

**January 28, 2014**  
**Miscellaneous Curriculum Changes Summary (effective fall 2014)**

**Department of Biomedical Engineering**

***Major in Applied Sciences: Biomedical Engineering***

- To add BMME 455 “Biofluid Mechanics” and BMME 475 “Transport Processes” as options for fulfilling the current requirement to take APPL 341 “Thermodynamics and Kinetics Applied to Solids.”
- To add PHYS 118 and 119 as alternatives to PHYS 116 and 117, respectively

**Department of Geography**

***Major in Geography***

- To add GEOG 470 “Political Ecology: Geographical Perspectives” to the Human Activity concentration area course list
- To renumber GEOG 420 to 697 “Capstone Seminar in Geographic Research”

***Minor in Geography***

- To renumber GEOG 420 to 697 “Capstone Seminar in Geographic Research”

**Department of Women’s and Gender Studies**

***Major in Women’s and Gender Studies***

- To remove HIST 362 “Baseball and American History” from the “historical studies” course list.

**Undergraduate Curriculum Changes Implicated by the New Introductory Physics Courses**

- Major in Applied Science: Biomedical Engineering Track
- Major in Biology (BS): Regular Track and Quantitative Biology Track
- Major in Chemistry (BA)
- Major in Chemistry (BS): Regular Track, Biochemistry Track, and Polymer Track
- Major in Computer Science (BS)
- Major in Environmental Health Sciences: General Concentration, Environmental Chemistry Concentration, Environmental Health Biology Concentration, and Environmental Physics Concentration
- Major in Environmental Studies (BA)
- Major in Environmental Science (BS)
- Major in Geological Sciences (BS): Concentrations in Earth Science, Environmental Geology, Geophysics, and Paleobiology
- Major in Education: Elementary Education and Middle Grades Education
- Major in Mathematics (BS): Regular Option and Applied Option
- Major in Nutrition (BSPH)
- Major in Radiologic Science (BS)
- Major in Psychology (BS)

*(See Undergraduate Bulletin text below)*

## UNDERGRADUATE BULLETIN TEXT (Effective fall 2014)

### B.S. Major in Applied Science: Biomedical Engineering Track (124 hours)

#### Core Requirements

- BMME 150 Introduction to Materials Science
- BMME 160 Statics
- BMME 210 BME Design and Manufacturing I
- BMME 310 BME Design and Manufacturing II
- ~~APPL~~Choose one of [BMME 341 Thermodynamics and Kinetics Applied to Solids](#), [BMME 455 Biofluid Mechanics](#), [BMME 475 Transport Processes](#). After fulfilling this requirement, you may take additional courses from this list as biomedical specialty electives.
- BMME 410 Systems and Signals
- BMME 465 Biomedical Instrumentation I
- BMME 697 Senior Design Project I
- BMME 698 Senior Design Project II
- BIOL 202 and 252
- MATH 528
- PHYS 351 and 352
- Choose one statistics class from BIOS 600 or STOR 435 or STOR 455

#### Additional Requirements

- A choice of four biomedical specialty electives: Any BMME above 400, or PHYS 301, or ENVR 452/GEOL 560/MASC 560/PHYS 660

Students should take the following courses, preferably in their first two years:

- Choose one of COMP 110, 116, 401, or PHYS 331
- BIOL 101/101L
- CHEM 101/101L (physical and life sciences with laboratory Approaches requirement)
- CHEM 102/102L

- MATH 231 and 232 (quantitative reasoning Foundations and quantitative intensive Connections requirements)

- MATH 233 and 383

- PHYS 116 [or 118](#) (physical and life sciences Approaches requirement)

- PHYS 117 [or 119](#)

Students must satisfy all Foundations, Approaches, and Connections requirements, as outlined elsewhere in this bulletin. Some General Education requirements should be met with specific courses as listed above.

## **Majoring in Geography: Bachelor of Arts**

### **Core Requirements**

- GEOG 110 or 111

- GEOG 120, 121, or 130

- GEOG 370, 391, 392, and [697420](#)

- Four additional courses, at least three of which must be at the 400-level or above. These may be distributed among, or concentrated within, the following general concentration areas.

