

# BIOTECHNOLOGY

## Requirements for a Major in Biotechnology

Code	Title	Credits
BI-141	Intro to Cellular and Molecular Biology	4
BI-204	Microbiology	4
BT-375	Tissue Culture	4
BT-376	Biotechnology	4
BT-410	Biotechnology Seminar	1
CH-120 & CH-121	General Chemistry I and General Chemistry II	8
CH-201 & CH-203	Organic Chemistry I (lecture) and Organic Chemistry Laboratory I	5
CH-210	Chemical Analysis: an Introduction to Modern Methods	5
CH-410	Biochemistry I	4
<b>Major Electives</b>		<b>(8 credits)</b>
Select 8 credits from the following electives:		
BI-313	Histology	4
BI-398	Cancer Biology	4
BI-372	Immunology	4
BI-371	Advanced Topics in Cell and Molecular Biology	4
BI-375	Virology	4
CH-350	Medicinal Chemistry	4
CH-202 & CH-204	Organic Chemistry II (lecture) and Organic Chemistry Laboratory II (5)	4
PY-310	Modern Physics	4
CH-411	Biochemistry II	4
BT-377	Fermentation Technology	4
BT-378	Bioinformatics	4
BT-450	Internship in Biotechnology	4
CH-335	Green Chemistry	4
CH-450	Computational Chemistry	4
CH-455	Special Topics in Chemistry (Organometallics in Organic Synthesis)	4
And certain other BI-300, CH-300 and PY-300 level courses with Biotech coordinator approval.		
<b>Ancillary courses</b>		<b>(26 credits)</b>
MA-150	Statistics I	3
MA-190	Pre-calculus (may be waived)	4
MA-200	Calculus I	4
MA-201 or BI-203	Calculus II Genetics	4
Select one of the following:		
EN-252	Technical Writing	3
EN-253	Business Communications	3
CS-120	Microcomputer Applications	3
Select one of the following:		
PY-221 & PY-222	General Physics I and General Physics II (8)	8
PY-241 & PY-242	Physics I (Mechanics) and Physics II (electricity, Magnetism and Optics) (8)	8
<b>Total Credits</b>		<b>73</b>

## Sample Timeline for Completion of Degree

Year One		
Semester One		Credits
EN-101	College Writing I <sup>1</sup>	3
CH-120	General Chemistry I	4
MA-180 or MA-190	Introduction to Functions (LASC QR) <sup>2</sup> or Pre-calculus	3-4
LASC	LASC Elective (HBS)	3
LASC	First-Year Seminar	3
<b>Credits</b>		<b>16-17</b>
Semester Two		
EN-102	College Writing II <sup>1</sup>	3
CH-121	General Chemistry II	4
MA-190 or MA-200	Pre-calculus (LASC QR) or Calculus I	4
BI-141	Intro to Cellular and Molecular Biology	4
<b>Credits</b>		<b>15</b>
Year Two		
Semester Three		
BI-204	Microbiology	4
CH-201	Organic Chemistry I (lecture)	3
CH-203	Organic Chemistry Laboratory I	2
<b>Select One of the Following</b>		<b>3-4</b>
LASC	LASC Elective <sup>3</sup>	3
MA-200	Calculus I	4
<b>Select One of the Following</b>		<b>3</b>
EN-252	Technical Writing	3
EN-253	Business Communications	3
CS-120	Microcomputer Applications	3
<b>Credits</b>		<b>15-16</b>
Semester Four		
LASC	LASC Elective	3
LASC	LASC Elective	3
MA-150	Statistics I <sup>4</sup>	3
<b>Select One of the Following</b>		<b>4</b>
BI-203	Genetics	4
MA-201	Calculus II	4
<b>Select One of the Following</b>		<b>3-5</b>
LASC	LASC Elective	3
CH-202 & CH-204	Organic Chemistry II (lecture) and Organic Chemistry Laboratory II	4
<b>Credits</b>		<b>16-18</b>
Year Three		
Semester Five		
CH-210	Chemical Analysis: an Introduction to Modern Methods	5
PY-221	General Physics I (NSP)	4
LASC	LASC Elective <sup>3</sup>	3
LASC	LASC Elective <sup>3</sup>	3
<b>Credits</b>		<b>15</b>
Semester Six		
CH-410	Biochemistry I	4
PY-222	General Physics II (NSP)	4
LASC	LASC Elective <sup>3</sup>	3

