to meet desired needs.
- Students will be able to present technical material through oral presentations with visual aids.
- Students will be able to present technical material including analysis and conclusions through technical reports.
- Students will be able to work in multi-functional teams.
- Students will be able to find information and to learn independently.
- Students will gain an understanding of professional and ethical responsibility.
- Students will gain an awareness of economic, political, and social issues.
- Students will comprehend the topics and ideas of familiar subjects in a foreign language.

### Program Educational Objectives

Within six years of graduation, our graduates are expected to achieve one or more of the following milestones:

- Advance professionally in the chemical process industries or in their chosen career field.
- Earn advanced degrees in chemical engineering (or a related technical discipline), medicine, law, or business.
- Attain leadership positions in today’s rapidly changing, increasingly technological, global society.

### Degree Requirements (131-143 hours)

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See [College of Engineering and Computing](#) for entrance requirements, progression requirements, and special academic opportunities.

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<tr>
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<td>• CHEM 112L - General Chemistry II Laboratory</td>
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<tr>
<td>• CHEM 333 - Organic Chemistry I</td>
<td>• CHEM 333 - Organic Chemistry I</td>
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<td>• CHEM 334 - Organic Chemistry II</td>
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<tr>
<td>• MATH 241 - Vector Calculus</td>
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</tr>
<tr>
<td>• MATH 242 - Elementary Differential Equations</td>
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<td>• PHYS 212 - Essentials of Physics II</td>
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<tr>
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<td>• CHEM 511 - Inorganic Chemistry</td>
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<td>• CHEM 533 - Comprehensive Organic Chemistry III</td>
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<tr>
<td>• CHEM 555 - Biochemistry/Molecular Biology I</td>
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<tr>
<td>• CHEM 556 - Biochemistry/Molecular Biology II</td>
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<tr>
<td>• CHEM 621 - Instrumental Analysis</td>
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<tr>
<td>• CHEM 622 - Forensic Analytical Chemistry</td>
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<tr>
<td>• CHEM 623 - Introductory Environmental Chemistry</td>
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<tr>
<td>• CHEM 624 - Aquatic Chemistry</td>
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<tr>
<td>• CHEM 633 - Introduction to Polymer Synthesis</td>
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<tr>
<td>• CHEM 644 - Materials Chemistry</td>
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<tr>
<td>or</td>
<td>CHEM 331L - Essentials of Organic Chemistry Laboratory</td>
</tr>
<tr>
<td>• CHEM 333L - Comprehensive Organic Chemistry</td>
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</tbody>
</table>
### Laboratory I
- CHEM 332L - Essentials of Organic Chemistry Laboratory I
- CHEM 334L - Comprehensive Organic Chemistry Laboratory II
- CHEM 541L - Physical Chemistry Laboratory
- CHEM 542L - Physical Chemistry Laboratory
- CHEM 550L - Biochemistry Laboratory
- CHEM 591 - Advanced Experimental Chemistry I
- CHEM 592 - Advanced Experimental Chemistry II
- CHEM 621L - Instrumental Analysis Lab

### Lower Division Engineering (14 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

### Existing Program/Major Requirements

### Change Program/Major Requirements:

### 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

### Change Program/Major Requirements:
- ECHE 321 - Heat-Flow Analysis
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### Existing Electives:

5. Electives (24 Hours)

**Professional Development Elective (1 Hour)**

- A list of acceptable Professional Development Elective courses is maintained in the department office and on its [website](#). The list includes: ECHE 202; BMEN 202

**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 - Statics
- ECIV 200 - Statics
- EMCH 200 - Statics
- ENCP 201 - Introduction to Applied Numerical Methods
- EMCH 201 - Introduction to Applied Numerical Methods
- ENCP 210 - Dynamics
- ECIV 210 - Dynamics
- EMCH 310 - Dynamics
- ENCP 260 - Introduction to the Mechanics of Solids
- ECIV 220 - Mechanics of Solids
- EMCH 260 - Introduction to the Mechanics of Solids
- ENCP 330 - Introduction to Vibrations
- EMCH 330 - Mechanical Vibrations
- ENCP 460 - Special Topics in Engineering and Computing
- ENCP 481 - Project Management
- ENCP 499 - Interdisciplinary Technical Elective
- ENCP 540 - Environmentally Conscious Manufacturing
- 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 300 and above, except BMEN 301 and BMEN 303
- CSCE 211 - Digital Logic Design
- CSCE 212 - Introduction to Computer Architecture
- CSCE 240 - Introduction to Software Engineering
- CSCE 313 - Embedded Systems
- CSCE 317 - Computer Systems Engineering
- CSCE 394

### Change Electives:

5. Electives (22-25 Hours)

**Professional Development Elective (1 Hour)**

A list of acceptable Professional Development Elective courses is maintained in the department office and on its [website](#). The list includes:

- ECHE 202 - Exploring the Chemical Engineering Workplace
- BMEN 202 - Professional Development and Ethics in Biomedical Engineering II

**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 - Statics
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- ENCP 201 - Introduction to Applied Numerical Methods
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<td>ECHE 456</td>
<td>Computational Methods for Engineering Applications</td>
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<tr>
<td>ECHE 497</td>
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<td>ECHE 571</td>
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<td>ECHE 572</td>
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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
- Chemistry Lab Electives
- ENCP 102 - Introduction to Engineering II or
- EMCH 111 - Introduction to Engineering Graphics and Visualization
- MATH 374 - Discrete Structures
- MATH 500 and above
- STAT 500 and above, except STAT 541 and STAT 591
- BIOL 101 - Biological Principles I
- BIOL 101L - Biological Principles I Laboratory
- BIOL 102 - Biological Principles II
- BIOL 102L - Biological Principles II Laboratory
- BIOL 120 - Human Biology
- BIOL 120L - Laboratory in Human Biology
- BIOL 200 - Plant Science and above
- GEOI any course
- MSCI any course
- PHYS 300 and above
- CSCE 145 - Algorithmic Design I

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- BIOL 102 - Biological Principles II
- BIOL 102L - Biological Principles II Laboratory
- BIOL 120 - Human Biology
- BIOL 120L - Laboratory in Human Biology
- BIOL 200 - Plant Science and above
- GEOI any course
• CSCE 146 - Algorithmic Design II
• CSCE 206 - Scientific Applications Programming
• CSCE 210 - Computer Hardware Foundations
• CSCE 215 - UNIX/Linux Fundamentals
• CSCE 350 - Data Structures and Algorithms

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 courses.

• MSCI any course
• PHYS 300 and above
• CSCE 145 - Algorithmic Design I
• CSCE 146 - Algorithmic Design II
• CSCE 206 - Scientific Applications Programming
• CSCE 210 - Computer Hardware Foundations
• CSCE 215 - UNIX/Linux Fundamentals
• CSCE 350 - Data Structures and Algorithms

Liberal Arts Electives (3-6 Hours)

At least one course used to satisfy Carolina Core AIU, CMS, GHS, GSS, VSR, or Liberal Arts Elective, must be at the 300-level or above and in the same field of study as one of the other five courses. A list of acceptable Liberal Arts Elective courses is maintained in the department office and on its website. This list includes:

