

# Suggested Study Plan For B.S. Biochemistry Major

See ACS Certification Option\*

<b>Freshman Year</b>	
<u>Fall</u>	<u>Sem. Hours</u>
CHE 111, 112 General Chemistry I <sup>F,S,Su</sup>	4
CHE 170 Engaging in Chem&Biochem	1
BIO 111 Principles of Biology I <sup>F,S,Su</sup> (GLS)	4
MAT 151 PreCalculus II <sup>F,S,Su</sup> or MAT 190	3
ENG 101 (GRD1)	3/15

<b>Freshman Year</b>	
<u>Spring</u>	<u>Sem. Hours</u>
CHE 114, 115 General Chemistry II <sup>F,S,Su</sup>	4
BIO 112 Principles of Biology II <sup>F,S,Su</sup>	4
MAT 191 Calculus I <sup>F,S,Su</sup> (GMT)	3
Reasoning & Discourse (GRD2)	3/ 14

<b>Sophomore Year</b>	
<u>Fall</u>	<u>Sem. Hours</u>
CHE 342 Inorganic Chemistry <sup>F</sup>	3
CHE 351 <sup>F,S,Su</sup> ,353 <sup>F</sup> Organic Chem I & Lab	5
MAT 292 Calculus II <sup>F,S,Su</sup>	3
Historical Perspective (GHP-GMO)	3
Foreign Language (GFL1)	3/17

<b>Sophomore Year</b>	
<u>Spring</u>	<u>Sem. Hours</u>
CHE 352 Organic Chemistry II <sup>F,S,Su</sup>	3
CHE355 Inter Organic Chem Lab <sup>S</sup>	2
PHY 211 General Physics I <sup>F,S,Su</sup>	4
BIO 355 or 392 Cell Biology or Genetics & BIO 375 Lab <sup>F,S</sup>	5
Foreign Language (GFL2)	3/ 17

<b>Junior Year</b>	
<u>Fall</u>	<u>Sem. Hours</u>
CHE 331, 333 Quantitative Analysis <sup>F</sup>	4
CHE 456 Biochemistry I <sup>F</sup>	3
Literature (GLT1)	3
PHY 212 General Physics II <sup>F,S,Su</sup>	4
Foreign Language (GFL3)	3/ 17

<b>Junior Year</b>	
<u>Spring</u>	<u>Sem. Hours</u>
CHE 457, 458 Biochemistry II & Lab <sup>S</sup>	4
Literature (GLT2)	3
Foreign Language (GFL4)	3
Historical Perspective (GHP-GPM)	3
Social/ Behavioral Science (GSB1)	3/16

<b>Senior Year</b>	
<u>Fall</u>	<u>Sem. Hours</u>
CHE 401 Chemistry Seminar <sup>F,S</sup>	P/NP
CHE 406 Physical Chemistry <sup>F</sup>	4
CHE 407 Physical Chemistry Lab <sup>F</sup>	1
Adv. Biochemistry Elective	3
Social/ Behavioral Science (GSB2)	3
Elective	3/14

<b>Senior Year</b>	
<u>Spring</u>	<u>Sem. Hours</u>
CHE 402 Chemistry Seminar <sup>F,S</sup>	1
Adv. Biology Elective	3
Philosophical, Religious, Ethical Prin (GPR)	3
Social/ Behavioral Science (GSB3)	3
Fine Arts (GFA)	3
Elective	13

\*Students completing the BS Biochemistry degree are close to completing the requirements necessary to have the degree certified by the American Chemical Society. By completing a) the Adv Biochem Elective (excluding BIO494) and either two credits of research or two other advanced labs OR b) 4 credits of undergraduate research, the degree will be certified.

## Major Requirements

CHE 111\*, 112\*, 114, 115, 331, 333, 342, 351, 352, 353, 355, 401 (audit), 402, 406, 407, 456, 457, 458

## Related Area Requirements

1. MAT 191\*, 292
2. BIO 111 and 112, and either BIO 355 or BIO 392, BIO 375 Lab
3. PHY 211\*, 212 or 291\*, 292
4. Advanced Biochemistry Elective or Independent Study (2-3 hours): CHE 442, 481, 431, 436, 453, 455, 470B or BIO 494, or one of the following independent study courses: CHE 491, 492; BIO 499; KIN 475; NTR 427; PHY 495
5. Advanced Biological Science Elective (3-4 hours) one or more of the following: 277, 424, 464, 477, 479, 481, 494 (strongly recommended if not used as Advanced Biochemistry elective), 478, 485, 495, 482; PHY 443

**IT IS EXTREMELY IMPORTANT TO CONSULT FREQUENTLY WITH YOUR ADVISOR TO ARRANGE PROPER SCHEDULING OF COURSES AND TO LEARN ABOUT ANY CURRICULAR OR SCHEDULING CHANGES FOR REQUIRED COURSES.**

## FOOTNOTES FOR B.S. BIOCHEMISTRY STUDY PLAN

1. All BS Biochemistry majors must complete mathematics at least through MAT 291 Calculus II. Depending upon the individual mathematics background\*, some students may start with MAT 150 rather than MAT 151 and extend the sequence of math courses by one semester. MAT 190 is a one-semester precalculus course for science majors. Majors are strongly advised to elect additional advanced mathematics courses. A Math Placement Test should be taken. (\*See <http://www.uncg.edu/mat/undergraduate/mathplacetest.html>)
2. If the student is able to begin Foreign Language at the intermediate level in the Freshman Year, a second year of language may not be required. The requirement is Foreign Language through the Intermediate (204) level.
3. The sequence listed here for meeting the General Education Requirements (GEC) and College Additional Requirements (CAR) (identified by capital letters in parentheses) is a suggestion only and may be arranged to fit each student's particular situation. Note: Four Writing Intensive, two Speaking Intensive, and four Global (including one nonwestern) marker courses must be completed.
4. Only Chemistry, Biology, and Related Area Requirement courses in which grades of C- or better are earned will be counted toward the major. A grade of C- must be earned in a prerequisite course before taking the subsequent course within these areas.
5. All students must complete either BIO 355 Cell Biology or BIO 392 Genetics. BIO 375 Cell Biology and Genetics Lab is also required.
6. The Advanced Biochemistry requirement may be satisfied by completion of CHE 481, 431, 436, 453, 470B or of 3-4 credits Independent Study: CHE 491 or CHE 491-492 (3 credits in one semester or 3-4 credits spread over two semesters); or BIO 494 (Intro. Biotechnology, 4 credits). As an alternative to CHE 491-492, students may arrange to conduct independent study with selected faculty in the following departments: Biology; Nutrition and Foodservice Systems; Physics; Exercise and Sport Science (see advisor for additional information).
7. It is not necessary to wait until the senior year to begin the Advanced Biology Elective requirement. Select 3-4 credits from the following courses: BIO 277 (Mammalian Physiology with lab), BIO 494 (Introduction to Biotechnology; strongly recommended if not used as Advanced Biochemistry Elective), BIO 481 (Microbiology with lab), BIO 424 (Plant Physiology and Molecular Biology with lab), BIO 464 (Developmental Biology with lab), BIO 477 (Animal Physiology), BIO 479 (Neurobiology), BIO 478 (Hormones in Action), BIO 485 (Virology), BIO 495 (Advanced Genetics), BIO 482 (Molecular Biological Approaches to Research); PHY 443 (Biophysics).