

BIOCHEMISTRY MAJOR (BA/BS) CHECK LIST

UNIQUE REQUIREMENTS

- ___ Biology 141- Introduction Biology I
- ___ Biology 142- Introduction Biology II
- ___ Biology 251- Introduction to Genetics
- ___ Biology 253- Introduction to Cell Biology

NO MINOR IS REQUIRED FOR THIS MAJOR

CHEMISTRY REQUIREMENTS

- ___ Chem 102- Introductory Chem I
- ___ Chem 104- Introductory Chem II
- ___ Chem 251- Organic Chemistry I
- ___ Chem 261- Organic Chemistry Lab I
- ___ Chem 352- Quantitative Analysis
- ___ Chem 370- Physical Chemistry
- ___ Chem 454- Biochemistry of Macromolecules
- ___ Chem 456- Biochemistry of Metabolism and Signaling
- ___ Chem 458- Research in Biochemistry
- ___ Chem 460- Advanced Inorg Chem
- ___ Chem 484- Chemistry Seminar

MATH REQUIREMENTS

- ___ Math 253- Calculus I
- ___ Math 254- Calculus II

PHYSICS REQUIREMENTS

- ___ Physics 140/180- Physics I
- ___ Physics 141/181- Physics II
- ___ **Total of 56 Credits**

REQUIRED COURSES FOR THE ACS CHEMISTRY MAJOR (BA/BS)

Note: This document is not legally binding: it is intended only to give guidance in planning one's program.

NO MINOR IS REQUIRED FOR THIS MAJOR

CHEMISTRY UNITS REQUIRED (36 UNITS)

Course #	Course Title	Units	Prerequisites
CHEM 102	Introductory Chemistry	5	MATH 141 (C or better) or waiver thereof.
CHEM 104	Introductory Chemistry	5	CHEM 102
CHEM 251	Organic Chemistry	3	CHEM 104
CHEM 261	Organic Chemistry Lab	2	Co-requisite: CHEM 251
CHEM 352	Quantitative Analysis	5	CHEM 104
CHEM 370	Physical Chemistry	3	CHEM 352; Co-requisites: MATH 254 and PHYSICS 181/141
CHEM 454	Biochemistry of Macromolecules	3	Biol 120 or 141 (C or better) and CHEM 251
CHEM 456	Biochemistry of Metabolism and Signaling	3	Biol 120 or 141 (C or better) and Chem 251; Both Biol 251 and Biol 253 or Chem 454
CHEM 458	Research in Biochemistry	2	Biol 120 or 141 (C or better) and CHEM 251; Coreq: Chem 454 or Chem/Biol 456
CHEM 460	Advanced Inorganic Chem	4	CHEM 252, 261, and 352 (Coreq: CHEM 371)
CHEM 484	Chemistry Seminar	1	Consent of Instructor

REQUIRED COURSES FOR THE ACS CHEMISTRY MAJOR (BA/BS)

MATHEMATICS UNITS REQUIRED (10 UNITS)

<u>Course #</u>	<u>Course Title</u>	<u>Units</u>	<u>Prerequisites</u>
MATH 253	Calculus and Analytic Geometry I	5	MATH 152
Math 254	Calculus and Analytic Geometry II	5	MATH 253

PHYSICS UNITS REQUIRED (10 UNITS)

<u>Course #</u>	<u>Course Title</u>	<u>Units</u>	<u>Prerequisites</u>
PHYSICS 140 or PHYSICS 180	Principles of Physics I Physics for Scientists and Engineers I	5	Coreq. MATH 152 Coreq. MATH 253
PHYSICS 141 or PHYSICS 181	Principles of Physics II Physics for Scientists and Engineers II	5	Prereq: PHYSICS 140 Prereq: PHYSICS 180 Coreq: MATH 254

BIOLOGY UNITS REQUIRED (UNIQUE REQUIREMENTS) (10 UNITS)

<u>Course #</u>	<u>Course Title</u>	<u>Units</u>	<u>Prerequisites</u>
BIOLOGY 141	Introductory Biology I	5	Coreq. MATH 141
BIOLOGY 142	Introductory Biology II	5	Prereq: Biology 141 (C or better)
BIOLOGY 251	Introduction to Genetics	5	Prereq: BIOLOGY 141, 142 and CHEM 102, (C or better in all).
BIOLOGY 253	Introduction to Cell Biology	5	Prereq: BIOLOGY 142 and CHEM 102, (C or better in both). Coreq: CHEM 104.

REQUIRED COURSES FOR THE ACS CHEMISTRY MAJOR (BA/BS)

Select 6 units from the courses below with at least one course including a lab component (denoted by #)

Subject/Course	Credit Hours
Chemistry	
Chemistry 252 – Organic Chemistry II	3
#Chemistry 262 – Organic Chemistry Laboratory II	2
Chemistry 371 – Physical Chemistry II	3
#Chemistry 470 – Experimental Physical Chemistry	2
#Chemistry 471 – Experimental Physical Chemistry	2
Chemistry 455 – Advanced Organic Chemistry	3
#Chemistry 480 – Instrumental Methods of Analysis	4
#Chemistry 498 R – Independent Study (research)	1-4
Biology	
#Biology 254 – Biotechnology Laboratory Methods I	2
#Biology 311 – Microbiology	4
#Biology 345 – Animal Physiology	4
#Biology 364 – Biotechnology Laboratory Methods II	2
#Biology 457 – General Ecology	4
Biology 363 – Molecular Biology	3
#Biology 341 – Developmental Biology	4
Biology 317 – Plant Physiology	3
Biology 412 – Immunology	3
Biology 415 – Endocrinology	3
Biology 442 – Environmental Toxicology	3
Biology 446 – Organic Evolution	3
Biology 448 – Bioinformatics	3
#Biology 450 – Introductory Entomology	4