

## Biology: Organismal, Ecological & Evolutionary Biology Option

### Bachelor of Science (BS)

# Organismal, Ecological, & Evolutionary Biology Option

The Organismal, Ecological & Evolutionary (OEE) Biology option is designed for students fascinated with the diversity of living things. It serves to prepare students to do graduate work or to seek full-time employment in Botany, Zoology and General Biology. Employment can be found with national and state conservation and resource management agencies, park services, environmental consulting agencies, zoological parks, botanical gardens, public health facilities, etc. This option can be customized to the student's interest in learning more about field biology, botany, zoology, ecology, etc.

#### Becoming Career Ready...

/ Faculty-mentored research and guidance will help you develop the professional skills needed for success in a competitive job market and/or advanced study in graduate and professional programs. Students attend classes in the newly renovated Magill Hall furnished with state-of-the-art equipment.

/ The OEE Biology option prepares graduates for a career paths in research, education, public policy and ecology and evolutionary biology. Example job titles include research scientist, biologist, microbiologist, environmental scientist, biotechnology research assistant and biology professor or instructor.

/ 100% of Southeast programs offer real-world experience. OEE Biology students earn this experience through required 80 hours outside the class room which earn 2 college credits. Faculty advisors in this area are active in research and they involve students in their research. These opportunities give students the potential to conduct, present and publish research carried out with faculty members. OEE Biology students have access to the Miller Reserve Wetlands Restoration project, the Kelso Wildlife Sanctuary and the Reis Biological Research Station.

/ OEE Biology students take rigorous coursework in evolutionary biology, ecology, plant biology, and animal biology which prepares them for advanced study or employment. Students also complete additional course work in oceanography, physics, organic chemistry, geology and calculus in order to qualify them for employment and graduate school.

/ The Biology Club also provides peer-support and guidance for OEE Biology students. Students will meet with their advisor each semester to assess their progress towards post-graduation goals.

/ The path to a successful career starts with you! You can maximize your career development by working closely with Career Services and Southeast faculty – they are here to help you connect your passions, interests and skills to jobs and opportunities in the field. Career Services provides professional career counseling and coaching, resume critiques, practice interviews, job search strategies, career events, networking opportunities and more.

#### Recent Internship and Field Studies Experiences:

- Missouri Department of Conservation
- Open Rivers & Wetland Field Station
- Trail of Tears State Park
- Big Oak Tree State Park
- Fults Hill Prairie Nature Reserve
- Whiterock Nature Preserve, Illinois
- Saltlick Nature Preserve, Illinois
- World Bird Sanctuary
- Army Corps of Engineers
- Black Hills, South Dakota
- St. Louis Zoo, Missouri

#### Graduate and Professional School Matriculation:

- Southeast Missouri State University
- University of Missouri
- Southern Illinois University- Edwardsville

#### Recent Employment Realized:

- Biotechnology Controlled Environment Team at Monsanto
- Missouri Department of Conservation
- Open Rivers & Wetland Field Station
- Trail of Tears State Park
- National Park Service
- Army Corps of Engineers
- Woodland Hills High School
- LAD Foundation

#### Admission Requirements

A college preparatory sequence that includes three years of science (including biology, chemistry, and physics) and mathematics through advanced algebra is encouraged.

#### Special Options with Biology

Southeast offers a Master of Natural Science in Biology.

#### Transfer and Dual Credit Students

If you have dual credit or transfer credit, please visit our transfer course equivalencies guide at [semo.edu/transfercredit](http://semo.edu/transfercredit).

**To learn more**  
 Office of Admissions  
 (573) 651-2590  
[admissions@semo.edu](mailto:admissions@semo.edu)  
[semo.edu](http://semo.edu)

**To explore**  
 the College of Science,  
 Technology, Engineering and  
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[semo.edu/stem](http://semo.edu/stem)

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**Biology: Organismal, Ecological, & Evolutionary Biology Option****Bachelor of Science (BS)**

This is a guide based on the 2021-2022 Undergraduate Bulletin and is subject to change. The time it takes to earn a degree will vary based on several factors such as dual enrollment, remediation, and summer enrollment. Students will meet with an academic advisor each semester and use Degree Works to monitor their individual progress.