- *Earth Environmental Systems (EES)*: GEOG 406, 410, 412, 414, 416, 419, 440, 441, 442, 444, or 597

- *Geographic Information Sciences (GISci)*: GEOG 477, 491, 541, 577, 591, 592, 594, or 597

- *Geography of Human Activity (GHA)*: GEOG 225, 228, 232, 237, 423, 424, 428, 429, 430, 434, 435, 445, 446, 447, 448, 450, 452, 453, 454, 458, 460, [470](#), or 542

- *Regional Courses*: GEOG 259, 260, 261, 262, 265, 266, 267, 268, 269, 457, 458, or 464

### **Minoring in Geography**

To minor in geography a student must pass a minimum of five courses in geography. These consist of any two core courses (GEOG 110, 111, 120, 121, 130, 370, [697420](#)) and three elective courses. Elective courses may be any on the departmental list, but students are encouraged to take higher numbered courses. Students wishing more information should consult their academic advisor or the geography director of undergraduate studies.

## **Majoring in Women's and Gender Studies: Bachelor of Arts**

### **Core Requirements**

- Three interdisciplinary perspectives courses (9 hours) chosen from at least two of the following three categories:

- Historical studies: AAAD 201; AAAD/WMST 200; AMST/JWST/WMST 253;

- | ASIA/HIST/WMST 537; CLAS/WMST 240, 241, 242; ~~HIST 362~~; HIST/WMST 258, 259, 264, 280, 375, 479, 500, 501, 568, 569, 576; WMST 237, 283, 289, 560

## Curriculum Changes Implicated by PHYS 114/115 and 118/119

### **Majoring in Biology: Bachelor of Science**

#### **Additional Requirements**

- PHYS 104 [or 114 or 118](#), and 105; [or 115 or 119](#)~~or 116 and 117~~

### **B.S. Major in Biology: Quantitative Biology Track**

#### **Additional Requirements**

- PHYS 104 [or 114 or 118](#), and [PHYS 105 or 115 or 119](#)~~, or 116 and 117~~

### **Majoring in Chemistry: Bachelor of Arts**

#### **Additional Requirements**

- MATH 231, 232; PHYS 104~~, or 114~~, 116, [or 118](#); 105, [115](#), ~~or 117~~, [or 119](#)

### **Majoring in Chemistry: Bachelor of Science**

#### **Additional Requirements**

- MATH 232, 233, 383;<sup>8</sup> PHYS 116 [or 118](#), and 117 [or 119](#)

### **B.S. Major in Chemistry: Biochemistry Track**

#### **Additional Requirements**

- MATH 232, 233, 383;<sup>8</sup> PHYS 116 [or 118](#), and 117 [or 119](#)

### **B.S. Major in Chemistry: Polymer Track**

#### **Additional Requirements**

- MATH 232, 233, 383;<sup>8</sup> PHYS 116 [or 118](#), and 117 [or 119](#)

### **Majoring in Computer Science: Bachelor of Science**

#### **Additional Requirements**

- PHYS 116 [or 118](#) and a second science course chosen from BIOL 101/101L, 202, or 205; CHEM 101/101L, 102/102L; GEOL 101/101L; ASTR 101/101L; PHYS 117 [or 119](#)

- A grade of C or better is required in each of COMP 283 (or MATH 381), 401, 410, 411; MATH 231, 232, 233; PHYS 116 [or 118](#); and the second science course.

