

Biology Department Learning Goals: Survey of 200-Level Courses that Meet Goals

Goal	Goal is a Major Focus Of These Courses	Number of Courses With Goal as Some or Slight Focus
<p>Knowledge Goals: Upon completion of a major in Biology, students will demonstrate an understanding of the following conceptual strands in Biology and related disciplines:</p>		
Matter and energy in organisms	0205, 0219	7
a. Structure of biological molecules		
b. Catalysis and metabolic pathways	0205, 0211, 0221	6
c. Energy conversions in organisms	0205, 0219, 0221	8
Structure-function relationships in cells and organisms		
a. Cell structure and function	0205, 0202, 0223, 0211	5
b. Physiology of multicellular organisms	0211, 0221, 0237, 0239	7
c. Adaptations to the environment	0211, 0219, 0221, 0227	7
Transmission of genetic information in organisms and Populations	0203	6
a. Transmission genetics		
b. Molecular mechanisms of information coding, use, and transfer	0203, 0205	5
c. Population genetics	0201, 0203	5
Evolution and the origin of organismal diversity		
a. Evidence for evolution	0201, 0203, 0202, 0217, 0227	5
b. Processes of evolution	0201, 0203, 0227, 0230	7
c. Patterns of evolution	0203, 0202, 0211, 0227, 0230	6
Structure and function of ecosystems		
a. Intra- and inter-specific interactions	0201, 0202, 0219	6
b. Population growth	0201	8
c. Energy flow in ecosystems	0201, 0219	7
d. Matter cycling in ecosystems	0201, 0219	7
Nature and history of scientific thought	0289	9

Skill Goals:

Upon completion of a major in Biology, students will demonstrate mastery of the following skills:

Formulation of scientific models based on data of biological phenomena	0219, 0203, 0201	9
Evaluation of scientific models	0223, 0203, 0201, 0219	9
Application of quantitative methods to biological problems	0223, 0295, 0201, 0203	7
Written, oral, and multimedia scientific communication	0205, 0201, 0202	11
Retrieval and evaluation of information from Scientific literature, electronic databases, and Online resources		10
Use of scientific instrumentation and information technology	0207, 0203, 0205	10
Use of basic laboratory techniques	0223, 0207, 0205, 0219	9
Self-assessment of knowledge and learning		11

Dispositional Goals:

Upon completion of a major in Biology, students will demonstrate that they have reflected upon:

Their motivation for studying biology	0202	12
The impact of biological studies on the environment and human societies	0289, 0223, 0237, 0239, 0219, 0202, 0200	7

Biology Department Learning Goals: Survey of 300-Level Courses that Meet Goals

Goal	Goal is a Major Focus Of These Courses	Number of Courses With Goal as Some or Slight Focus
<p>Knowledge Goals: Upon completion of a major in Biology, students will demonstrate an understanding of the following conceptual strands in Biology and related disciplines:</p>		
Matter and energy in organisms	0313, 0336	4
a. Structure of biological molecules		4
b. Catalysis and metabolic pathways		3
c. Energy conversions in organisms		4
Structure-function relationships in cells and organisms	0313	4
a. Cell structure and function	0303, 0313	3
b. Physiology of multicellular organisms	0304, 0334	6
c. Adaptations to the environment		5
Transmission of genetic information in organisms and Populations		4
a. Transmission genetics	0336	3
b. Molecular mechanisms of information coding, use, and transfer		6
c. Population genetics		5
Evolution and the origin of organismal diversity		5
a. Evidence for evolution	0334	5
b. Processes of evolution		5
c. Patterns of evolution		6
Structure and function of ecosystems	0303, 0304, 0334	3
a. Intra- and inter-specific interactions	0304	3
b. Population growth	0304	3
c. Energy flow in ecosystems	0304	3
d. Matter cycling in ecosystems		2
Nature and history of scientific thought		

<p>Skill Goals: Upon completion of a major in Biology, students will demonstrate mastery of the following skills:</p>		
Formulation of scientific models based on observation of biological phenomena	0336, 0304, 0334	5
Evaluation of scientific models	0336, 0334, 0304	5
Application of quantitative methods to biological problems	0313, 0336, 0304, 0336	5
Written, oral, and multimedia scientific communication	0313, 0304, 0336, 0334, 0332	5
Retrieval and evaluation of information from the Scientific literature, electronic databases, and Online resources	0313, 0336, 0304	6
Use of scientific instrumentation and information technology	0313, 0336, 0322, 0318	8
Use of basic laboratory techniques	0313, 0336, 0322, 0305, 0318, 0304	9
Self-assessment of knowledge and learning skills		5
<p>Dispositional Goals: Upon completion of a major in Biology, students will demonstrate that they have reflected upon:</p>		
Their motivation for studying biology	0313, 0303	5
The impact of biological studies on the environment and human societies	0313, 0303, 0304	5