**Natural Science: Physical Science**

**Goals:**

Students understand the principles, theories, and methods of modern science, the relationship between science and technology, the implications of scientific discoveries and the potential of science and technology to address problems of the contemporary world.

**Expected Learning Outcomes:**

1. Students understand the basic facts, principles, theories, and methods of modern science.
2. Students understand key events in the development of science and recognize that science is an evolving body of knowledge.
3. Students describe the inter-dependence of scientific and technological developments.
4. Students recognize social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.

***Scoring Rubric:***

Assessment of Natural Science: Physical Science Courses

This scoring rubric is designed to help instructors and members of relevant committees assess how well students are meeting the ELOs as reflected in end-of-course reflection assignments. Students are not expected to have acquired all the knowledge, skills, and attitudes/perspectives listed under the various ELOs in order to complete the assignment satisfactorily. At a minimum, students are expected to meet Milestone 2.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Capstone(4) | Milestone (3) | Milestone(2) | Benchmark (1) |
| **(ELO1)** **Students understand the basic facts, principles, theories, and methods of modern science.**  | Student demonstrates sophisticated understanding of the basic facts, principles, theories and methods of modern science. | Student demonstrates adequate understanding of the basic facts, principles, theories, and methods of modern science. | Student demonstrates partial understanding for the basic facts, principles, theories, and methods of modern science. | Student demonstrates surface understanding of the basic facts, principles, theories, and methods of modern science.  |
| **(ELO2)** **Students understand key events in the development of science and recognize that science is an evolving body of knowledge.**  | Student demonstrates superior understanding of key events in the development of science. Student understands how these events contributed to the evolution of science as a body of knowledge and that scientific study will continue to change. | Student understands the most important events in the development of science. Student recognizes that science is a body of knowledge that changes and evolves. | Student demonstrates partial understanding of the development of science. Student demonstrates some understanding that science is an evolving body of knowledge.  | Student demonstrates surface understanding of key events in the development of science and demonstrates limited recognition that science is an evolving body of knowledge.  |
| **(ELO3)** **Students describe the inter-dependence of scientific and technological developments.**  | Student demonstrates a sophisticated understanding of and ability to describe the relationship between scientific and technological developments. | Student adequately describes the inter-dependent of scientific and technological developments.  | Student demonstrates an understanding of the connection of scientific and technological developments and attempts to describe their inter-dependence.  | Student demonstrates surface understanding of the inter-dependence of scientific and technological developments.  |
| **(ELO4)****Students recognize social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.**  | Student demonstrates a superior understanding of the social and philosophical implications of scientific discoveries. Student also demonstrates a sophisticated comprehension of the issues of the modern world and how science and technology have the potential to address these issues.  | Student demonstrates adequate understanding of the impact of scientific discoveries, and how these discoveries could potentially address problems of the contemporary world.  | Student demonstrates some recognition for the implications of certain scientific discoveries. Student demonstrates partial understanding of how science and technology have the potential to address problems of the contemporary world.  | Student demonstrates a limited recognition for the social and philosophical implications of scientific discoveries. Student has surface understanding of the problems of the contemporary world and how the potential for science and technology to address these problems.  |