

# General Education Course Objectives and Learning Outcomes

Course Name: Introduction to Biological Sciences

Course Number: BIOL1014

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**COMMON COURSE OBJECTIVES AND STUDENT LEARNING OUTCOMES THAT ARE OR WILL BE LISTED ON THE SYLLABUS OF EVERY SECTION OF THIS COURSE:**

<i>Course objectives:</i>	Introduction to the major concepts of the biological sciences including the chemical basis of life, cell theory, metabolism, genetics, evolution, and ecological concepts with emphasis relevance to humans.
<i>Student learning outcomes:</i>	<p>Upon completion of the course students should be able to:</p> <ol style="list-style-type: none"> <li>1. explain the nature of scientific investigations,</li> <li>2. recognize and describe the major components of the scientific method and the explanatory properties of fact, hypothesis and theory,</li> <li>3. describe fundamental organismal structure and function (molecular, cellular, tissues organs, metabolism),</li> <li>4. demonstrate knowledge of human reproduction (meiosis and inheritance), growth (mitosis), and development (cell differentiation and gene expression),</li> <li>5. explain the role mutation plays in the development of cancer, antibiotic resistance, adaptation, and speciation,</li> <li>6. apply the principles of ecology (one-way flow of energy, cycling of nutrient) and the impact the human activity has on ecosystems and biodiversity;</li> <li>7. describe the fundamental characteristic of and classify organisms to their respective kingdoms,</li> <li>8. discuss the contributions of biological science to our understanding of disease, medicine, agriculture, environment, and the biodiversity of life on Earth.</li> </ol>

**ADHE ACTS INFORMATION FOR THIS COURSE (IF APPROPRIATE)**

<i>ACTS Course number:</i>	BIOL1004
<i>Copy the ACTS course objectives and learning outcomes:</i>	<p>The student will explain, describe, discuss, recognize, and/or apply knowledge and understanding of the following:</p> <ul style="list-style-type: none"> <li>• Scientific method</li> <li>• Organismal structure and function, including all kingdoms</li> <li>• Cell structure and function</li> <li>• Genetics and reproduction</li> <li>• Ecology</li> <li>• Basic components of evolution and classification</li> <li>• Use of microscope and other lab equipment</li> </ul>

**WHICH ATU GENERAL EDUCATION GOALS DOES THIS COURSE FULFILL? (NO MORE THAN TWO)**

<input type="checkbox"/> Communicate effectively <ul style="list-style-type: none"> <li>○ Written communication</li> <li>○ Oral communication</li> </ul> <input checked="" type="checkbox"/> <u>Think critically</u> <input type="checkbox"/> Develop ethical perspectives <ul style="list-style-type: none"> <li>○ Diversity</li> </ul>
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- Empathy
- Leadership
- Apply scientific and quantitative reasoning
  - Scientific reasoning
  - Quantitative reasoning
- Apply the value of the arts and humanities
- Practice civic engagement

**DESCRIPTION OF HOW THIS COURSE MEETS THE GENERAL EDUCATION GOALS CHOSEN ABOVE (TO BE INCLUDED ON THE SYLLABUS OF EVERY SECTION OF THIS COURSE)**

BIOL1014 fulfills the general education requirement of a science class with a lab. This course meets the general education objective of applying scientific and quantitative reasoning. The activities and assignments in the lecture and lab will regularly utilize the application of the scientific method, data analysis, and scientific reasoning to draw conclusions.