

# BIOLOGICAL SCIENCES

## Curriculum Guide for Academic Year 2021-2022

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Students planning to **transfer** to a four-year college or university should refer to the ASSIST web site at [www.assist.org](http://www.assist.org) and **consult a counselor** before beginning a program of study. Please call 562-938-4561 for the LAC, or (562) 938-3920 for PCC to schedule a meeting with a counselor. Students may also wish to visit the Transfer Center on either campus.

Program of study leading to: <b>Associate in Science (A.S.) Degree</b>													
<b>REQUIRED COURSES</b>													
<b>Select courses from the following to total 9-12 UNITS</b>			<b>UNITS</b>										
†	<b>CHEM 2 OR</b>	Elementary Chemistry <b>OR</b>	<b>4.5 OR</b>										
†	<b>CHEM 3</b>	Intro to Gen, Organic and Biochemistry	5										
	<b>LEARN 11/11H OR</b>	Learning and Academic Strategies/Honors <b>OR</b>	<b>3 OR</b>										
	<b>READ 84</b>	Analytical reading	3										
†	<b>STAT 1/1H</b>	Elementary Statistics/Honors	4										
	<b>Subtotal Units</b>		<b>11.5-12</b>										
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%; text-align: center;">In Progress</th> <th style="width: 50%; text-align: center;">Completed Grade</th> </tr> <tr> <td style="height: 15px;"></td> <td style="height: 15px;"></td> </tr> <tr> <td style="height: 15px;"></td> <td style="height: 15px;"></td> </tr> <tr> <td style="height: 15px;"></td> <td style="height: 15px;"></td> </tr> <tr> <td style="height: 15px;"></td> <td style="height: 15px;"></td> </tr> </table>	In Progress	Completed Grade								
In Progress	Completed Grade												
<b>IN ADDITION, complete ONE of the emphasis below:</b>			<b>UNITS</b>										
<b>Marine Science Emphasis</b>													
	BIO 11	Environmental Problems of Man	3										
	BIO 20/20H	Marine Biology/Honors	4										
	BIO 22	The Marine Environment	3										
	GEOL 2	General Geology, Physical	3										
	PGEOG 2	Weather and Climate	3										
	<b>Subtotal Units</b>		<b>16</b>										
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%; text-align: center;">In Progress</th> <th style="width: 50%; text-align: center;">Completed Grade</th> </tr> <tr> <td style="height: 15px;"></td> <td style="height: 15px;"></td> </tr> <tr> <td style="height: 15px;"></td> <td style="height: 15px;"></td> </tr> <tr> <td style="height: 15px;"></td> <td style="height: 15px;"></td> </tr> <tr> <td style="height: 15px;"></td> <td style="height: 15px;"></td> </tr> </table>	In Progress	Completed Grade								
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<b>Terrestrial and Sustainability Emphasis</b>			<b>UNITS</b>										
	BIO 5	Plant Biology	4										
	BIO 11	Environmental Problems of Man	3										
	BIO 30	Wildlife Biology	4										
	GEOL 1/1H	General Physical Geology/Honors	4.5										
	GEOG 10	Intro to Geographic Information Systems	3										
	PGEOG 2	Weather and Climate	3										
	<b>Subtotal Units</b>		<b>21.5</b>										
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%; text-align: center;">In Progress</th> <th style="width: 50%; text-align: center;">Completed Grade</th> </tr> <tr> <td style="height: 15px;"></td> <td style="height: 15px;"></td> </tr> <tr> <td style="height: 15px;"></td> <td style="height: 15px;"></td> </tr> <tr> <td style="height: 15px;"></td> <td style="height: 15px;"></td> </tr> <tr> <td style="height: 15px;"></td> <td style="height: 15px;"></td> </tr> </table>	In Progress	Completed Grade								
In Progress	Completed Grade												
<b>Emphasis continued on next page:</b>													

**UNITS**

**Health Science Emphasis**

**Complete NINE to FOURTEEN (9-14) Units from the following:**

ANAT 1	Human Anatomy	4		
ANAT 41	Anatomy & Physiology	5		
BIO 2	General Microbiology	5		
BIO 60	Human Biology 1	5		
† PHYSI 1	Human Physiology	4		
<b>Subtotal Units</b>		<b>9-14</b>		

