BIOLOGY - CELLULAR AND MOLECULAR BIOLOGY (BACHELOR OF SCIENCE)

Cellular and Molecular Biology is for those majors who plan graduate study in biotechnology, cell and molecular biology, or biochemistry or who plan to pursue careers in academic, industrial and/or biotechnology settings.

Course	Title	Credits
Jax MIX General Education Curriculum		**41**

The requirements for the major in Biology are:

Course	Title	Credits
Freshman Biology Sequence		
BY 101	Introductory Biology I	3
BY 102	Introductory Biology II	3
BY 103	Introductory Biology Lab I	1
BY 104	Introductory Biology Lab II	1
Biology Core Courses		
BY 322	Genetics (WI)	4
BY 324	Introduction to Evolutionary Biology	3
BY 332	Ecology	4
BY 373	Cell Biology	4
Biology concentration (see requirements below)		**15**
Senior Seminar		
BY 496	Senior Seminar (WI)	1
Freshman Chemistry Sequence		
CY 105	General Chemistry I	3
CY 106	General Chemistry II	3
CY 107	General Chemistry Laboratory I	1
CY 108	General Chemistry Laboratory II	1
Organic Chemistry sequence		
CY 231	Organic Chemistry I	4
CY 232	Organic Chemistry II	4
Mathematics		
Select one of the following:		3-4
MS 113	Precalculus Trigonometry	
MS 125	Calculus I	
or higher		
Computer Science		
CS 201	Introduction to Information Technology	3
Physics Sequence		
PHS 201 & PHS 203	College Physics I and College Physics Laboratory Techniques I	4
PHS 202 & PHS 204	College Physics II and College Physics Laboratory Techniques II	4
Total Hours		**69-70**

The requirements for the concentration in Cellular and Molecular Biology are:

Course	Title	Credits
BY 323	Microbiology	4
BY 450	Molecular Biology	4
BY 300+ Electives		7
Total Hours		**15**

In addition to courses noted below, candidates for graduation must successfully complete all JSU Academic Regulations. **More information about Jax MIX requirements (https://catalog.jsu.edu/undergraduate/jax-mix-requirements/) and Alabama Transfers equivalents (https://catalog.jsu.edu/undergraduate/alabama-transfers-equivalents/) can be found in their respective section of the catalog.**

Freshman

Fall		Hours
Jax MIX Communication: EH Composition sequence		3
BY 101 & BY 103	Introductory Biology I and Introductory Biology Lab I (Jax MIX Inquiry)	4
MS 112	Precalculus Algebra (or higher - Jax MIX Communication)	3
CY 105 & CY 107	General Chemistry I and General Chemistry Laboratory I	4
SSC 101	First Year Experience	0
	Hours	**14**
Spring		
Jax MIX Communication: EH Composition sequence		3
BY 102 & BY 104	Introductory Biology II and Introductory Biology Lab II (Jax MIX Inquiry)	4
CY 106 & CY 108	General Chemistry II and General Chemistry Laboratory II	4
MS 113	Precalculus Trigonometry (or higher)	3
	Hours	**14**

Sophomore

Fall		
Jax MIX Expression: Literature		3
Jax MIX Experience: History sequence		3
CY 231	Organic Chemistry I	4
BY 322	Genetics (WI)	4
	Hours	**14**
Spring		
Jax MIX Expression: Literature		3
Jax MIX Experience: History sequence		3
CS 201	Introduction to Information Technology (or higher)	3
CY 232	Organic Chemistry II	4
BY 373	Cell Biology	4
	Hours	**17**

Junior

Fall		
EH 141	Speech (Jax MIX Communication)	3
PHS 201 & PHS 203	College Physics I and College Physics Laboratory Techniques I [1]	4
BY 332	Ecology	4
BY 450	Molecular Biology	4
	Hours	**15**
Spring		
Jax MIX Experience: Social/Behavioral Science		3
PHS 202 & PHS 204	College Physics II and College Physics Laboratory Techniques II [1]	4
BY 323	Microbiology	4
BY 324	Introduction to Evolutionary Biology	3
	Hours	**14**

Senior		
Fall		
Jax MIX Expression: Fine Arts		3
Biology Concentration Elective		4
Electives		8
	Hours	**15**
Spring		
Jax MIX Experience: Social/Behavioral Science		3
BY 496	Senior Seminar (WI)	1
Biology Concentration Elective		3
Electives		10
	Hours	**17**
	Total Hours	**120**

[1] Student may elect to take calculus-based PHS 221 Physics for Scientists and Engineers I w/Lab (4)/PHS 222 Physics for Scientists and Engineers II w/Lab (4) in place of PHS 201 College Physics I (3)/PHS 202 College Physics II (3).