• All approved Carolina Core Courses for AIU, CMS, GFL, GHS, GSS, and VSR
• AERO 401 (POC cadets only) - National Security Affairs
• AERO 402 (POC Cadets only) - Preparation for Active Duty
• AFAM 201 - Introduction to African American Studies: Social and Historical Foundations
• AFAM 202 - Introduction to African-American Studies: Arts and Cultural Foundations
• AFAM 335 - The American Civil Rights Movement
• ANTH 101 - Primates, People, and Prehistory
• ANTH 102 - Understanding Other Cultures
• ANTH 205 - Panorama of Prehistory
• ANTH 300 - and above except 399, 501
• ARTE 101 - Introduction to Art
• ARTH 105 - History of Western Art I
• ARTH 106 - History of Western Art II
• ARTH 300 and above except 399, 498, 499, 599
• ARMY 406 (Army cadets only) - American Military Experience
• ARMY 407 (Army cadets only) - Evolution of Warfare
• CPLT Any course; courses 270 and above count as 300 - level
• DANC 101 - Dance Appreciation
• ECON 221 - Principles of Microeconomics
• ECON 222 - Principles of macroeconomics
• ECON 224 - Introduction to Economics
• ECON 300 and above except 399, 421, 499, 524, 595
• ENGL Any course above 102 (**) except 460 through 467
• Foreign languages 121 Elementary
• Foreign languages 300 and above except intensive reading courses or courses about teaching
• GEOG 103 - Introduction to Geography
- GEOG 121 - Globalization and World Regions
- GEOG 300 and above except 399, 595
- HIST Any course
- LASP 301 - Interdisciplinary Study of Latin America
- LASP 311 - Latin American Cultures
- LASP 315 - South American Indian Cultures
- LASP 322 - Mesoamerican Prehistory
- LASP 331 - Geography of Latin America
- LASP 351 - Politics and Governments of Latin America
- LASP 398 - Special Topics in Latin American Studies
- LASP 425 - Prehistoric Archaeology of South America
- LASP 451 - International Relations of Latin America
- LING 300 - Introduction to Language Sciences
- LING 340 - Language, Culture, and Society
- LING 405 - Topics in Linguistics
- LING 505 - Interdisciplinary Topics in Linguistics
- LING 540 - Topics in Language and Culture
- LING 541 - Language and Gender
- LING 542 - Research in Language Conflict and Language Rights
- LING 543 - Discourse, Gender, and Politics of Emotion
- LING 545 - Anthropological Approaches to Narrative and Performance
- LING 567 - Psychology of Language
- LING 600 - Survey of Linguistics
- MUSC 110 - Introduction to Music
- MUSC 140 - Jazz and American Popular Music
- MUSC 145 - Introduction to Music Literature
- MUSC any music history course at or above 300 level
- NAVY 303 (Midshipmen only) - Evolution of the Art of War
- PHIL 102 - Introduction to Philosophy
- PHIL 300 and above
- PSYC 101 - Introduction to Psychology
- PSYC 103 - Psychology of Adjustment
- PSYC 300 and above except 570 to 599
- POLI Any course except 379, 399
- RELG Any course
- SOCY 101 - Introduction to Sociology
- SOCY 300 and above except 399
- THEA 200 - Understanding and Appreciation of Theater
- THEA 561 - History of the Theatre I
- THEA 562 - History of the Theatre II
- WGST 111 - Women in Culture
- WGST 112 - Women in Society
- WGST 113 - Women’s Health
- WGST 300 - Sociology of Sex Roles
- WGST 301 - Psychology of Marriage
- WGST 304 - Race, Class, Gender, and Sexuality
<table>
<thead>
<tr>
<th>Other Program Requirements:</th>
<th>Change Program Requirements:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Optional Concentrations</strong></td>
<td><strong>Optional Concentrations</strong></td>
</tr>
<tr>
<td>Students may pursue any of the following concentrations by choosing specified engineering, technical, and chemistry elective courses to fulfill degree requirements:</td>
<td>Students may pursue any of the following concentrations by choosing specified engineering, technical, and chemistry elective courses to fulfill degree requirements:</td>
</tr>
<tr>
<td>- Concentration in Biomolecular Engineering</td>
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<tr>
<td>- Concentration in Energy</td>
<td>- Concentration in Energy</td>
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<tr>
<td>- Concentration in Interdisciplinary Engineering</td>
<td>- Concentration in Interdisciplinary Engineering</td>
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<tr>
<td>- Concentration in Materials</td>
<td>- Concentration in Materials</td>
</tr>
<tr>
<td>- Concentration in Environmental Engineering</td>
<td>- Concentration in Environmental Engineering</td>
</tr>
<tr>
<td>- Concentration in Numerical Methods and Computing</td>
<td>- Concentration in Numerical Methods and Computing</td>
</tr>
<tr>
<td>To fulfill the requirements for any concentration, a student must complete five courses (15 credit hours) in one area and which must be approved by the student’s advisor and by the department. Consult the department website or advising handbook for a list of approved concentration courses and for the Chemical Engineering Concentration approval form.</td>
<td>To fulfill the requirements for any concentration, a student must complete five courses (15 credit hours) in one area. Consult the department website or advising handbook for the most up to date list of approved concentration courses. Although these courses are designated as electives in the B.S.E. curriculum in chemical engineering, certain courses in the lists are designated as “required” with respect to fulfilling concentration requirements. Also note that the lists may not include all of the prerequisites for some of the listed courses.</td>
</tr>
<tr>
<td><strong>B.S.E. with Distinction</strong></td>
<td><strong>Concentration in Biomolecular Engineering</strong></td>
</tr>
<tr>
<td>The B.S.E. with Distinction is available to students majoring in chemical engineering who wish to participate in significant research and/or design activities in chemical engineering with a faculty mentor.</td>
<td>- Required: BIOL 302* and CHEM 550.</td>
</tr>
<tr>
<td>A minimum GPA of 3.50 in major courses, 3.50 in all engineering courses, and 3.50 overall at the time the student applies to enter the departmental undergraduate research track.</td>
<td>- Required: one course from the following list: BMEN 271, BMEN 391.</td>
</tr>
<tr>
<td>The student should apply to enter the departmental undergraduate research track and choose the members of the thesis committee as early as possible but in all cases at least one year before submitting and defending the thesis. The thesis committee will consist of a thesis advisor, who must be a tenure-track faculty member in chemical engineering, and two other tenure-track or research faculty members in chemical engineering or in any other department. By the end of the semester in which the student is admitted into the research track, a short description of the research must be agreed upon by the thesis committee and the student, and filed in the college office. Projects involving research and/or design are</td>
<td>- Required: two courses from the following list: BIOL 303, BIOL 460, BIOL 505, BIOL 530, BIOL 665, BMEN 271, BMEN 342, BMEN 389, BMEN 391, BMEN 392, BMEN 499 (3 credit hours), BMEN 672, BMEN 589. Multiple distinct 389/589 courses may be counted.</td>
</tr>
<tr>
<td>*Advising note: BIOL 101 and 102 are prerequisites for BIOL 302.</td>
<td><strong>Concentration in Energy</strong></td>
</tr>
<tr>
<td><strong>Concentration in Energy</strong></td>
<td>- Required: ECHE 573.</td>
</tr>
<tr>
<td>- Required: ECHE 573.</td>
<td>- Four courses from the following list: ECHE 372, ECHE 389 (designated energy electives), ECHE 499 (approved</td>
</tr>
</tbody>
</table>
acceptable. The design projects or research projects for ECHE 465, 466, 567, or other courses are not acceptable as the thesis. The student must also choose three credit hours of engineering or technical elective courses related to the thesis topic. The course(s) must be approved by the thesis committee and completed by the student at least one semester before the thesis is submitted and defended.

Before submitting and defending the thesis, the student must have completed three credit hours of ECHE 499 - Special Problems under the thesis advisor, preferably one credit hour per semester. During the semester in which the thesis is submitted and defended the student must also complete three credit hours of ECHE 497 - Thesis Preparation, one credit hour under each of the three members of the thesis committee. At least two months before submitting and defending the thesis, the student must present a progress report to the thesis committee orally and in writing.

By the end of his/her last semester, the student must have presented the research at a national meeting of a professional society (such as AIChE, ACS, ECS, etc.), at Discovery Day at USC, or at a comparable venue. The student must also submit a written thesis describing the research and defend it orally before the thesis committee. The defense must be announced at least one week in advance and be open to the general public.

Students who successfully fulfill all of these requirements with a GPA of at least 3.50 in the three hours of ECHE 497, 3.50 in all major courses, 3.50 in all engineering courses, and 3.50 overall, will be awarded their degree with "Distinction in Chemical Engineering" upon graduation.

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.

energy-related research project, up to 3 credit hours), ECHE 571, ECHE 574, ELCT 363, ELCT 510, ELCT 563, EMCH 551, EMCH 552, EMCH 553, EMCH 576, ECHE 589 (designated energy electives), EMCH 592, EMCH 594. Multiple distinct 389/589 courses may be counted.

Concentration in Interdisciplinary Engineering
• Required: five courses from the following list: EMCH 200 (or ECIV 200 or ENCP 200), EMCH 220, 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
• Required: ECHE 372.
• Required: One course from the following list: ECHE 389 (designated materials courses), ECHE 571, ECHE 572, ECHE 589 (designated materials courses).
• Three courses from the following list: CHEM 511, CHEM 633, CHEM 644, ELCT 363, (ELCT 563 or ELCT 581), EMCH 573, ECHE 389 (designated materials electives), ECHE 499 (approved materials-related research project, up to 3 credit hours), ECHE 571, ECHE 572, ECHE 589 (designated materials electives). Multiple distinct 389/589 courses may be counted.

Concentration in Environmental Engineering
• Required: ECIV 350, ECIV 362, ECIV 558
• One course from the following list: CHEM 623, CHEM 624
• One course from the following list: ENVR 231, ENVR 321, ENVR 322, ENVR 331

Concentration in Numerical Methods and Computing
• Required: BMEN 211 or EMCH 201 or ENCP 201
• Four courses from the following list: CSCE 145, CSCE 146, MATH 374 or 574, MATH (500 level or higher), GEOL 575, EMCH 501, ECHE 589 (depending on topic coverage, multiple versions possible).

B.S.E. with Distinction

The B.S.E. with Distinction is available to students majoring in chemical engineering who wish to participate in significant research and/or design activities in chemical engineering with a faculty mentor. A minimum GPA of 3.50 in major courses, 3.50 in all engineering courses, and 3.50 overall at the time the student applies to enter the departmental undergraduate research track. The student should apply to enter the departmental undergraduate research track and choose the members of the thesis committee as early as possible but in all cases at least one year before submitting and defending the thesis. The thesis committee will consist of a thesis advisor, who must be a tenure-track faculty member in chemical engineering, and two other tenure-track or research faculty members in chemical engineering or in any other department.

By the end of the semester in which the student is admitted into the research track, a short description of the research must be agreed
upon by the thesis committee and the student, and filed in the
college office. Projects involving research and/or design are
acceptable. The design projects or research projects for ECHE
465, 466, 567, or other courses are not acceptable as the thesis.
The student must also choose three credit hours of engineering or
technical elective courses related to the thesis topic. The course(s)
must be approved by the thesis committee and completed by the
student at least one semester before the thesis is submitted and
defended.
Before submitting and defending the thesis, the student must have
completed three credit hours of ECHE 499 - Special
Problems under the thesis advisor, preferably one credit hour per
semester. During the semester in which the thesis is submitted and
defended the student must also complete three credit hours
of ECHE 497 - Thesis Preparation, one credit hour under each of
the three members of the thesis committee. At least two months
before submitting and defending the thesis, the student must
present a progress report to the thesis committee orally and in
writing.
By the end of his/her last semester, the student must have
presented the research at a national meeting of a professional
society (such as AIChE, ACS, ECS, etc.), at Discovery Day at USC,
or at a comparable venue. The student must also submit a written
thesis describing the research and defend it orally before the thesis
committee. The defense must be announced at least one week in
advance and be open to the general public.
Students who successfully fulfill all of these requirements with a
GPA of at least 3.50 in the three hours of ECHE 497, 3.50 in all
major courses, 3.50 in all engineering courses, and 3.50 overall, will
be awarded their degree with “Distinction in Chemical Engineering”
upon graduation.

Academic Standards

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.

