

## Core Assessment of Perspectives: Contemporary Issues in Science

Montana State University's general education core curriculum includes a breadth of topics, known as perspectives, that help our students develop three Core Qualities, namely, "Thinker and Problem Solver," "Local and Global Citizen," and "Communicator." This report describes our assessment of the core perspective Contemporary Issues in Science (CS).

### Overview

From the MSU catalog, the rationale for the CS core perspective is:

*Contemporary Issues in Science courses develop familiarity with how scientists apply methods to explore scientific questions and real-world problems, identify and reflect on ethical claims regarding scientific research and its applications to contemporary problems or challenges while acknowledging the conflicting values that underlie these claims, and engage constructively in open discussions about contemporary issues and ethical or moral dilemmas in science.*

The CS core perspective is tied specifically to two of the Core Qualities: "Thinker and Problem Solver," and "Local and Global Citizen."

For our assessment, we chose to review the official course syllabi for a representative group of twelve courses which carry the CS perspective designation. Our review judged the degree to which each course demonstrated adherence to the perspective's focus upon student learning of the methods of scientists, the ethical challenges in scientific research, and the opportunity for open discussion about morality, ethics, and other contemporary issues in science.

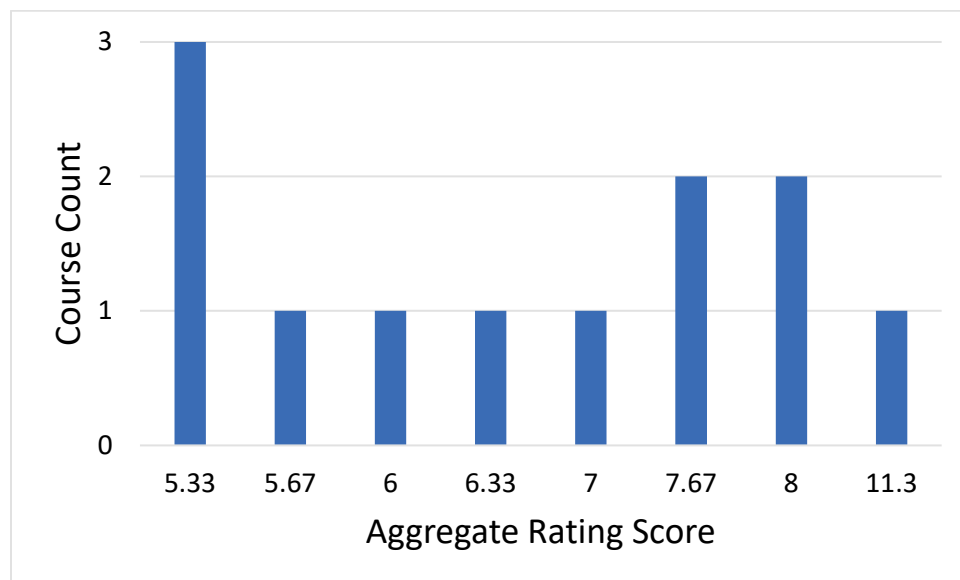
To facilitate our review, we used a Qualtrics survey form with four specific questions, each rated as Exemplary, Average, or Poor:

1. Syllabus integrates the Core Qualities: Thinker and Problem Solvers and Local and Global Citizen in the assignments.
2. Syllabus/Assignments address the aspect of developing familiarity with how scientists apply methods to explore scientific questions and real-world problems.
3. Syllabus/Assignments address identifying and reflecting on ethical claims regarding scientific research and its applications to contemporary problems or challenges while acknowledging the conflicting values that underlie these claims.
4. Syllabus/Assignments address engaging constructively in open discussions about contemporary issues and ethical or moral dilemmas in science.

### Results

Our review panel (Deb Blanchard, Rob Maher, and Steven Swinford) examined the official course syllabi from the MSU Course Information Management (CIM) system, and independently rated each course using the Qualtrics survey questionnaire.

Tallying the average of the three panel scores across the four review questions, the twelve course summary is as follows. A lower score corresponds to a better review rating, e.g., 4.0 would be “Exemplary” rating by the panel in all areas, while a 12.0 would be “Poor” rating in all areas.



The review assessments by the panel were quite consistent overall, although there were instances in which one reviewer rated a particular category “Exemplary” while another reviewer rated the same attribute “Poor.” Generally, these differences were attributable to one reviewer picking up on a particular strength or shortcoming that was not identified by another reviewer.

#### Summary observations:

- The scope of the CS core Perspective courses ranges from biology and nutrition science to modern ethics in computing and technology. Our students have a wide and interesting range of courses from which to choose.
- Courses receiving the best assessment comments have syllabi that express and highlight the Core Qualities (Thinker and Problem Solver, Local and Global Citizen), and tie these Qualities to the course-specific learning outcomes appropriate for the CS core Perspective.
- Most courses had syllabi showing a good tie to the CS core Perspectives, including how scientists explore contemporary, real-world problems.
- Overall, the course syllabi generally showed less attention to identification and reflection on ethical claims in scientific research, and the need for open discussion about ethical and moral dilemmas in science.
- A few courses with the CS core perspective designation appeared to be more focused on *the topic* of scientific inquiry rather than contemporary issues and challenges for ethics and policy. It is not known if this observation indicates an issue with the course itself, or just deficiencies with the syllabus contents.

## Recommendations

The Contemporary Issues in Science (CS) core Perspective syllabi review indicates that the courses in this category are largely achieving the desired Core Perspective learning outcomes and demonstrate the usefulness and effectiveness of this aspect of our Core curriculum. The faculty who teach CS courses are providing good opportunities for our students to show accomplishment in the desired Core Qualities.

We recommend that courses in the CS category have the course coordinator review the Core Perspective learning outcomes and rejuvenate the syllabi distributed to the students with activities and graded assignments that connect directly to the required Perspective attributes. Moreover, we recommend that the course instructors be clear to explain the learning outcomes and the rationale for these goals when introducing the course and when preparing students for graded course learning assessments.

Finally, we recommend that course coordinators focus attention on the learning outcomes associated with this Core Perspective relating to scientific claims, ethics, and moral dilemmas in science, viz.: *“...identify and reflect on ethical claims regarding scientific research and its applications to contemporary problems or challenges while acknowledging the conflicting values that underlie these claims, and engage constructively in open discussions about contemporary issues and ethical or moral dilemmas in science.”*