## **B.A. Major in Education: Elementary Education**

### *Math, Science, and Computer Technology*

*Sciences (three courses from three different departments, at least one with a laboratory)*

- ASTR 101/101L; BIOL 251, 271, 272, 277, 278/278L; CHEM 101/101L; ENEC 108, 201, 202; GEOG 111; GEOL 159; GEOL 103/MASC 101; MASC 314; PHYS 100, 101, [114+04](#)

## **B.A. Major in Education: Middle Grades Education**

### *Science Concentration*

- PHYS 100, 101, or [114+04](#) and laboratory

### *Science Minor*

- PHYS 100, 101, or [114+04](#) and laboratory

## **Majoring in Environmental Health Sciences: Bachelor of Science in Public Health**

### **Additional Requirements**

- PHYS [114+04](#) or [118+16\\*](#), [115+05](#) or [119+17\\*](#) (\* = preferred)

## **Majoring in Environmental Studies: Bachelor of Arts**

All General Education requirements must be satisfied, some with specific courses:

- CHEM 101/101L or PHYS 104 [or 114](#) (Approaches physical and life sciences requirement)
- CHEM 102/102L or PHYS 105 [or 115](#)

## **Majoring in Environmental Science: Bachelor of Science**

### **Additional Requirements**

- PHYS 116 and 117, [or PHYS 118 and 119](#), or PHYS 104 and 105 with approval from major advisor

## **B.S. Major in Geological Sciences: Concentration in Earth Science**

### **Additional Requirements**

• One of the following courses: PHYS 104 or ~~104L~~ [114 \(with appropriate transfer credit\)](#) or 116 [or 118](#)

• One of the following courses: BIOL 101/101L; any CHEM above 102; PHYS 105 or ~~105L~~ [\(with appropriate transfer credit\) 115](#) or 117 [or 119](#)

### **B.S. Major in Geological Sciences: Concentration in Environmental Geology**

#### **Additional Requirements**

• One of the following sets of courses: PHYS 104 and 105, [or PHYS 114 and 115](#), or PHYS 116 and 117, [or PHYS 118 and 119](#)

### **B.S. Major in Geological Sciences: Concentration in Geophysics**

#### **Additional Requirements**

• PHYS 116 [or 118](#), 117 [or 119](#), 201, 211, and 331

### **B.S. Major in Geological Sciences: Concentration in Paleobiology**

#### **Additional Requirements**

• ~~Either~~ PHYS 104 or ~~104L (with appropriate transfer credit)~~ [114](#) or 116 [or 118](#)

### **Majoring in Mathematics: Bachelor of Science**

#### **Additional Requirements**

• PHYS 104 and 105, or [114 and 115](#), or 116 and 117, [or 118 and 119](#)

### **B.S. Major in Mathematics: Applied Option**

#### **Additional Requirements**

• PHYS 116 [or 118](#), and 117 [or 119](#) (or 104 and 105, [or 114 and 115](#), but 116/[117 or 118/119](#) ~~and 117~~ are highly recommended)

### **Majoring in Nutrition: Bachelor of Science in Public Health**

#### **Additional Requirements**

• PHYS ~~114~~[104](#) or ~~117~~[116](#)

• PHYS ~~115~~[105](#) or ~~118~~[117](#)

## **Majoring in Psychology: Bachelor of Science**

### **Additional Requirements**

- At least four additional nonpsychology physical and life sciences courses, including one with a laboratory and one physical science course chosen from ASTR 101, 205; BIOC 107, 108; CHEM 70, 71, 72, 101, 102, 102H, 200; ENEC 202; GEOG 110, 111, 212; GEOL 70–77, 101, 103, 105, 109, 110, 111, 202, 204, 413, 478, 503, 506, 563; MASC 505, 506, 552, 561, 563; MUSC 51; PHIL 150; PHYS 51, 53, 54, 61, 63, 71, 100, 101, 104, 105, [114](#), [115](#), 116, 117, [118](#), [119](#), 131

## **Majoring in Radiologic Science: Bachelor of Science**

- Six courses in the physical and life sciences are required: BIOL 101/101L and 252/252L; CHEM 101/101L or BIOC 107/107L; PHYS 104/~~104L~~ and 105/~~105L~~ or [PHYS 114 and 115](#); and PSYC 101.

\* MATH 231 is a prerequisite for PHYS 114 (see above). If By-Examination (BE) or transfer credit is awarded for PHYS 104 and 105, then MATH 130 may be used for the Foundations quantitative reasoning requirement. If students plan to take PHYS 114 at UNC–Chapel Hill, then MATH 231 is required for the Foundations quantitative reasoning requirement.