Change Prerequisites
From: ECHE 322   Mass Transfer. (3)
     Prereq: C or better in ECHE 300
To:    ECHE 322   Mass Transfer. (3)
     Prereq: ECHE 320 or ENCP 360

From: ECHE 440   Separation Process Design. (3)
Prereq: C or better in ECHE 300

To:    ECHE 440 Separation Process Design. (3)
Prereq: C or better in ECHE 300 Corequisite: prereq or coreq: ECHE 311

From:  ECHE 567 Process Safety, Health and Loss Prevention. (3)
Prereq: senior standing

To:    ECHE 567 Process Safety, Health and Loss Prevention. (3)
Corequisite: prereq or coreq: ECHE 466

From:  ECHE 571 Corrosion Engineering. (3)
Prereq: upper division standing Note: Pass-Fail grading

To:    ECHE 571 Correction Engineering. (3)
Prereq: ECHE 311

c.  Department of Civil and Environment Engineering

Change to Major/Civil Engineering B.S.E – 129 Credit Hours

Existing Electives:                         Change Electives:
### 5. Electives (35 hours)

#### ECIV Laboratory Courses (2 hours)
Select two of the following:
- ECIV 303L - Civil Engineering Materials Laboratory
- ECIV 330L - Geotechnical Laboratory
- ECIV 350L - Introduction to Environmental Engineering Laboratory
- ECIV 362L - Introduction to Water Resources Engineering Laboratory

#### ECIV Distribution Courses (12 hours)
ECIV distribution includes one course from four of the following five areas:
- environmental
- geotechnical
- structures
- transportation
- water resources

The department maintains lists of courses for each area in the department office and on its website.

#### ECIV Electives (12 hours)
- Four ECIV electives chosen from additional ECIV courses numbered 300 and above.

#### Engineering, Science, or Mathematics (ESM) Electives (9 hours)
Choose from a list of acceptable engineering, science and mathematics elective courses that is maintained in the department office and on its website.

#### ECIV Elective Courses (12 hours)
Four ECIV electives chosen from additional ECIV courses numbered 300 and above

#### Science Electives (3 hours)
- BIOL 101 Biological Principles I
- BIOL 102 Biological Principles II
- BIOL 110 General Biology
- BIOL 250 Microbiology
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 270</td>
<td>Introduction to Environmental Biology</td>
</tr>
<tr>
<td>BIOL 300 or above</td>
<td></td>
</tr>
<tr>
<td>ENVR 321</td>
<td>Environmental Pollution and Health</td>
</tr>
<tr>
<td>GEOG 563</td>
<td>Advanced Geographic Information Systems</td>
</tr>
<tr>
<td>GEOL 201</td>
<td>Observing the Earth</td>
</tr>
<tr>
<td>GEOL 300 or above</td>
<td></td>
</tr>
<tr>
<td>MSCI 300 and above</td>
<td></td>
</tr>
</tbody>
</table>

**ESM Electives (6 hours)**

- Additional ECIV courses from the Distribution and Elective categories
- ENCP 290 or above (not 310 or 360)
- ECHE 310 and above
- ELCT above 201
- EMCH 290 or above (not 310 or 360)
- CSCE 211 and above
- PHYS above 212
- GEOG 563 Advanced Geographic Information Systems
- GEOL 300 or above
- BIOL 101 Biological Principles I
- BIOL 102 Biological Principles II
- BIOL 110 General Biology
- BIOL 250 Microbiology
- BIOL 300 and above
- MSCI 300 and above
- CHEM above 112
- MATH 521 Boundary Value Problems and Partial Differential Equations
- MATH 544 Linear Algebra
- MATH 550 Vector Analysis
- STAT 511 Probability
- NAVY 201 Naval Ship Systems I
- NAVY 202 Naval Ship Systems II
- NAVY 301 Navigation/Naval Operations I
- ENVR 501 Special Topics in the Environment

**Other Program Requirements:**

**Change Program Requirements:**

107
Academic Standards

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

Minimum Course Grades
The Civil 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, ECIV 200, ECIV 201, and ECIV 220.

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 Civil Engineering B.S.E. program: all Lower Division Engineering courses, all Civil Engineering Major courses, and all courses used to satisfy a ECIV Laboratory Elective, ECIV Distribution Elective, and ECIV Elective.

Professional Development Requirement
This requirement is satisfied by completing one or more program-accepted Carolina Core courses for CMS and VSR, by ENGL 462, ENGL 463, PHIL 323, PHIL 324, or SPCH 230.

New Course
ECIV 340L Transportation Engineering Laboratory. (1) This course covers the principles of distances, elevations and angles that pertain to roadways, basic theories in engineering measurements and surveying calculations, and an introduction to mapping, for transportation engineering applications.

Pre- or co-requisite: ECIV 340

d. Department of Computer Science and Engineering

Change to Minor/Applied Computing Minor – 18 Credit Hours

Existing Cognate and Minor Requirements

<table>
<thead>
<tr>
<th>Applied Computing Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>All disciplines can benefit from computing technology. The various tracks of this multidisciplinary minor are designed to provide the knowledge of modern computing technology you need to be more effective in your major area of interest, such as the management of electronic medical records for nurses and the ability to create attractive websites and blogs for journalists.</td>
</tr>
</tbody>
</table>

Change Cognate and Minor Requirements:

<table>
<thead>
<tr>
<th>Applied Computing Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>All disciplines can benefit from computing technology. This multidisciplinary minor is designed to provide the knowledge of modern computing technology you need to be more effective in your major area of interest.</td>
</tr>
</tbody>
</table>
and creative writers.

**Minor Requirements**

All tracks of the minor begin with the following two fundamental courses:

- CSCE 101 - Introduction to Computer Concepts
- CSCE 102 - General Applications Programming

**Note:**
(Note that if students use either or both of these courses to satisfy General Education Requirements for their major, then they must choose alternative courses from those listed in any of the following tracks for this Minor.)

The student will then choose one of the following tracks. Track courses may have prerequisites which must also be met.

**Media Arts Track**

Requires the following 2 courses:

- CSCE 201 - Introduction to Computer Security
- MART 210 - Digital Media Arts Fundamentals

And 2 of the following courses:

- MART 380 - New Media Art
- MART 581D - New Media Advanced: Video Game Design
- MART 371 - The Moving Image
- MART 571C - Moving Image Advanced: Animation

**Information Science and Architecture Track**

Requires the following 2 courses:

- CSCE 204 - Program Design and Development
- SLIS 301 - Information Storage and Retrieval

### I. Foundation Courses (6 hours)

Two required courses:

- CSCE 101 - Introduction to Computer Concepts
- CSCE 102 - General Applications Programming

**Note:** If either or both CSCE 101 and CSCE 102 are used to satisfy the Analytical Reasoning and Problem Solving requirement of the Carolina Core then either GEOG 105 – The Digital Earth, ITEC 101 – Thriving in the Tech Age, and/or any Intermediate or Advanced course may be substituted in the minor.

### II. Intermediate Courses (6 hours)

Two of the following courses:

- CSCE 201 - Introduction to Computer Security
- CSCE 204 - Program Design and Development
- GEOG 341 - Cartography
- GEOG 363 - Geographic Information Systems
- ITEC 233 - Introduction to Computer Hardware and Software Support
- ITEC 245 - Introduction to Networking
- ITEC 264 - Computer Applications in Business I
- ITEC 265 - Computer Applications in Business II
- MART 210 - Digital Media Arts Fundamentals
- SLIS 201 - Introduction to Information Science
- SLIS 202 - Introduction to Information Literacy and Technology

**Note:** No course used to satisfy a Carolina Core, Major, or other Minor requirement may be used to satisfy the Applied Computing Minor requirements. In the event of conflict for an Intermediate Course, any Intermediate or Advanced course may be substituted to satisfy the minor.

### III. Advanced Courses (6 hours)

Two of the following courses:

- GEOG 551 - Principles of Remote Sensing
- GEOG 554 - Spatial Programming
- GEOG 563 - Advanced Geographic Information Systems
- GEOG 564 - GIS-Based Modeling
- GEOG 565 - Geographic Information System (GIS)
And 2 of the following courses:

- SLIS 402 - Introduction to Management Within Information Environments
- SLIS 420 - Communication and Information Transfer
- SLIS 430 - User-Centered Information Architecture
- SLIS 435 - Digital Information Infrastructure

Information Security and Privacy Track

Requires the following 2 courses:

- CSCE 201 - Introduction to Computer Security
- CSCE 522 - Information Security Principles

And 2 of the following courses:

- CSCE 548 - Building Secure Software
- CSCE 557 - Introduction to Cryptography
- CSCE 517 - Computer Crime and Forensics

Geographic Information Systems Track

Requires the following 2 courses:

- GEOG 341 - Cartography
- GEOG 363 - Geographic Information Systems

And 1 of the following courses:

- CSCE 201 - Introduction to Computer Security
- CSCE 204 - Program Design and Development

And 1 of the following courses:

- GEOG 554 - Spatial Programming
- GEOG 563 - Advanced Geographic Information Systems
- GEOG 565 - Geographic Information System (GIS) Databases and Their Use

E-Commerce for Tourism Track

- ITEC 362 - Web-Based Support Systems
- ITEC 370 - Database Systems in Information Technology
- ITEC 445 - Advanced Networking
- ITEC 447 - Management of Information Technology
- ITEC 493 - IT Security for Managers
- ITEC 545 - Telecommunications
- ITEC 560 - Analysis and Applications of Project Management Software
- ITEC 562 - Advanced Web Support Systems
- ITEC 564 - Project Management for Information Systems
- ITEC 570 - Database Management and Administration
- ITEC 584 - Hospitality and Tourism Technology
- ITEC 586 - eCommerce Technology in Hospitality
- MART 371 - The Moving Image
- MART 380 - New Media Art
- MART 571C - Moving Image Advanced: Animation
- MART 581D - New Media Advanced: Video Game Design
- SLIS 301 - Information Storage and Retrieval
- SLIS 402 - Introduction to Management Within Information Environments
- SLIS 420 - Communication and Information Transfer
- SLIS 430 - User-Centered Information Architecture
- SLIS 435 - Digital Information Infrastructure

Note: No course used to satisfy a Carolina Core, Major, or other Minor requirement may be used to satisfy the Applied Computing Minor requirements. In the event of conflict for an Advanced Course, any other Advanced course may be substituted to satisfy the minor.

IV. Advisement Tracks

The following tracks are recommended (but not required) for students interested in particular areas within computing. Suggested courses for such tracks are listed below.

