Curriculum Committee Resolution 23/24-16

Date: May 8, 2024
To: St. Olaf Faculty
From: Curriculum Committee
Re: Modifications to the Natural Science (NTS) OLE Core Intended Learning Outcomes (ILOs)

The Curriculum Committee will move the following changes to the ILOs for the Natural Science OLE Core.

In anticipation of Assessing the NTS ILOs in 2024-25 the Associate Dean and the Chairs in the NSM have reviewed the NTS ILOs, discussing in particular the level and content of the current ILOs. The proposed revision focuses the language to support meaningful assessment and inclusivity across disciplines (e.g. lab science courses in Chem and Bio, field courses in ES and Bio, theory courses in Physics, practical courses in Nursing, Bio and Dance). The revised ILOs are appropriate for 100 level courses across disciplines. In the current form ILOs 1 and 2 are strongly related and ILO 4 encompasses aspirational rather than specific outcomes. These revisions focus our objectives and align courses across disciplines.

Current NST ILOs
Students will:

1. Demonstrate knowledge of content or principles within the natural sciences.
2. Generate and/or test hypotheses using data about the natural world.
3. Communicate ideas and claims using scientific knowledge and data.
4. Integrate scientific knowledge within a context of broader understanding.

Proposed NST ILOs
Students will:

1. Interpret data about the natural world.
2. Communicate ideas using scientific principles and data.

Course Guidelines:
Natural science courses develop an understanding of a specific disciplinary or interdisciplinary field within the natural sciences. These courses examine how science involves subjecting ideas, theories, and hypotheses to experimental tests, and that scientific knowledge is the product of an evolving consensus.

1. Interpret data about the natural world.

Students should have an opportunity to engage regularly with scientific methods. Methods will vary by discipline and topic, but all students should use data to test hypotheses or identify patterns that generate new hypotheses. Data may be obtained from a variety of methods,

including observation, measurement, experimentation, or acquisition of existing datasets. Natural science courses shall include a significant experiential component that allows students to meet these goals. While a dedicated lab section is a practical way to achieve this component; this objective can be met through other formats.

2. Communicate ideas using scientific principles and data.

Students should demonstrate an ability to accurately communicate scientific ideas. This means that students should be able to use scientific language to describe and interpret data, and to think coherently about science. The form of communication depends on the course and activity; some examples include: composing a lab notebook, discussing an investigation with peers or in relation to published literature, reading and responding to scientific writing in popular media, or giving oral or poster presentations. In any format, the communication may rely on graphical and other visual evidence.