**UNITS**

**IN ADDITION, complete SIX (6) Units from the following:**

AH 60	Medical Terminology	3		
BIO 25	Biology and Society	3		
BIO 61	Human Biology 2	3		
COMM 25	Elements of Intercultural Communication	3		
PSYCH 1/1H	Introduction to Psychology/Honors	3		
<b>Subtotal Units</b>		<b>6</b>		
<b>TOTAL UNITS</b>		<b>26.5-35</b>		

For graduation with an **A.A. or A.S. Degree with a major in Biological Sciences:**

- Minimum Unit Requirements:** §Any course that appears on a curriculum guide and the General Education Pattern (Plan A) may fulfill both major and general education requirements (Approved by College Curriculum Committee Spring 2012). For this degree, complete a minimum of 60 units in courses numbered 1-599. Please note that additional elective units may be required to meet this minimum based upon courses selected to fulfill General Education for the Associate Degree.

<b>A.S. Degree</b>	<b>Biological Sciences Major</b>	<b>26.5-35 Units</b>
	<b>General Education/A.S. §</b>	<b>19 Units</b>

- Scholarship:** Maintain an **overall grade point average (GPA) of 2.0** ("C" average) based on all accredited college work applied to the degree, no matter where completed. For this **field of concentration, complete each course above with a grade of "C" or better**, or "P" if course is graded on a P/NP basis.
- Residence for the Degree:** Complete at least 12 semester units of the required 60 semester units in residence at Long Beach City College in order for the college to grant an Associate of Arts and/or an Associate of Science Degree.
- Residence for the Field of Concentration:** Complete fifty percent (50%) or more of the unit requirements for this field of concentration in residence; this means at **least 13.25-17.5 units** of the required 26-35 must be **completed at Long Beach City College**. Credit earned by exam, where applicable, may be included.
- General Education and Proficiency Requirements:** Complete the required A.A./A.S. General Education and Proficiency requirements\*, otherwise known as "Plan A". For Plan A requirements, refer to the general catalog or view it online at <http://osca.lbcc.edu>.
- Complete and submit the degree application form to the Admissions and Records office during your final semester of course work. These forms are available in the Admissions and Records office, or online at <http://admissions.lbcc.edu/>. Refer to the Schedule of Classes (<http://schedule.lbcc.edu>) and click the "Important Dates" link to view the actual deadline for each semester.

### **Career Opportunities**

This field of concentration provides the student with an introductory education to this field, not necessarily career related, ending with the associate degree or partial lower-division preparation for transfer to a baccalaureate degree in the biological sciences.

This **Associate Degree** will provide the student with an introductory education to this field of study, not necessarily career related, but ending with the Associate Degree or a partial lower-division preparation for transfer to a Baccalaureate Degree in the biological sciences.

### **Program Mission and Outcomes**

The department has a multi-fold mission of (1) transfer preparation; (2) preparing students to attain an associate degree; and (3) helping students satisfy biological science prerequisite for various programs at LBCC and other colleges. Students who have matriculated through our programs will be exposed to the scientific method, gain an appreciation for the environment, and become aware of the vital roles of science in our lives. Our courses will also help students to become better 'consumers' of scientific information and increase awareness of personal health.

Student Learning Outcomes:

- Demonstrate the ability to attain the Institutional Student Learning Outcomes (ISLOs).
- Assimilate information from various sources and apply critical thinking to form evidence-based conclusions (scientific method) to issues in the realm of biology, health, and as a consumer in society.
- Demonstrate an understanding of all levels of organismal biology such as morphological, physiological, and developmental.
- Demonstrate knowledge of the importance of the diversity of organisms on earth and their ecological and evolutionary relationships including human impact on other organisms (or the reciprocal) and ecosystems.

### **Legend**

† This course has a prerequisite or recommended preparation. Prerequisite courses must be complete with at least a “C” or “P” grade. Refer to the General Catalog (<http://www.lbcc.edu/cat/index.html>), the Schedule of Classes (<http://schedule.lbcc.edu/>), or the online Credit Course Outline (<http://wdb-asir.lbcc.edu/coursecurriculum/coursedetails/>) for specific prerequisite information.