Animation

- CSCE 101 - Introduction to Computer Concepts
- CSCE 102 - General Applications Programming
- CSCE 201 - Introduction to Computer Security
- MART 210 - Digital Media Arts Fundamentals
- MART 371 - The Moving Image
- MART 571C - Moving Image Advanced: Animation
Requires the following 4 courses:

- CSCE 201 - Introduction to Computer Security
- ITEC 447 - Management of Information Technology
- ITEC 584 - Hospitality and Tourism Technology
- ITEC 586 - eCommerce Technology in Hospitality

**Web Development Track**

Requires the following 4 courses:

- CSCE 204 - Program Design and Development
- MART 210 - Digital Media Arts Fundamentals
- ITEC 362 - Web-Based Support Systems
- ITEC 562 - Advanced Web Support Systems

**Networking Track**

Requires the following 4 courses:

- CSCE 201 - Introduction to Computer Security
- ITEC 245 - Introduction to Networking
- ITEC 445 - Advanced Networking
- ITEC 545 - Telecommunications

**Project Management Track**

Requires the following 4 courses:

- CSCE 204 - Program Design and Development
- ITEC 447 - Management of Information Technology
- ITEC 560 - Analysis and Applications of Project Management Software
- ITEC 564 - Project Management for Information Systems

**Database Technology Track**

Requires the following 4 courses:

- ITEC 264 - Computer Applications in Business I
- ITEC 265 - Computer Applications in Business II
- ITEC 370 - Database Systems in Information Databases

**Databases**

- CSCE 101 - Introduction to Computer Concepts
- CSCE 102 - General Applications Programming
- ITEC 264 - Computer Applications in Business I
- ITEC 265 - Computer Applications in Business II
- ITEC 370 - Database Systems in Information Technology
- ITEC 570 - Database Management and Administration

**E-Commerce for Tourism**

- CSCE 101 - Introduction to Computer Concepts
- CSCE 102 - General Applications Programming
- CSCE 201 - Introduction to Computer Security
- ITEC 264 - Computer Applications in Business I
- ITEC 447 - Management of Information Technology
- ITEC 584 - Hospitality and Tourism Technology

**Game Design**

- CSCE 101 - Introduction to Computer Concepts
- CSCE 102 - General Applications Programming
- CSCE 201 - Introduction to Computer Security
- MART 210 - Digital Media Arts Fundamentals
- MART 380 - New Media Art
- MART 581D - New Media Advanced: Video Game Design

**Geographic Information Systems**

- CSCE 101 - Introduction to Computer Concepts
- GEOG 105 – The Digital Earth
- CSCE 204 - Program Design and Development
- GEOG 363 - Geographic Information Systems
- GEOG 554 - Spatial Programming
- GEOG 563 - Advanced Geographic Information Systems

**Geographic Data: Visualization and Application**

- CSCE 101 - Introduction to Computer Concepts
- GEOG 105 – The Digital Earth
- GEOG 341 - Cartography
<table>
<thead>
<tr>
<th>Technology</th>
<th>Information Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>• ITEC 570 - Database Management and Administration</td>
<td>• GEOG 363 - Geographic Information Systems</td>
</tr>
<tr>
<td></td>
<td>• GEOG 551 - Principles of Remote Sensing</td>
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<td>• GEOG 564 – GIS-Based Modeling</td>
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<tr>
<td>Information Infrastructure</td>
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<tr>
<td>• CSCE 101 - Introduction to Computer Concepts</td>
<td></td>
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<tr>
<td>• CSCE 102 - General Applications Programming</td>
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<tr>
<td>• CSCE 204 - Program Design and Development</td>
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<tr>
<td>• SLIS 202 - Introduction to Information Literacy and Technology</td>
<td></td>
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<tr>
<td>• SLIS 402 - Introduction to Management Within Information Environments</td>
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<tr>
<td>• SLIS 435 - Digital Information Infrastructure</td>
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<td></td>
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<tr>
<td>Information Science</td>
<td></td>
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<tr>
<td>• CSCE 101 - Introduction to Computer Concepts</td>
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<tr>
<td>• CSCE 102 - General Applications Programming</td>
<td></td>
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<tr>
<td>• CSCE 204 - Program Design and Development</td>
<td></td>
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<tr>
<td>• SLIS 201 - Introduction to Information Science</td>
<td></td>
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<tr>
<td>• SLIS 301 - Information Storage and Retrieval</td>
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<tr>
<td>• SLIS 420 - Communication and Information Transfer</td>
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<tr>
<td>Networking</td>
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<tr>
<td>• CSCE 101 - Introduction to Computer Concepts</td>
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<tr>
<td>• CSCE 102 - General Applications Programming</td>
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</tr>
<tr>
<td>• ITEC 233 - Introduction to Computer Hardware and Software Support</td>
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<tr>
<td>• ITEC 245 - Introduction to Networking</td>
<td></td>
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<tr>
<td>• ITEC 445 - Advanced Networking</td>
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<tr>
<td>• ITEC 545 - Telecommunications</td>
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<td></td>
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<tr>
<td>Project Management</td>
<td></td>
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<tr>
<td>• CSCE 101 - Introduction to Computer Concepts</td>
<td></td>
</tr>
<tr>
<td>• CSCE 102 - General Applications Programming</td>
<td></td>
</tr>
<tr>
<td>• ITEC 264 - Computer Applications in Business I</td>
<td></td>
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<tr>
<td>• ITEC 265 - Computer Applications in Business II</td>
<td></td>
</tr>
<tr>
<td>• ITEC 560 - Analysis and Applications of Project Management Software</td>
<td></td>
</tr>
</tbody>
</table>
V. Other Course Substitutions

The university may develop new courses that are appropriate for this minor as a result of rapid advances in computing. A student may substitute such a course for one of the requirements only with the approval of the advisor of the student and the director of the minor.

New Course

CSCE 518 Ethical Hacking. (3) Fundamental principles and techniques of ethical hacking, including penetration testing life cycle, planning and scoping, identifying targets and goals, active and passive reconnaissance, enumeration and scanning, exploitation, post-exploitation, and results reporting.

Prereq: CSCE 215 or previous Linux/UNIX experience.

Change Prequisities:

From: CSCE 350 Data Structures and Algorithms. (3)
Prereq: CSCE 146; MATH 174 or MATH 374 or MATH 574

To: CSCE 350 Data Structures and Algorithms. (3)
Prereq: CSCE 240; MATH 174 or MATH 374 or MATH 574

From: CSCE 517 Computer Crime and Forensics. (3)
Prereq: CSCE 311

To: CSCE 517 Computer Crime and Forensics. (3)
Prereq: CSCE 215
e. Department of Electrical Engineering

Change to Major/Degree – BSE Electrical Engineering – 120 Credit Hours

Other Program Requirements

<table>
<thead>
<tr>
<th>Academic Standards</th>
<th>Change Program Requirements:</th>
</tr>
</thead>
</table>

**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.

**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 and all Electrical Engineering Major courses.

**New Course**
ELCT 541 Sensors for Biomedicine. (3) Operating principles and design of bioelectric sensors and sensor systems for medical applications.

Prerequisites: C or better in ELCT 361, ELCT 363 and ELCT 371

**Change Prerequisites**

From: ELCT 201 Introductory Electrical Engineering Laboratory. (3)

Prereq: CSCE 211, ELCT 102

To: ELCT 201 Introductory Electrical Engineering Laboratory. (3)

Prereq: C or better in ENGL 102, C or better in CSCE 211, and C or better in ELCT 102. Corequisite: Pre or Corequisite: ELCT 222

From: ELCT 350 Computer Modeling of Electrical Systems. (3)

Prereq: ELCT 222, CSCE 145

To: ELCT 350 Computer Modeling of Electrical Systems. (3)
Prereq: C or better in ELCT 222, C or better in CSCE 145

f. Department of Mechanical Engineering

Change to Major/Degree – BSE in Mechanical Engineering – 126 Credit Hours

<table>
<thead>
<tr>
<th>CMS</th>
<th>CMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose from:</td>
<td>PHIL 325 or any approved Carolina Core course for CMS</td>
</tr>
<tr>
<td>• PHIL 325 - Engineering Ethics (CMS/VSR overlay)</td>
<td></td>
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<tr>
<td>• SPCH 140 - Public Communication</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>VSR</th>
<th>VSR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose from:</td>
<td>PHIL 325 or any approved Carolina Core course for VSR</td>
</tr>
<tr>
<td>• PHIL 325 - Engineering Ethics (CMS/VSR overlay)</td>
<td></td>
</tr>
<tr>
<td>• HIST 108 - Science and Technology in World History (VSR/GHS overlay)</td>
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<tr>
<td>• PHIL 211 - Contemporary Moral Issues</td>
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<tr>
<td>• PHIL 320 - Ethics</td>
<td></td>
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<tr>
<td>• PHIL 321 - Medical Ethics</td>
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<tr>
<td>• PHIL 322 - Environmental Ethics</td>
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</tbody>
</table>

Existing Electives:

<table>
<thead>
<tr>
<th>Mechanical Elective (9hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• EMCH 308 - Introduction to Finite Element Stress Analysis</td>
</tr>
<tr>
<td>• EMCH 441 - Automotive System Fundamentals</td>
</tr>
<tr>
<td>• EMCH 460 - Special Problems</td>
</tr>
<tr>
<td>• EMCH 497 - Design of Thermal Systems</td>
</tr>
<tr>
<td>• Any EMCH course numbered 500 or higher.</td>
</tr>
</tbody>
</table>

Technical Elective (3 hrs)

| 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. |

Change Electives:

<table>
<thead>
<tr>
<th>Mechanical Elective (9hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• EMCH 308 - Introduction to Finite Element Stress Analysis</td>
</tr>
<tr>
<td>• EMCH 441 - Automotive System Fundamentals</td>
</tr>
<tr>
<td>• EMCH 460 - Special Problems</td>
</tr>
<tr>
<td>• EMCH 497 - Design of Thermal Systems</td>
</tr>
<tr>
<td>• Any EMCH course numbered 500 or higher.</td>
</tr>
</tbody>
</table>

Free Elective (3 hrs)

| Any course taken at the University or transferred in as a University course that does not essentially duplicate a course otherwise applied to the degree. A list of such courses that cannot be used as a free elective is maintained in the department office. This list includes: ENCP 101, 102, 200, 201, 210, 260, 290, 330, 360, 491, 492; ECHE 101, 310, 320, 321; ECIV 101, 111, 200, 201, 210, 220, 360; BMEN 101, 211, 260, ELCT 101. |

Other Program Requirements:  

Change Program Requirements:
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 - Critical Reading and Composition
- ENGL 102 - Rhetoric and Composition
- MATH 141 - Calculus I
- MATH 142 - Calculus II
- CHEM 111 - General Chemistry I
- PHYS 211 - Essentials of Physics I
- PHYS 211L - Essentials of Physics I Lab

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

Lower Division Courses for the Mechanical Engineering B.S.E. program consist of:

- ENGL 101 - Critical Reading and Composition
- ENGL 102 - Rhetoric and Composition
- MATH 141 - Calculus I
- MATH 142 - Calculus II
- MATH 241 - Vector Calculus
- MATH 242 - Elementary Differential Equations
- CHEM 111 - General Chemistry I
- CHEM 111L - General Chemistry I Laboratory
- CHEM 112 - General Chemistry II
- CHEM 112L - General Chemistry II Laboratory
- 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
- All Lower Division Engineering courses.

