

Alignment Between the University General Education Policy and Student Learning Outcomes Assessment Goals and Objectives

<p>B.3. Physical Sciences</p> <p>Courses: Chemistry 100 (5 units) Chemistry 205 (5 units) Chemistry 215 (6 units) Geology 101 (5 units) Physics 100 (5 units) Physics 103 (5 units) Physics 121 (5 units) Physics 221 (5 units)</p>	
GE Policy	Outcomes Assessment Learning Goals
<p>Physical Sciences courses shall provide instruction in the fundamental rules governing matter in the universe, the methodology by which these rules are studied, and the consequences of the scientific technological development of the physical sciences.</p> <p>a. These courses shall be at an introductory level, provide a breadth of knowledge concerning a major area in the physical sciences, and incorporate supportive facts and concepts from the other major areas in the physical sciences.</p> <p>b. Each course shall include a three-hour laboratory experience reinforcing the experimental basis for scientific inquiry in the physical sciences. These laboratories shall be integrated with the lecture material and provide exposure to the usual techniques and apparatus of the physical sciences.</p>	<p>Upon Completion of this requirement students will be able to:</p> <p>Goal 3: After completion of a course in the B3 area, students will be able to explain some of the most important results of scientific inquiry in the physical sciences. Students will demonstrate a breadth of knowledge concerning a major area in the physical sciences, which also incorporates supportive facts and concepts from other major areas in the physical and/or life sciences. In particular, students will</p> <p>Objectives:</p> <ol style="list-style-type: none"> 1. Demonstrate an understanding of the fundamental rules governing matter and energy in the universe (e.g., some but not necessarily all of the following conservation of mass, 1st and 2nd laws of thermodynamics, mass/energy equivalence, the atomic makeup of matter, the subatomic particles, the elements and periodic table of elements, the basic rules of electricity and the electrical nature of matter and energy, how the laws and theories of physics describe how atoms combine to make molecules, compounds, minerals, rocks, planets, etc. and the physical properties of these substances, how solid, liquid, and gaseous substances combine to form the lithosphere, hydrosphere, and atmosphere, or extraterrestrial objects, how physical materials are naturally recycled (the rock cycle, the hydrologic cycle), ...). 2. Demonstrate an understanding of the experimental basis for scientific inquiry in the physical sciences. 3. Demonstrate familiarity with the usual techniques and apparatus of the physical sciences (e.g., measurement

techniques, titration, ...)

4. Utilize the scientific method to design simple experiments and to collect, analyze and evaluate physical science data in a lab or field setting.