

BIOLOGY, BS

Biology offers courses in the life sciences designed to teach students biological concepts and principles with emphasis on individual laboratory experiences. The curriculum provides a sound basis for professional training in biology, biotechnology, medicine, dentistry, veterinary medicine, allied health, and teaching, as well as for general science education. Biology and Allied Health majors with strong academic backgrounds are encouraged to apply to the Roosevelt Scholars Program, the honors curriculum of the university.

See the Allied Health program listing for degree programs leading to clinical licensing for fields such as Medical Technology, Nuclear Medicine Technology and Radiation Therapy Technology.

The BS in Biology prepares students for jobs in the biotechnology industry, including pharmaceutical companies, university research laboratories, medical research centers, forensic laboratories, museums and government agencies such as the EPA, OSHA, FDA, IDNR, and the Department of Agriculture. It also prepares students to teach biology at the secondary level and for admission to graduate health professional programs such as medical, dental, veterinary and optometry schools, physician assistant, physical therapy, and nurse practitioner training, and graduate programs in the life sciences. All students considering the BS in Biology should consult an advisor in the Department of Biological, Chemical, and Physical Sciences.

Students who plan to teach biology in secondary school may qualify for Roosevelt University's recommendation to the Illinois State Board of Education for teacher certification. This program provides biology majors with the flexibility to teach mathematics and general science as well as biology in grades 6-12. Application for admission to the program must be made to the College of Education before the student begins the senior year (less than 90 credit hours completed). Requirements are listed under secondary teacher education. Students interested in this option should see an advisor in the College of Education for specific course selections.

Standards

Courses taken for the major or minor must be taken on a letter grade basis.

Requirements

- Students must complete the final 30 credit hours of their degree at Roosevelt University.
- A total of 35 credit hours of acceptable biology courses is required for the B.S.
- At least 20 credit hours in acceptable biology, chemistry, and physics courses must be taken at Roosevelt University; not more than 15 credit hours of acceptable biology courses may be completed elsewhere and applied to the BS biology degree.
- Following enrollment, completion of all remaining biology, chemistry, physics and mathematics course requirements for Biology degrees must be accomplished at Roosevelt University. Under special circumstances, written permission to take required courses elsewhere may be granted by biology advisors.
- Courses in biology must have been taken within the past eight years to be accepted for prerequisites and graduation.
- No more than credit hours total of independent study (BIOL 395 INDEPENDENT STUDY), (BIOL 392 RESEARCH IN BIOLOGY), and internships (BIOL 391 MEDICAL INTERNSHIP, BIOL 393 VETERINARY

INTERNSHIP or BIOL 396 BIOLOGY INTERNSHIP) in biology may be used to fulfill the requirements of the major.

- Technical and/or clinical courses are not acceptable for transfer credit.
- AP biology credit with a score of 3.0 or higher may apply toward the major in biology or the general education requirements after consultation with an advisor.
- AP chemistry with a score of 4 or 5 satisfies the requirements for CHEM 201 with lab.
- For AP physics credit, consult an advisor.
- At least one biology course with a laboratory above BIOL 301 CELLULAR & MOLECULAR BIOLOGY (not including independent research) must be passed with a grade of C- or better.
- A grade of C- is the minimal acceptable grade for a course to be applied to the major and the supporting sequence, or to be acceptable as a prerequisite for subsequent courses.
- A minimum cumulative GPA of 2.0 is required for all course in the major.

Courses Required for the Biology BS

BIOL 201	ORGANISMIC BIOLOGY (with lab)	5
BIOL 202	ECOLOGY, EVOLUTION, AND GENETICS (with lab)	5
BIOL 301	CELLULAR & MOLECULAR BIOLOGY (with lab)	5
CHEM 201	GENERAL CHEMISTRY I (with lab)	5
CHEM 202	GENERAL CHEMISTRY II (with lab)	5
CHEM 211	ORGANIC CHEMISTRY I (with lab)	5
CHEM 212	ORGANIC CHEMISTRY II (with lab)	5
MATH 121	COLLEGE ALGEBRA	3
MATH 122	TRIGONOMETRY AND PRECALCULUS	3
MATH 217	ELEMENTARY STATISTICS	3
MATH 231	CALCULUS I	5
MATH 232	CALCULUS II	5
PHYS 201	INTRODUCTION TO NON-CALCULUS BASED PHYSICS I (with lab)	4
PHYS 202	INTRO TO NON-CALCULUS PHYSICS II (with lab)	4
PHYS 233	CALCULUS-BASED PHYSICS I DISCUSSION	1
PHYS 234	CALCULUS-BASED PHYSICS II DISCUSSION	1

Electives

Select additional biology electives to bring total to a minimum of 35 credit hours:¹

BCHM 354	EXPERIMENTAL METHODS IN BIOCHEMISTRY & BIOTECHNOLOGY	
BCHM 355	BIOCHEMISTRY	
BCHM 357	ADVANCED BIOCHEMISTRY	
BIOL 123	ANATOMY & PHYSIOLOGY I	
BIOL 124	ANATOMY & PHYSIOLOGY II	
BIOL 221	KINESIOLOGY	
BIOL 242	ANIMAL BEHAVIOR	
BIOL 302	DIVERSITY AND EVOLUTION	
BIOL 310	FUNDAMENTALS OF BEHAVIOR NEUROSCIENCE	