Upper Division 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 - Mechanical Engineering Laboratory I

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.
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 & SPORT MANAGEMENT
   a. Hotel, Restaurant and Tourism Management

New courses

HRTM 476 Craft Beer. (3) Study of craft beer through exploration of current trends, countries of origin, beer styles, flavor profiles, food flavor pairings and best business practices.

Restricted to: Students must be 21 years old.

HRTM 592 Golf Tourism Consumer Services. (1) Examines superior customer service in high-quality business operations for a mega golf-tourism event; includes an experiential learning/fieldwork component.

Prerequisite: HRTM 591

HRTM 593 Golf Tourism Supervisory Skills. (1) Examines basic supervisory skills in high-quality business operations for a mega golf-tourism event; includes an experiential learning/fieldwork component.

Prerequisite: HRTM 591, HRTM 592

HRTM 594 Golf Tourism Leadership Skills. (1) Examines management and leadership skills in high-quality business operations for a mega golf-tourism event; includes an experiential learning/fieldwork component.

Prerequisite: HRTM 591, HRTM 592, HRTM 593

b. Integrated Information Technology

Change to Major/BS in Integrated Information Technology – Change Credit Hrs. from 125 to 120

Existing
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.

Degree Requirements (125 Credit Hours)
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-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 233 - Introduction to Computer Hardware and Software Support
Course Grade Requirements

<table>
<thead>
<tr>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITEC 245 - Introduction to Networking</td>
</tr>
<tr>
<td>ITEC 265 - Computer Applications in Business II</td>
</tr>
<tr>
<td>ITEC 362 - Web-Based Support Systems</td>
</tr>
</tbody>
</table>

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.

Change Optional Program Introduction:

Integrated Information Technology, B.S.

Return to: Bulletin Search

Accreditation

Learning Outcomes

Degree Requirements

Academic Standards

Integrated Information Technology

College of Engineering and Computing

Accreditation

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

Degree Requirements (120 Credit Hours)

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

1. Carolina Core (31-43 Hours)
2. Related Courses (18 Hours)
3. Lower Division Integrated Information Technology (18 Hours)
4. Integrated Information Technology Major (36 Hours)
5. Free Electives (5 – 17 Hours)
<table>
<thead>
<tr>
<th>GFL: Global Citizenship and Multicultural Understanding/Foreign Language (0-6 Hours)</th>
<th>GFL: Global Citizenship and Multicultural Understanding: Foreign Language (0-6 hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 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.</td>
<td>• Score two or better on foreign language placement test; or complete the 109 and 110 courses in one foreign language; or complete the 121 course in another foreign language. See list of approved GFL courses.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INF: Information Literacy</th>
<th>INF: Information Literacy (0 - 3 hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• This requirement may be met in an overlay course that combines learning outcomes from two Carolina Core components.</td>
<td>• Any approved overlay or stand-alone Carolina Core INF course</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VSR: Values, Ethics and Social Responsibility</th>
<th>VSR: Values, Ethics, and Social Responsibility (0 - 3 hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• This requirement may be met in an overlay course that combines learning outcomes from two Carolina Core components.</td>
<td>Any approved overlay or stand-alone Carolina Core VSR course</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>College of HRSM Required Courses (21 Hours)</th>
<th>2. Related Courses (18 Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• SPTE 240 - Business Law</td>
<td>• ECON 224 - Introduction to Economics</td>
</tr>
<tr>
<td>• ITEC 242 - Business Communications</td>
<td>• SPTE 240 - Business Law</td>
</tr>
<tr>
<td>• ITEC 264 - Computer Applications in Business I</td>
<td>• ITEC 242 - Business Communications</td>
</tr>
<tr>
<td>• RETL 261 - Functional Accounting I</td>
<td>• RETL 261 - Functional Accounting I</td>
</tr>
<tr>
<td>• RETL 262 - Functional Accounting II</td>
<td>• RETL 262 - Functional Accounting II</td>
</tr>
<tr>
<td>• HRTM 344 - Personnel Organization and Supervision</td>
<td>• HRTM 344 - Personnel Organization and Supervision or MGMT 371 - Principles of Management</td>
</tr>
<tr>
<td>• HRSM 301 - HRSM Professional Development Seminar</td>
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</tbody>
</table>

Related Coursework (3 Hours)

| • ECON 224 - Introduction to Economics | |
## Integrated Information Technology Requirements (52 Hours)

### A. iIT Core Courses (30 Hours)
- ITEC 101 - Thriving in the Tech Age
- ITEC 233 - Introduction to Computer Hardware and Software Support
- ITEC 245 - Introduction to Networking
- ITEC 265 - 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 - Introduction to Human Computer Interaction
- ITEC 445 - Advanced Networking

### B. iIT Professional Division Classes (22 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 560 - Analysis and Applications of Project Management Software
- ITEC 564 - Project Management for Information Systems

### 3. Lower Division Integrated Information Technology (18 hours)

- ITEC 101 - Thriving in the Tech Age
- CSCE 204 - Program Design and Development
- ITEC 233 - Introduction to Computer Hardware and Software Support
- ITEC 245 - Introduction to Networking
- ITEC 264 - Computer Applications in Business I
- ITEC 265 - Computer Applications in Business II

### 4. Integrated Information Technology Major (36 Hours)

#### Required Major Courses
- ITEC 301 – Professional Internship Seminar
- ITEC 352 - Software Design
- ITEC 362 - Web-Based Support Systems
- ITEC 370 - Database Systems in Information Technology
- ITEC 444 - Introduction to Human Computer Interaction
- ITEC 445 - Advanced Networking
- ITEC 447 – Management of Information Technology
- ITEC 493 – Information Technology Security for Managers
- ITEC 495 – Professional Internship
- ITEC 560 – Analysis and Applications of Project Management Software
- ITEC 564 – Project Management for Information Systems

#### Integrated Information Technology Elective (3 hours)

Choose one of the following courses:
- ITEC 475 - Mainframe Systems
- ITEC 476 - Job Control Language
- ITEC 544 - Training Systems
- ITEC 545 - Telecommunications
- ITEC 562 - Advanced Web Support Systems
- ITEC 570 - Database Management and Administration
- ITEC 586 - eCommerce Technology in Hospitality
- ITEC 590 - Special Topics in Integrated Information Technology
### ITEC Elective (one of the following courses required):

- ITEC 475 - Mainframe Systems
- ITEC 476 - Job Control Language
- ITEC 544 - Training Systems
- ITEC 545 - Telecommunications
- ITEC 562 - Advanced Web Support Systems
- ITEC 570 - Database Management and Administration
- ITEC 586 - eCommerce Technology in Hospitality
- ITEC 590 - Special Topics in Integrated Information Technology

### Free Electives (1-13 Hours)

The IIT curriculum includes 1-13 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).

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### 5. Free Electives (5-17 Hours)

The IIT curriculum includes 5-17 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).

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### Academic Standards

#### Minimum Course Grades

The Integrated Information Technology B.S. program requires that a grade of “C” or better be earned in MATH 174 and all ITEC courses applied to the degree. All required IIT courses and courses taken as major electives are major courses and may not be counted toward a minor. All other required courses and electives may be used for a minor or application area as appropriate. CSCE 101 and 102 are not major courses and may not be counted for major credit.

#### 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 Integrated Information Technology B.S. program: all Lower Division Integrated Information Technology courses and all Integrated Information Technology Major courses.

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### Change to Minor/Integrated Information Technology – 18 Credit Hours
### Integrated Information Technology Minor

**Return to:** Bulletin Search

- **Minor Requirements**
- **Integrated Information Technology**
- **College of Hospitality, Retail, and Sport Management**

#### Minor Requirements

**Required: (12 Hours)**

- ITEC 101 - Thriving in the Tech Age
- ITEC 233 - Introduction to Computer Hardware and Software Support
- ITEC 264 - Computer Applications in Business I
- ITEC 265 - Computer Applications in Business II

**Electives: Choose two (6 Hours)**

Some may require pre-requisite courses.

- ITEC 245 - Introduction to Networking
- ITEC 352 - Software Design
- ITEC 362 - Web-Based Support Systems
- ITEC 370 - Database Systems in Information Technology
- ITEC 399 - Independent Study
- ITEC 444 - Introduction to Human Computer Interaction
- ITEC 445 - Advanced Networking
- ITEC 447 - Management of Information Technology
- ITEC 475 - Mainframe Systems
- ITEC 476 - Job Control Language
- ITEC 544 - Training Systems
- ITEC 545 - Telecommunications
- ITEC 560 - Analysis and Applications of Project Management Software
- ITEC 562 - Advanced Web Support Systems
- ITEC 564 - Project Management for Information Systems
- ITEC 570 - Database Management and Administration
- ITEC 584 - Hospitality and Tourism Technology
- ITEC 586 - eCommerce Technology in Hospitality
- ITEC 590 - Special Topics in Integrated Information Technology

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**Change Cognate and Minor Requirements:**
Integrated Information Technology Minor

Minor Requirements

Required: (12 Hours)

- ITEC 101 - Thriving in the Tech Age
- ITEC 233 - Introduction to Computer Hardware and Software Support
- ITEC 264 - Computer Applications in Business I
- ITEC 265 - Computer Applications in Business II

Electives: Choose two (6 Hours)

Some may require pre-requisite courses.

