

**Associate in Sciences - Transfer (AS-T)****Biological Sciences**

The biological sciences study living organisms and fundamental life processes that form the basis for careers in healthcare, research, teaching and related fields. Begin studies toward a bachelor's degree in general or molecular biology, botany, ecology, fisheries, genetics, marine science, soil science, wildlife management or zoology.

**Degree Requirements**

- **Communications:**  
5 credits - ENGL& 101 English Composition I.
- **Quantitative/Symbolic Reasoning Skills:**  
10 credits – MATH& 151\* Calculus I AND MATH& 152\* Calculus II.
- **Humanities and Social Sciences:**  
15 credits – Selected from at least three disciplines on the Distribution List. A minimum of 5 credits in Humanities, and a minimum of 5 credits in Social Science, and an additional 5 credits in either Humanities or Social Science.
- **Diversity:**  
5 credits – From the Diversity Course List. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by 'DIV' attached to the course title. Example: ENVS 150 Environment and Society:DIV.

**Pre-Major Requirements**

BIOL& 221*	Majors Ecology/Evolution: w/Lab	5
BIOL& 222*	Majors Cell/Molecular: w/Lab	5
BIOL& 223*	Majors Organismal Phys: w/Lab	5
CHEM& 161*	General Chemistry w/Lab I	5
CHEM& 162*	General Chemistry w/Lab II	5
CHEM& 163*	General Chemistry w/Lab III	5
CHEM& 261*	Organic Chemistry w/Lab I	5
CHEM& 262*	Organic Chemistry w/Lab II	5
MATH& 146	Introduction to Statistics OR	5
MATH& 153*	Calculus III	

**Suggested Electives**

BIOL& 260	Microbiology	5
CHEM& 263*	Organic Chemistry w/Lab III	5

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at [lowercolumbia.edu/catalog](http://lowercolumbia.edu/catalog).

*Total transferable credits required to earn this degree: 90 with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.*

**Students completing this program should acquire the following skills and abilities:**

- Biology students will become familiar with the (empirical) scientific method of problem solving.
- Majors-level biology students will perform competitively with their peers at four-year institutions or professional programs.

- Majors-level biology students will demonstrate proficiency with life process mechanisms such as biological chemistry; cellular metabolism; heredity, anatomy and physiology of major animal organ systems; plant structure, as well as transport and reproductive function; diversity and classification of organisms; evolution; and ecology.
- Biology students will express ideas and information in writing in a format that is clear and appropriate to a science-literate audience.
- Biology students will apply various techniques and processes using information, data, and situations, to draw logical, rational and ethical and coherent conclusions.
- Major-level Biology students will achieve competency with numbers and graphical skills to interpret and communicate quantifiable information, and apply mathematical and statistical skills in practical and abstract contexts.

**Revised June 2019 (Effective Fall 2019)**

### Planner

The distribution lists are in the LCC Catalog. If you are online, click on the links below:

**Diversity Course List**

**Distribution List**

Fall Quarter			Winter Quarter			Spring Quarter			Summer Quarter		
√	Courses	Crs	√	Courses	Crs	√	Courses	Crs	√	Courses	Crs
	CHEM& 161	5		CHEM& 162	5		CHEM& 163	5		Humanities OR Social Science (choose course that satisfies Diversity)	5
	ENGL& 101	5		*MATH& 142	5		**MATH& 146	5			
	*MATH& 141	5		Humanities OR Social Science	5		Humanities OR Social Science	5			
	<b>Total:</b>	<b>15</b>		<b>Total:</b>	<b>15</b>		<b>Total:</b>	<b>15</b>		<b>Total:</b>	<b>5</b>

\*Prerequisite for Math 150.

\*\*Prerequisite for Math& 151.

Fall Quarter			Winter Quarter			Spring Quarter			Summer Quarter		
√	Courses	Crs	√	Courses	Crs	√	Courses	Crs	√	Courses	Crs
	BIOL& 211	5		BIOL& 212	5		BIOL& 213	5			
	CHEM& 261	5		CHEM& 262	5		CHEM& 263	5			
	MATH& 151	5		MATH& 152	5		MATH& 153 OR	5			

Fall Quarter			Winter Quarter			Spring Quarter			Summer Quarter		
√	Courses	Crs	√	Courses	Crs	√	Courses	Crs	√	Courses	Crs
							MATH& 146				
<b>Total:</b>		<b>15</b>	<b>Total:</b>		<b>15</b>	<b>Total:</b>		<b>15</b>	<b>Total:</b>		

**Notes:**

Program planning is based on information available at the time of preparation. It is the student's responsibility to meet with their LCC advisor *and* for checking specific major requirements of baccalaureate institutions in the year prior to transferring. Consult the LCC catalog for LCC graduation requirements.

Most four-year universities require one year of a single foreign language as a graduation requirement.