**CURRICULUM CHECKLIST**

*"Critical Courses" are italicized and bolded. Data shows that students who have completed this course in the first two years and have earned the noted grade are most likely to complete this program of study.*

**Required Courses:**

\_\_\_ ***BI163 Evolution & Ecology (4)***

\_\_\_ BI173 Cell & Organismal Biology (4)

\_\_\_ ***BI283 Genetics (4)***

\_\_\_ BI389 Career Development in Biology (2)

\_\_\_ CH184 General Chemistry I Lab (1)

\_\_\_ CH185 General Chemistry I (3)

Choose one math course:

\_\_\_ MA116 Precalculus A (3)

\_\_\_ MA137 Precalculus (5)

\_\_\_ MA139 Applied Calculus (3)

\_\_\_ MA140 Analytical Geometry & Calculus I (5)

Choose one additional math course:

\_\_\_ MAxxx Additional math (for which MA116 is a prerequisite) (3)

OR

\_\_\_ MA155 Statistical Reasoning (3)

Experiential Learning Requirement: 2 hours

\_\_\_ BI471-473 Internships in Biology (2)

\_\_\_ BI551-553 Biology Field Studies (2)

\_\_\_ BI563-565 Experience in Museum Curation (1-3)

\_\_\_ BI570 Development of Instructional Materials (1)

\_\_\_ BI589-591 Biological Research (2)

**Organismal, Ecological, & Evolutionary Option Required Courses**

\_\_\_ BI300 Introduction to Evolutionary Biology (3)

\_\_\_ ***BI332 General Ecology (3)***

\_\_\_ BI438 Biogeography (3)

\_\_\_ BO310 Plant Biology (4)

\_\_\_ ZO310 Zoology (4)

**Biology Electives: 7 Hours**

\_\_\_ Any BI, BO, ZO, BT courses, 300 level and above (7)

**General Education Requirements** – some requirements may be fulfilled by coursework in major program

- Social and Behavioral Sciences – 6 hours
- Constitution Requirement – 3 hours
- Written Communication – 6 hours
- Oral Communication – 3 hours
- Natural Sciences – 7 hours (from two disciplines, one to include a lab)
- Mathematics – 3 hours
- Humanities & Fine Arts – 9 hours (from at least two disciplines)
- Additional requirements – 5 hours (to include UI100 for native students)
- Civics examination

**SAMPLE FOUR-YEAR PLAN**

	Fall Semester		Spring Semester	
	Course #	Hrs	Course #	Hrs
<b>FIRST YEAR</b>	UI100	1	BI173	4
	<b><i>BI163</i></b>	<b>4</b>	EN100	3
	CH184/CH185	4	Additional math	3
	MA116/137/139/140	3-5	General Education	3
	General Education	3	General Education	3
<b>Total</b>	<b>15-17</b>	<b>Total</b>	<b>16</b>	
Milestone: achieve a target cumulative GPA of 3.0				
<b>SECOND YEAR</b>	<b><i>BI283</i></b>	<b>4</b>	<b><i>BI332</i></b>	<b>3</b>
	General Education	3	BO310	4
	General Education	3	General Education	3
	General Education	3	General Education	3
	Elective	3	General Education	3
<b>Total</b>	<b>16</b>	<b>Total</b>	<b>16</b>	
Milestone: achieve a target cumulative GPA of 3.0				
<b>THIRD YEAR</b>	BI389	2	BI300	3
	ZO310/010	4	Biology elective	4
	Biology elective	3	Elective	3
	Elective	3	Elective	3
	Elective	3	Elective	2
<b>Total</b>	<b>15</b>	<b>Total</b>	<b>15</b>	
Milestone: achieve a target cumulative GPA of 3.0				
<b>FOURTH YEAR</b>	Experiential Learning Crs	2	BI438	3
	Elective	3	Elective	3
	Elective	3	Elective	4
	Elective	3	Elective	3
	Elective	3		
<b>Total</b>	<b>14</b>	<b>Total</b>	<b>13</b>	
Milestone: achieve a target cumulative GPA of 3.0				

A "Milestone" signifies a significant stage for a student in the completion of a degree.

**Degree requirements for all students:** a minimum of 120 credit hours, completion of the General Education program, and completion of 39 senior division hours (300-599). Refer to the Undergraduate Bulletin or Degree Works for additional graduation requirements for your program.

A minimum 2.00 GPA in the major and overall are required to graduate with a BS degree.

Revised  
2/26/2021