- ITEC 245 - Introduction to Networking
- ITEC 352 - Software Design
- ITEC 362 - Web-Based Support Systems
- ITEC 370 - Database Systems in Information Technology
- ITEC 399 - Independent Study
- ITEC 444 - Introduction to Human Computer Interaction
- ITEC 445 - Advanced Networking
- ITEC 447 - Management of Information Technology
- ITEC 475 - Mainframe Systems
- ITEC 476 - Job Control Language
- ITEC 493 - Information Technology Security for Managers
- ITEC 544 - Training Systems
- ITEC 545 - Telecommunications
- ITEC 560 - Analysis and Applications of Project Management Software
- ITEC 562 - Advanced Web Support Systems
- ITEC 564 - Project Management for Information Systems
- ITEC 570 - Database Management and Administration
- ITEC 584 - Hospitality and Tourism Technology
- ITEC 586 - eCommerce Technology in Hospitality
- ITEC 590 - Special Topics in Integrated Information Technology

Delete Prerequisites

From: ITEC 233 Intro to Comp Hardware & Software Support. (3)
Prereq: ITEC 264
To: ITEC 233 Intro to Comp Hardware & Software Support. (3)
Change Prerequisites

From: ITEC 245  Introduction to Networking. (3)
      Prereq and Coreq: ITEC 243
To:    ITEC 245  Introduction to Networking. (3)
      Prereq or Corequisite: ITEC 233

From: ITEC 370  Database Systems in Information Technology. (3)
      Prereq: ITEC 264 and 346
To:    ITEC 370  Database Systems in Information Technology. (3)
      Prereq: ITEC 265

From: ITEC 445  Advanced Networking. (3)
      Prereq: ITEC 345
To:    ITEC 445  Advanced Networking. (3)
      Prereq: ITEC 245

From: ITEC 475  Mainframe Systems. [=CSCE 415] (3)
      Prereq: Professional division standing in ITEC, upper division standing in CSCE, or
      permission of instructor
To:    ITEC 475  Mainframe Systems. [=CSCE 415] (3)
      Prereq: ITEC 352 or CSCE 240

From: ITEC 544  Training Systems. (3)
      Prereq: professional division and ITEC 444
To:    ITEC 544  Training Systems. (3)
      Prereq: ITEC 444

From: ITEC 545  Telecommunications. (3)
      Prereq: professional division and ITEC 345 or consent of instructor
To: ITEC 545  
Telecommunications. (3)  
Prereq: ITEC 245

From: ITEC 560  
Analysis and Applications of Project Management Software. (3)  
Prereq: professional division
To: ITEC 560  
Analysis and Applications of Project Management Software. (3)  
Prereq: ITEC 264 and ITEC 265

From: ITEC 562  
Advanced Web Support Systems. (3)  
Prereq: professional division and ITEC 362
To: ITEC 562  
Advanced Web Support Systems. (3)  
Prereq: ITEC 362

From: ITEC 564  
Project Management for Information Systems. (3)  
Prereq: professional division and ITEC 560 or consent of instructor
To: ITEC 564  
Project Management for Information Systems. (3)  
Prereq: ITEC 362 and ITEC 560

From: ITEC 570  
Database Management and Administration. (3)  
Prereq: professional division and ITEC 370
To: ITEC 570  
Database Management and Administration. (3)  
Prereq: ITEC 370

Change Credit Hours and delete prerequisite

From: ITEC 301  
Professional Internship Seminar. (1)  
Prereq: professional division
To: ITEC 301  
Professional Internship Seminar. (3)
Add Prerequisite
From: ITEC 352 Software Design Development. (3)
To: ITEC 352 Software Design Development. (3)
Prereq: CSCE 204

From: ITEC 476 Job Control Language. (3)
To: ITEC 476 Job Control Language. (3)
Prereq: ITEC 352

Add Enrollment Restriction and change prerequisite
From: ITEC 495 Professional Internship. (6)
    Prereq: professional division and ITEC 301
To: ITEC 495 Professional Internship. (6)
    Prereq: ITEC 301
    Restricted to: IIT Students

Change Number of Times Course can be taken for credit, delete prerequisite
From: ITEC 590 Special Topics in Integrated Information Technology. (3)
    Prereq: professional division or consent of instructor
    Number Times Course can be taken from credit: 1
To: ITEC 590 Special Topics in Integrated Information Technology. (3)
    Number Times Course can be taken from credit: 2

c. Retailing

Curriculum Change to Concentration – Fashion Merchandising/BS Retailing – 120 Credit Hours

Existing Concentration/Areas of Emphasis

Change Concentration/Areas of Emphasis
### Fashion Merchandising (21 hours)

**Required Courses**

- RETL 268 - Principles of Fashion Merchandising
- RETL 365 - Visual Merchandising and Store Design
- RETL 368 - Fashion Product Analysis
- RETL 388 - Fashion Forecasting
- RETL 462 - Merchandise Management Strategies

**Additional hours of RETL courses selected from the following (6 hours)**

- RETL 115 - Fashion through the Ages: 3000 B.C. to 1800 A.D.
- RETL 116 - Fashion Through the Ages: 1800 A.D. to Present
- RETL 201 - Exploration of Retail Management and Fashion Merchandising Industries
- RETL 237 - The Changing Consumer Marketplace
- RETL 310 - Internet Retailing
- RETL 324 - Topics in Fashion History
- RETL 330 - Loss Prevention for Retailers
- RETL 350 - Sales Strategies
- RETL 351 - Small Business Organization and Operation
- RETL 460 - Retail Branding Strategies
- RETL 491 - Critical Issues in Retailing
- RETL 530 - Fashion and the Law
- RETL 551 - Advanced Retail Business Planning
- RETL 562 - Advanced Merchandise Management Strategies
- RETL 590 - Special Topics in Retail Management
- RETL 592 - Retailing/Fashion Merchandising Field Study
- RETL 695 - Retailing Literature & Thought

**Additional hours of free elective courses (6-14 hours)**

The additional hours of electives may vary depending upon how students fulfill the Carolina Core requirements.

---

### Fashion Merchandising (21 hours)

**Required Courses**

- RETL 268 - Principles of Fashion Merchandising
- RETL 365 - Visual Merchandising and Store Design
- RETL 368 - Fashion Product Analysis
- RETL 388 - Fashion Forecasting
- RETL 462 - Merchandise Management Strategies

**Additional hours of RETL courses selected from the following (6 hours)**

- RETL 115 - Fashion through the Ages: 3000 B.C. to 1800 A.D.
- RETL 116 - Fashion Through the Ages: 1800 A.D. to Present
- RETL 201 - Exploration of Retail Management and Fashion Merchandising Industries
- RETL 237 - The Changing Consumer Marketplace
- RETL 310 - Internet Retailing
- RETL 324 - Topics in Fashion History
- RETL 330 - Loss Prevention for Retailers
- RETL 350 - Sales Strategies
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- RETL 551 - Advanced Retail Business Planning
- RETL 562 - Advanced Merchandise Management Strategies
- RETL 590 - Special Topics in Retail Management
- RETL 592 - Retailing/Fashion Merchandising Field Study

**Additional hours of free elective courses (6-14 hours)**

The additional hours of electives may vary depending upon how students fulfill the Carolina Core requirements.

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**Curriculum Change to Concentration/Retail Management/BS in Retailing – 120 Credit Hours**
### Retail Management (21 hours)

**Required Courses**

- RETL 330 - Loss Prevention for Retailers
- RETL 350 - Sales Strategies
- RETL 351 - Small Business Organization and Operation
- RETL 487 - Retail Management Strategies

**Additional hours of RETL courses selected from the following (9 hours)**

- RETL 201 - Exploration of Retail Management and Fashion Merchandising Industries
- RETL 237 - The Changing Consumer Marketplace
- RETL 310 - Internet Retailing
- RETL 460 - Retail Branding Strategies
- RETL 491 - Critical Issues in Retailing
- RETL 525 - Law for Retailers
- RETL 551 - Advanced Retail Business Planning
- RETL 562 - Advanced Merchandise Management Strategies
- RETL 590 - Special Topics in Retail Management
- RETL 592 - Retailing/Fashion Merchandising Field Study
- RETL 695 - Retailing Literature & Thought

**Additional hours of free elective courses (6-14 hours)**

The additional hours of electives may vary depending upon how students fulfill the Carolina Core requirements.

---

**Delete courses**

- RETL 491 Critical Issues in Retailing. (3)
- RETL 695 Retailing Literature & Thought. (3)

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### 6. COLLEGE OF INFORMATION AND COMMUNICATIONS

#### a. School of Journalism and Mass Communications

**New course**

JOUR 391 Sports Media and Society. (3) History of sports media and an analysis of current relationships between the sports industry, athletes, media, social media and the audience.

