

General Education Learning Outcomes: Assessment Tools

Mathematics and Natural Science

Date: 5-2-2021

<p>Program Learning Outcomes</p> <p>Knowledge, skill, or behavior students can demonstrate upon completion</p>	<p>Measurement Tool</p>	<p>Timeline/Frequency of Assessment</p>	<p>Target</p>	<p>Review</p>
<p>1</p> <p>In general education mathematics courses, students will:</p> <p>Develop mathematical and other creative forms of problem-solving skills, understanding that these skills are useful in personal and professional contexts</p>	<p>Indirect assessment within the end of course evaluation using Hope-developed questions linked to learning outcomes for this element</p>	<p>Data collected each semester for annual assessment beginning 2020-21</p>		<p>Results reviewed annually in the fall by the General Education Council beginning in 2021</p>
<p>2</p> <p>Understand both the benefits and limitations of mathematical and/or statistical models, particularly in the use of mathematics as the mode of communicating our understanding of the physical world and for the study of human society</p>	<p>Indirect assessment within the end of course evaluation using Hope-developed questions linked to learning outcomes for this element</p>	<p>Data collected each semester for annual assessment beginning 2020-21</p>		<p>Results reviewed annually in the fall by the General Education Council beginning in 2021</p>
<p>3</p> <p>In addition to objectives specific to mathematics, GEMS mathematics courses emphasize the practical benefits of effective group work</p>	<p>Indirect assessment within the end of course evaluation using Hope-developed questions linked to learning outcomes for this element</p>	<p>Data collected each semester for annual assessment beginning 2020-21</p>		<p>Results reviewed annually in the fall by the General Education Council beginning in 2021</p>
<p>4</p> <p>In general education science courses, students will:</p> <p>Understand that science is a way of knowing based on observation, classification and hypothesis testing and that it has basic presuppositions and limitations</p>	<p>Indirect assessment within the end of course evaluation using Hope-developed questions linked to learning outcomes for this element</p>	<p>Data collected each semester for annual assessment beginning 2020-21</p>		<p>Results reviewed annually in the fall by the General Education Council beginning in 2021</p>

5	Use critical thinking skills to understand scientific arguments	Indirect assessment within the end of course evaluation using Hope-developed questions linked to learning outcomes for this element	Data collected each semester for annual assessment beginning 2020-21		Results reviewed annually in the fall by the General Education Council beginning in 2021
6	Understand that science is an on-going cross-disciplinary exploration of the physical universe rather than just a collection of facts and that this exploration is limited to certain types of questions and to the use of certain methodologies	Indirect assessment within the end of course evaluation using Hope-developed questions linked to learning outcomes for this element	Data collected each semester for annual assessment beginning 2020-21		Results reviewed annually in the fall by the General Education Council beginning in 2021
7	Engage in experimentation in the laboratory and field and/or in the observation of natural phenomena	Indirect assessment within the end of course evaluation using Hope-developed questions linked to learning outcomes for this element	Data collected each semester for annual assessment beginning 2020-21		Results reviewed annually in the fall by the General Education Council beginning in 2021
8	GEMS science courses will provide students with an opportunity to explore the human dimensions of science and technology; for example, the ways in which science and technology impact natural and social environments and the ways in which science and technology are impacted by social, ethical or political change	Indirect assessment within the end of course evaluation using Hope-developed questions linked to learning outcomes for this element	Data collected each semester for annual assessment beginning 2020-21		Results reviewed annually in the fall by the General Education Council beginning in 2021
9	In addition to objectives specific to scientific study, students in GEMS science courses will practice oral and written communication skills in order to convey ideas and to work effectively in groups	Indirect assessment within the end of course evaluation using Hope-developed questions linked to learning outcomes for this element	Data collected each semester for annual assessment beginning 2020-21		Results reviewed annually in the fall by the General Education Council beginning in 2021