BIOL 314	QUANTITATIVE ECOLOGY AND CONSERVATION
BIOL 315	ECOLOGY
BIOL 322	BOTANY
BIOL 323	TROPICAL MARINE BIOLOGY
BIOL 324	MARINE BIOLOGY
BIOL 332	ECOLOGY OF TALLGRASS PRAIRIE
BIOL 339	EVOLUTIONARY PHYSIOLOGY
BIOL 340	APPLICATIONS IN ENVIRONMENTAL SCIENCE
BIOL 350	CANCER BIOLOGY
BIOL 351	GENERAL GENETICS
BIOL 360	MICROBIOLOGY
BIOL 364	PROTEIN STRUCTURE DETERMINATION
BIOL 367	IMMUNOLOGY
BIOL 369	CONSERVATION BIOLOGY: AFRICA
BIOL 371	THE BIOLOGY OF AGING
BIOL 391	MEDICAL INTERNSHIP

General Education, University Writing Requirement, and Electives

Courses to total 120	21
Total Credit Hours	120

¹ Must be selected in consultation with an advisor; at least one 300-level laboratory course beyond BIOL 301 CELLULAR & MOLECULAR BIOLOGY

General Education Requirements

Code	Title	Credit Hours
Academic Communities of Practice		
ACP 101	FIRST YEAR SEMINAR ¹	3
ACP 110	PRIMARY TEXTS	3
ACP 250	FOUNDATIONS FOR CHANGE	3
English Composition ²		
ENG 101	COMPOSITION I: CRITICAL READING & WRITING	3
ENG 102	COMPOSITION II: INTRODUCTION TO ACADEMIC RESEARCH	3
Humanities		
Select 9 credits from the following subject areas: African-American Studies, Art History, English (excluding ENG 101 and ENG 102), History, Languages, Music, Philosophy, Theatre, Speech and Women's and Gender Studies		9
Mathematics		
MATH 110	QUANTITATIVE LITERACY (or above) ³	3
Non-Western requirement		
Non-Western course (can be used for Humanities or Social Sciences general education requirements)		3
RU mission-related course ²		
LIBS 201	WRITING SOCIAL JUSTICE	3
Science		

One biological science and one physical science required (at least one must be a four-hour lab (not applicable for science majors)) 7-8

Social Sciences

Select 9 credits from the following subject areas: African-American Studies, Anthropology, Economics, History, Journalism, Philosophy, Political Science, Psychology, Sociology and Women's and Gender Studies 9

Total Credit Hours 49-50

¹ Required for students who enter RU with fewer than 12 credit hours

² Minimum grade of C- required

³ Math, Computer Science & Technology, and Science majors have different requirements—see advisor

These quantitative requirements also apply to degrees in the College of Arts and Sciences:

- Students may apply no more than 60 credit hours of 100-level courses toward the degree.
- Students must apply no fewer than 60 credit hours of 200- and 300-level courses toward the degree.
- Students must have at least 18 credit hours (of the 60 credit hours above) at the 300 level.
- Students may transfer in no more than 66 credit hours from community colleges.
- Students must take their final 30 hours at Roosevelt University. Note that some majors have additional requirements for RU hours.
- Students must have a grade point average of 2.0 or higher to graduate. Note that some majors have additional GPA requirements.
- Students must have a minimum of 90 hours in Arts and Sciences.
- Students may apply no more than 51 hours in the major (BA) or 57 hours in the major (BS)

Your degree map is a general guide suggesting courses to complete each term on the academic pathway to your degree. It is based on the most current scheduling information from your academic program. Your program's degree map is reviewed annually and updated as schedules change (although you retain the same course requirements as long as you are continuously enrolled in your degree program).

Always work closely with your academic advisor to understand curriculum requirements and scheduling, as each student's academic plan can look slightly different.

Year 1

Fall	Credit Hours	Spring	Credit Hours
ACP 101	3	ACP 110	3
CHEM 201	5	BIOL 201	5
ENG 101	3	CHEM 202	5
MATH 121	3	ENG 102	3
		14	16

Year 2

Fall	Credit Hours	Spring	Credit Hours
BIOL 202	5	BIOL 301	5
CHEM 211	5	CHEM 212	5
MATH 217	3	MATH 122	3

Humanities #1	3	
	16	13

Year 3

Fall	Credit Hours Spring	Credit Hours
BIOL 3XX with Lab ³	5 ACP 250 or LIBS 201	3
LIBS 201 or ACP 250	3 BIOL 3XX Elective ³	3
MATH 231	5 MATH 232	5
Social Science #1	3 Humanities #2	3
	16	14

Year 4

Fall	Credit Hours Spring	Credit Hours
BIOL 3XX Elective ³	3 BIOL 3XX Elective ³	3
PHYS 201	4 PHYS 202	4
PHYS 233	1 PHYS 234	1
Social Science #2	3 Social Science #3	3
Humanities #3	3 Non-Western Studies Course ⁴	3
	General Elective ¹	3
	14	17

Total Credit Hours 120

- ¹ Or course towards an optional Minor.
- ² Any course at the 200 level within the discipline.
- ³ Any course at the 300 level within the discipline.
- ⁴ This requirement can be fulfilled by other requirements.
- ⁵ One Natural Science course must have a lab.