---

### 7. SCHOOL OF MUSIC

**New Program – Chamber Music – Credit Hours 12**
Optional College/School Gen Ed or Departmental Requirements

Bachelor of Music

1. General Education - Carolina Core (38 Hours)

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 Hours)

SCI: Scientific Literacy (7 hours)

GFL: Global Citizenship and Multicultural Understanding: Foreign Language (0-9 hours)

- Language Proficiency through 122

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

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

AIU: Aesthetic and Interpretive Understanding (3 hours)

- Course(s) must be taken in a department other than Music

Overlay Eligible Courses (3-9 Hours)

Up to two of these core requirements may be met in overlay courses.
### CMS: Effective, Engaged and Persuasive Communication: Speech (0-3 Hours)

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

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

### Nonmusic Electives (0-7 Hours)

#### Optional Program/Major Requirements:

**Performance Emphasis (90 Hours)**

Primary concentration in applied music (Usually 32 Hours)

(1 Hour)

- MUSC 100 - Recital Class
- MUSC 100A - Music Advocacy I: Understanding the Power of Your Music
- MUSC 100L - Recital Class Laboratory

(16 Hours)

- MUSC 115 - Music Theory I
- MUSC 116 - Music Theory II
- MUSC 117 - Aural Skills I
- MUSC 118 - Aural Skills II
- MUSC 215 - Music Theory III
- MUSC 216 - Music Theory IV
- MUSC 217 - Aural Skills III
- MUSC 218 - Aural Skills IV

(9 Hours)
- MUSC 353 - History of Western Music I
- MUSC 354 - History of Western Music II
- MUSC 455 - History of Western Music III

(3 Hours)

- MUSC 518 - Form and Analysis or
- MUSC 525 - Post-Tonal Music Theory

Theory, history, and literature electives (6 Hours)

Students must complete the literature course[s] in applied area when available.

Conducting (2 Hours)

Ensembles (8 Hours)

Electives (13 Hours)

- MUED 155 - Group Piano
- MUED 156 - Group Piano or demonstration of piano proficiency is required
- Students whose primary medium is voice must complete MUSC 278, MUSC 578, MUSC 579
- Students must complete a pedagogy course in applied area when available
- For Bachelor of Music candidates with an emphasis in performance, a half recital is required in the junior year and a full recital is required in the senior year.

Other Program Requirements:

Chamber Music Concentration (12)

- MUSC 130--Chamber Music (in addition to the current chamber music requirement) 3-6
- MUSC 592--21st Century Musician 3
<table>
<thead>
<tr>
<th>Music Theory elective chosen from:</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>• MUSC 319—Jazz Theory I</td>
<td></td>
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<tr>
<td>• MUSC 518—Form and Analysis</td>
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<tr>
<td>• MUSC 525—Post-Tonal Theory</td>
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</tbody>
</table>

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<thead>
<tr>
<th>Concentration elective chosen from:</th>
<th>0-3</th>
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</thead>
<tbody>
<tr>
<td>• MUSC 580—Entrepreneurship in Music</td>
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<td>• MUSC 591—Music Leadership Practicum</td>
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<tr>
<td>• MUSC 593—Arts Marketing</td>
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<tr>
<td>• MUSC 594—Independent Music Teaching Business</td>
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</tr>
</tbody>
</table>

Students pursuing this concentration will be permitted to use MUSC 115—Music Theory I in the AIU area of the Carolina Core. Completion of MUSC 518—Form and Analysis (3) or MUSC 525—Post-Tonal Theory (3) and the Music Theory and Music Literature electives (6) is no longer required. However, students pursuing this concentration must complete literature and pedagogy courses in applied area when available (piano majors should take MUSC 573, 573L, and 558 or 559; voice majors should take MUSC 278, 577, and 543 or 545; and guitar majors should take MUSC 573 and 587).

### New Program – Minor - Music Industry Studies – Credit Hours 18

**Optional Cognate and Minor Requirements:**

- MUSC 305—Intro to Music Industry Studies (1)
- SPTE 202—Intro to Live Entertainment Mgmt (3)
- MUSC 365—Intro to Audio Recording (3)
- MUSC 580—Entrepreneurship in Music (3)
- MKTG 350—Principles of Marketing or MUSC 593—Arts Marketing (3)
- ECON 224—Introduction to Economics or  MUSC 582—Music and Money (3)
- MUSC 498—Music Practicum (2)

One popular music course (MUSC 113, 140, or 340) will be required in the Aesthetic and Interpretive Understanding area of the Carolina Core.

### New Program- Music Entrepreneurship – Credit Hours 12

**Optional College/School Gen Ed or Departmental Requirements:**

- Bachelor of Music

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133
1. General Education - Carolina Core (38 Hours)

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 Hours)

SCI: Scientific Literacy (7 hours)

GFL: Global Citizenship and Multicultural Understanding: Foreign Language (0-9 hours)

- Language Proficiency through 122

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

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

AIU: Aesthetic and Interpretive Understanding (3 hours)

- Course(s) must be taken in a department other than Music

Overlay Eligible Courses (3-9 Hours)

Up to two of these core requirements may be met in overlay courses.

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

INF: Information Literacy (0-3 Hours)
<table>
<thead>
<tr>
<th>Optional Program/Major Requirements:</th>
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</thead>
<tbody>
<tr>
<td>Performance Emphasis (90 Hours)</td>
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<tr>
<td>Primary concentration in applied music (Usually 32 Hours)</td>
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</tr>
</tbody>
</table>
(3 Hours)

- MUSC 518 - Form and Analysis or
- MUSC 525 - Post-Tonal Music Theory

Theory, history, and literature electives (6 Hours)

Students must complete the literature course[s] in applied area when available.

Conducting (2 Hours)

Ensembles (8 Hours)

Electives (13 Hours)

- MUED 155 - Group Piano
- MUED 156 - Group Piano or demonstration of piano proficiency is required
- Students whose primary medium is voice must complete MUSC 278, MUSC 578, MUSC 579
- Students must complete a pedagogy course in applied area when available
- For Bachelor of Music candidates with an emphasis in performance, a half recital is required in the junior year and a full recital is required in the senior year.

Other Program Requirements:

Entrepreneurship Concentration (12)

- MUSC 580--Entrepreneurship in Music 3
- MUSC 582--Music and Money 3
- MUSC 591--Music Leadership Practicum 3

Concentration elective chosen from: 3

- MUSC 592--21st Century Musician
- MUSC 594--Independent Music Teaching Business
Students pursuing this concentration will be permitted to use MUSC 115—Music Theory I in the AIU area of the Carolina Core. Completion of MUSC 518—Form and Analysis (3) or MUSC 525—Post-Tonal Theory (3) and the Music Theory and Music Literature electives (6) is no longer required. However, students pursuing this concentration must complete literature and pedagogy courses in applied area when available (piano majors should take MUSC 573, 573L, and 558 or 559; voice majors should take MUSC 278, 577, and 543 or 545; and guitar majors should take MUSC 573 and 587).

New Concentration - Music Technology – Credit Hours 12

Optional Concentration/Area of Emphasis/Distinction Requirements:

Bachelor of Music

1. General Education - Carolina Core (38 Hours)

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 Hours)

SCI: Scientific Literacy (7 hours)

GFL: Global Citizenship and Multicultural Understanding: Foreign Language (0-9 hours)

- Language Proficiency through 122

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

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

AIU: Aesthetic and Interpretive Understanding (3 hours)

- Course(s) must be taken in a department other than Music

Overlay Eligible Courses (3-9 Hours)

Up to two of these core requirements may be met in overlay courses.

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

INF: Information Literacy (0-3 Hours)

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

Nonmusic Electives (0-7 Hours)
Performance Emphasis (90 Hours)

Primary concentration in applied music (Usually 32 Hours)

(1 Hour)
- MUSC 100 - Recital Class
- MUSC 100A - Music Advocacy I: Understanding the Power of Your Music
- MUSC 100L - Recital Class Laboratory

(16 Hours)
- MUSC 115 - Music Theory I
- MUSC 116 - Music Theory II
- MUSC 117 - Aural Skills I
- MUSC 118 - Aural Skills II
- MUSC 215 - Music Theory III
- MUSC 216 - Music Theory IV
- MUSC 217 - Aural Skills III
- MUSC 218 - Aural Skills IV

(9 Hours)
- MUSC 353 - History of Western Music I
- MUSC 354 - History of Western Music II
- MUSC 455 - History of Western Music III

(3 Hours)
- MUSC 518 - Form and Analysis or
- MUSC 525 - Post-Tonal Music Theory

Theory, history, and literature electives (6 Hours)

Students must complete the literature course[s] in applied area when available.

Conducting (2 Hours)

Ensembles (8 Hours)

Electives (13 Hours)
- MUED 155 - Group Piano
- MUED 156 - Group Piano or demonstration of piano proficiency is required
- Students whose primary medium is voice must complete MUSC 278, MUSC 578, MUSC 579
- Students must complete a pedagogy course in applied area when available
- For Bachelor of Music candidates with an emphasis in performance, a half recital is required in the junior year and a full recital is required in the senior year.
Music Technology Concentration (12)

- MUSC 336--Introduction to Computer Music 3

Concentration electives chosen from: 9

- MUSC 580--Entrepreneurship in Music
- MUSC 365--Intro to Audio Recording Techniques
- MUSC 565--Advanced Audio Recording Techniques
- MUSC 540--Projects in Computer Music

Students pursuing this concentration will be permitted to use MUSC 115—Music Theory I in the AIU area of the Carolina Core. Completion of MUSC 518—Form and Analysis (3) or MUSC 525—Post-Tonal Theory (3) and the Music Theory and Music Literature electives (6) is no longer required. However, students pursuing this concentration must complete literature and pedagogy courses in applied area when available (piano majors should take MUSC 573, 573L, and 558 or 559; voice majors should take MUSC 278, 577, and 543 or 545; and guitar majors should take MUSC 573 and 587).

New Courses

MUSC 305 Introduction to Music Industry Studies. (1) An overview of the music industry. Students will explore a variety of music industry career paths in areas such as arts management, music products and merchandizing, public relations, music production and recording, publishing, online music distribution, and live music event organization.

MUSC 595 Community Engagement Through Music. (2) Community engagement as it relates to music, with a focus on developing practical skills in creating engaging, interactive performances for various audiences.

Restricted to: Music

New Course/CCORE

MUSC 210 Understanding the Psychology of Music. (3) Various psychological and psychosocial aspects of human musical behavior, including introductory musical acoustics, perception and cognition of music, music and the brain, music processing across world cultures, music and emotions, music and human health, music in social contexts, and principles of experimental design.

8. ARNOLD SCHOO0L OF PUBLIC HEALTH

Change maximum number of credit hours if taken multiple times, title, description, prerequisite

To: HPEB 301 Practicum in Health Education. (1-9) Practical experience in applying health education
principles in the community, clinic, or worksite.