LASC	LASC Elective <sup>3</sup>	3
<b>Credits</b>		<b>14</b>
<b>Year Four</b>		
<b>Semester Seven</b>		
BT-376	Biotechnology	4
BI-440	Advanced Research Experience for Undergraduates	1-6
BI/BT-3XX+	BI or BT Upper Level Elective	4
LASC	LASC Elective <sup>3</sup>	3
LASC	LASC Elective <sup>3</sup>	3
<b>Credits</b>		<b>15-20</b>
<b>Semester Eight</b>		
BT-375	Tissue Culture	4
BI-440	Advanced Research Experience for Undergraduates	1-6
BT-410	Biotechnology Seminar	1-4
LASC	LASC Elective <sup>3</sup>	3
SELECT	LASC or Major Elective	3
<b>Credits</b>		<b>12-20</b>
<b>Total Credits</b>		<b>118-135</b>

<sup>1</sup> EN-101 and EN-102 satisfies LASC writing.

<sup>2</sup> MA-180 requires Accuplacer score of 5 or higher.

<sup>3</sup> The sequence of LASC courses marked with <sup>3</sup> is a suggestion but serves as a reminder that LASC designated courses must be taken to satisfy the LASC requirements.

<sup>4</sup> MA-150 requires an Accuplacer score of 4 or higher.

Course	Title	Credits
<b>Year One</b>		
<b>Semester One</b>		
EN-101	College Writing I <sup>1</sup>	3
CH-120	General Chemistry I	4
MA-180 or MA-190	Introduction to Functions (LASC QR) <sup>2</sup> or Pre-calculus	3-4
LASC	LASC Elective (HBS)	3
LASC	First-Year Seminar	3
<b>Credits</b>		<b>16-17</b>
<b>Semester Two</b>		
EN-102	College Writing II <sup>1</sup>	3
CH-121	General Chemistry II	4
MA-190 or MA-200	Pre-calculus (LASC QR) or Calculus I	4
BI-141	Intro to Cellular and Molecular Biology	4
<b>Credits</b>		<b>15</b>
<b>Year Two</b>		
<b>Semester Three</b>		
BI-204	Microbiology	4
CH-201	Organic Chemistry I (lecture)	3
CH-203	Organic Chemistry Laboratory I	2
<b>Select One of the Following</b>		<b>3-4</b>
LASC	LASC Elective <sup>3</sup>	
MA-200	Calculus I	
<b>Select One of the Following</b>		<b>3</b>
EN-252	Technical Writing	
EN-253	Business Communications	

CS-120	Microcomputer Applications	
<b>Credits</b>		<b>15-16</b>
<b>Semester Four</b>		
LASC	LASC Elective	3
LASC	LASC Elective	3
MA-150	Statistics I <sup>4</sup>	3
<b>Select One of the Following</b>		<b>4</b>
BI-203	Genetics	
MA-201	Calculus II	
<b>Select One of the Following</b>		<b>3-5</b>
LASC	LASC Elective	
CH-202 & CH-204	Organic Chemistry II (lecture) and Organic Chemistry Laboratory II	
<b>Credits</b>		<b>16-18</b>
<b>Year Three</b>		
<b>Semester Five</b>		
CH-210	Chemical Analysis: an Introduction to Modern Methods	5
PY-221	General Physics I (NSP)	4
LASC	LASC Elective <sup>3</sup>	3
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<b>Semester Six</b>		
CH-410	Biochemistry I	4
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<b>Credits</b>		<b>14</b>
<b>Year Four</b>		
<b>Semester Seven</b>		
BT-376	Biotechnology	4
BI-440	Advanced Research Experience for Undergraduates	1-6
BI/BT-3XX+	BI or BT Upper Level Elective	4
LASC	LASC Elective <sup>3</sup>	3
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<b>Credits</b>		<b>15-20</b>
<b>Semester Eight</b>		
BT-375	Tissue Culture	4
BI-440	Advanced Research Experience for Undergraduates	1-6
BT-410	Biotechnology Seminar	1-4
LASC	LASC Elective <sup>3</sup>	3
SELECT	LASC or Major Elective	3
<b>Credits</b>		<b>12-20</b>
<b>Total Credits</b>		<b>118-135</b>

<sup>1</sup> EN-101 and EN-102 satisfies LASC writing.

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<sup>4</sup> MA-150 requires an Accuplacer score of 4 or higher.

Students are required to meet with their department advisor to review their upcoming semester academic choices. A minimum of 120 credits is required for graduation.