

Inquiry Natural Sciences (IN) Assessment

May 1, 2023

Every Inquiry course develops familiarity with the methods used to discover and create the factual and theoretical knowledge of various disciplines. Each course will examine particular issues in the discipline while exploring its methodological and theoretical foundations.

Courses in Natural Sciences emphasize a coherent body of scientific principles and the methods scientists use to create knowledge of the natural world (Core Curriculum, Montana State University, 2023).

IN Course Syllabi Assessed: ASTR 110, BIOB 100, BIOB 170, BIOO 262, ENSC 245, EARTH 101, EARTH 201, GEO 111, PHSX 103, and PHSX 201.

Method: Evaluators individually assessed submitted syllabi for the same ten (10) IN courses and addressed four questions as outlined in the following paragraphs. Evaluator responses were tabulated per Qualtrics. The summary was reviewed by the evaluators as a team, and common themes were identified.

Question 1: Does the syllabus reflect the intention of the core perspective definition?

72% yes 12 % no 16 % unclear

Majority (72% Yes) summary: Evaluators said the syllabi clearly articulate the IN core elements and intention. Furthermore, the IN outcomes and correlation to course were explicitly stated in the syllabus. There were some outstanding syllabi that could be used as model examples.

Opportunities for improvement (28% No or Unclear) summary: Evaluators recommend Core Perspective and qualities language be added to each syllabus that lacks it. This will help the students know the course is part of Core. In most cases where it was unclear, there was not enough information to determine how the learning activities support the IN designation.

Question 2: Do the assignment examples permit students to attain the Core Perspective learning outcomes?

Yes 50% No 0 % Unclear 50%

Summary of Yes responses: Evaluators report that as described, assignments will allow for assessment of student attainment of core perspective in one-half the syllabi reviewed. Sample responses: "Assignment provided clearly asks students to demonstrate an understanding of science vs personal opinion." "Inquiry-base approach will engage students in critical thinking and problem solving." "Assignments are linked to the IN learning outcomes." "A comparison question was posted for a writing assignment which demonstrates briefly the learning outcomes."

Notably there were no "No" responses.

Summary of the responses of “Unclear” to Question 2: In most of these cases, no assignments were provided to evaluate, or only method categories were provided. **Sample responses:** “I didn't see assignment examples. I did see methods, e.g., in-class group and online assignments but no content of same.” “Assignment examples are listed by category, not provided by distinct example: <hands-on labs, case studies, assignments, quizzes, exams>”. “Programs should be able to clearly link lab assignments to core perspective”.

Question 3: Highlight areas of strength in how the course supports student attainment of the core perspective.

Summary: Themes are that the course topics are relevant to Core Perspective attainment, course goals and learning outcomes are stated, and the course outcomes align well with IN Core objectives. Strong syllabi were well designed and organized.

Sample responses: “The course is using numerous high impact practices to support learning and the core learning objectives. For example- the importance of attendance (science is done collaboratively) and engaging students in group assignments during class time.”
““What you can expect to learn” in syllabus”. “Students are provided with a detailed description of how specific course elements are connected to the CORE objectives.” “The course appears to be well organized and explicitly states the core learning goals and outcomes.”

Question 4: Highlight opportunities to improve how the course supports student attainment of the Core Perspective.

Summary: Above stated opportunities for improvement were reinforced. **Sample responses:**

“Add syllabus language related to core qualities and perspective. Provide examples of student assessments to demonstrate attainment.”

“Encourage messaging throughout course to remind students how course provides basis to think scientifically and a model that can be applied in non-core coursework.”

“Update the syllabus to include the CORE designation (XXXX 201IN) and reference IN core learning objectives.”

“Include a description of in-class activities that accomplish the core objectives.”

Other Evaluator comments not tied to Core Perspective IN:

“Small suggestion- you are asking students to get a doctors note if sick- MSU Health will not provide documentation.”

“Open access textbook use for course is laudable approach”

“This core has been taught by different NTT's and may have experienced some "drift" away from the original core learning objectives.”

“I note that the original instructor listed in CIM has changed. Does this need to be updated?”

“I appreciate the instructor starting with a land acknowledgement- well done.”