Maximum number of credit hours if course can be taken multiple times: 9

From: HPEB 301 Practicum in Health Promotion. (1-6) Practical experience in applying health promotion principles in the community or organization.

Prerequisite: Students are required to have completed HPEB 300 prior to undertaking HPEB 301.

Maximum number of credit hours if course can be taken multiple times: 6

9. PALMETTO COLLEGE

Change to Major/Degree Program – BA in Liberal Studies – 120 Credit Hours

Existing Program Introduction:

Overview of the BLS
The Bachelor of Arts degree in Liberal Studies Program (BLS) is only available to students on USC’s regional campuses or online through Palmetto College. It is designed to provide access to upper-level study in a range of liberal arts disciplines, fostering the abilities to think critically, communicate effectively, solve problems, and interpret human experience. Goals of this program are to enhance students’ intellectual and creative capacities and broaden their historical, ethical, social, and international perspectives while allowing them some flexibility in designing the upper-level curricula based on previous studies and employment objectives.

Learning Outcomes
- Students will demonstrate the ability to initiate independent, interdisciplinary inquiry and the ability to apply critical thinking to interdisciplinary problems.
- Students will demonstrate an understanding of South Carolina from historical as well as contemporary political, economic, and social perspectives in papers, assignments and other student writing.
- Students will demonstrate the ability to be an educated and participatory citizen of South Carolina and explain how their academic training has prepared them to be an active state citizen.
- Students will demonstrate the ability to apply classroom learning to real-world experience in the public or private sector.

Admission and Graduation Standards
Students may apply to the Liberal Studies Program after completion of at least 45 semester hours of accredited, college-level work. A minimum grade point of 2.00 is required for admission and graduation. As part of the application process, a specific Program of Study is developed by the student and the student’s advisor and approved by the Program Committee. Any changes to the Program of Study must be approved by the advisor and Program Committee. All students must earn at least 30 USC hours after admission to this program. A minimum of 120 semester hours of accredited, college-level work must be presented to earn this degree.

Degree Requirements (120 Hours)
The Bachelor of Arts in Liberal Studies (BLS) is designed for students who want to pursue liberal studies without a major in a single discipline.
# 1. Carolina Core Plus General Education Requirements

## CMW: Effective, Engaged, and Persuasive Communication: Writing (6 hours)

Must be passed with a grade of C or higher.
- ENGL 101 - Critical Reading and Composition
- ENGL 102 - Rhetoric and Composition

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

- Any approved Carolina Core ARP courses

## SCI: Scientific Literacy (8 Hours)

- Any approved Carolina Core SCI courses, must include two labs

## GFL: Global Citizenship and Multicultural Understanding: Communicate Effectively in More than One Language (0-9 Hours)

Demonstration of proficiency in one foreign language equivalent to the minimal passing grade on the exit examination in the 122 course is required. Students can demonstrate this proficiency by successfully completing Phase II of the Proficiency Test or by successfully completing the 122 course, including the exit exam administered as part of that course.

It is strongly recommended that students continuing the study of a foreign language begin college-level study of that language in their first semester and continue in that language until their particular foreign language requirement is completed.

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

- Any approved Carolina Core GHS courses

## GSS: Global Citizenship and Multicultural Understanding: Social Sciences (3 hours)

- Any approved Carolina Core GSS courses

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

- Any approved Carolina Core AIU course

## CMS: Effective, Engaged, and Persuasive Communication: Spoken Component (3 Hours)

## INF: Information Literacy

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

## VSR: Values, Ethics, and Social Responsibility

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

## Other Required General Education Courses for the BA in Liberal Studies:

- PHIL 102 - Introduction to Philosophy

## Additional Arts and Sciences Electives (6 Hours)

Must include two disciplines
## 2. Major Requirements (36 Hours)

### Required Courses

All courses must be at the 300-level or above with at least 15 hours at the 400-level or above. All grades must be C or better. The following three courses are required of all majors:

- **PALM 493 - South Carolina Studies**
- **PALM 494 - Internship** or **PALM 495 - Service-Learning**
- **UNIV 401 - Senior Capstone Experience**

The student’s major will be chosen from one of the following three (3) options:

### Arts and Humanities Option (27 Hours)

A minimum of 27 hours from two of the following disciplines:

- Art
- English
- History
- Languages
- Native American Studies *
- Philosophy
- Religious Studies
- Theatre

### Science and Mathematics Option (27 Hours)

A minimum of 27 hours from two of the following disciplines:

- Astronomy
- Biological Sciences
- Chemistry
- Environmental Studies
- Geological Studies
- Health Promotion, Education and Behavior
- Marine Science
- Mathematics
- Physics
- Statistics

### Social and Behavioral Sciences Option (27 Hours)

A minimum of 27 hours from two of the following disciplines:

- Anthropology
- Criminology and Criminal justice
- Economics
- Geography
- Health Promotion, Education and Behavior
- Native American Studies*
- Political science
- Psychology
- Sociology
- Social Work

*The most updated list of courses designated as fulfilling the Native American Studies option will be listed on the BA in Liberal Studies program website: [http://www.sc.edu/about/system_and_campaigns/palmetto_college/bachelor_degree_programs/liberal_studies/course_listing/index.php](http://www.sc.edu/about/system_and_campaigns/palmetto_college/bachelor_degree_programs/liberal_studies/course_listing/index.php)

### Required Courses (9 Hours)

The following three courses are required of all majors:

- **PALM 493 - South Carolina Studies**
- **PALM 494 - Internship** or **PALM 495 - Service-Learning**
- **UNIV 401 - Senior Capstone Experience**

The student’s major will be chosen from TWo of the following disciplines (27 hours). All courses must be at the upper level with at least 15 hours at the 400-level or above. All grades must be C or better. A minimum of 12 hours is required in each of the two disciplines. At least 15 hours must be USC courses. No more than 12 hours of the major will be accepted in transfer.

- Art
- English
- History
- Languages
- Native American Studies *
- Philosophy
- Religious Studies
- Theatre
- Astronomy
- Biological Sciences
- Chemistry
- Environmental Studies
- Geological Studies
- Health Promotion, Education and Behavior
- Marine Science
- Mathematics
- Physics
- Statistics
- Anthropology
- Criminology and Criminal justice
- Economics
- Geography
- Health Promotion, Education and Behavior
- Native American Studies*
- Political science
- Psychology
- Sociology

*Note:
4. Electives (21-31 Hours)

4. Electives (Sufficient elective credit to meet degree requirements of 120 hours.)

Existing Cognate and Minor Requirements:

### 3. Cognate (12 Hours)

All grades must be C or better.
The cognate is comprised of a discipline NOT included in the student’s major but philosophically/ontologically joined to it. A minimum of 12 hours of course work at the 300 level or above from one of the following disciplines:
- Anthropology
- Art
- Business
- Criminal justice
- Dance
- Economics
- Education
- English
- Geography
- History
- Health Promotion, Education and Behavior
- Languages
- Mathematics
- Native American Studies*
- Philosophy
- Political Science
- Psychology
- Physical and/or Biological sciences
- Religious Studies
- Social Work
- Sociology
- Theatre

The cognate cannot be a discipline included in the student’s major option. No more than six hours of transfer work may be applied to the cognate.

*Courses designated as fulfilling the Native American Studies option will be listed on the BA in Liberal Studies program website: [http://saeu.sc.edu/academics/programs/LiberalStudies/index.html](http://saeu.sc.edu/academics/programs/LiberalStudies/index.html).

Change Cognate and Minor Requirements:

### 3. Cognate (12 Hours)

All grades must be C or better.

The cognate cannot be a discipline included in the student’s major option. No more than six hours of transfer work may be applied to the cognate.
A minimum of 12 hours of course work at the 300 level or above from one of the following disciplines:

- Anthropology
- Art
- Business
- Criminal justice
- Dance
- Economics
- Education
- English
- Geography
- History
- Health Promotion, Education and Behavior
- Languages
- Mathematics
- Native American Studies*
- Philosophy
- Political Science
- Psychology
- Physical and/or Biological sciences
- Religious Studies
- Social Work
- Sociology
- Theatre

*Courses designated as fulfilling the Native American Studies option will be listed on the BA in Liberal Studies program website: http://www.sc.edu/about/system_and_campuses/palmetto_college/internal/faculty_and_staff/information_for_faculty_and_advisors/index.php.

10. PROVOST OFFICE

Change to Concentration – Graduation with Leadership Distinction

<table>
<thead>
<tr>
<th>Existing Concentration/Area of Emphasis</th>
<th>Change Concentration/Area of Emphasis</th>
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<tbody>
<tr>
<td>Graduation with Honors</td>
<td>There are no changes to the bulletin. It should remain:</td>
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<tr>
<td>. . .</td>
<td>Graduation with Honors</td>
</tr>
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<td>. . .</td>
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</tbody>
</table>

With Leadership Distinction: Any undergraduate student who completes Leadership Distinction requirements in community service, diversity and social advocacy, global learning, professional and civic engagement, and/or research as specified by the Provost's Office, regardless of the major or undergraduate degree, is awarded that degree “With Leadership Distinction in [that track].” For further details, contact the Office of USC Connect.
The change is to add GLD attributes to the courses listed below for each pathway.

- **GLD: Community Service:**
  - PHIL 321 – Medical Ethics
  - PHIL 532 – Social Justice

- **GLD: Global Learning:**
  - MGSC 405 – International Information Systems
  - LASP 331 – Geography of Latin America
  - PHIL 532 – Social Justice

- **GLD: PCE Leadership:**
  - SOWK 412 – Generalist Practice IV: Organizations and Communities
  - SOWK 422 – Advocacy for Social and Economic Justice

- **GLD: Research:**
  - EPID 410 – Principles of Epidemiology
  - PHIL 214 – Science and Pseudo-Science
  - PHIL 390 – Junior Seminar in Philosophy
  - HPEB 684 – HIV/STI Prevention
  - ITEC 444 – Introduction to Human Computer Interaction
  - BMEN 345 – Human Anatomy and Physiology for Biomedical Engineers
  - PHYS 399 – Independent Study

**Justification**