

Assessment Plan

Western Michigan University

Mallinson Institute for Science Education

Mission Statement: The Mallinson Institute for Science Education is a research-oriented unit that is devoted to science education and to the study and improvement of how people teach and learn science. Science education as an academic discipline lies at the intersection between science, education, cognitive psychology, and the history, philosophy, and sociology of science. It ranges from concerns about practical teaching techniques to fundamental questions about the nature of science and how people learn. The mission at MISE is to:

- ? Prepare expert science teachers at the k-16 level;
- ? Conduct research in the learning sciences for the purpose of improving science achievement at the k-16 levels;
- ? Prepare future researchers in the learning sciences for the purpose of improving science achievement at the k-16 levels.

Outcome: Hist/Phil-6140-1

Students will become familiar with the historical and philosophical aspects of science.

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Evaluated as part of SCI 6140

Means of Assessment			
Assessment Method	Criterion	Schedule	Active
The means by which we will determine the objective is met.	What is the desired outcome	How often will be measure be collected	Yes

Outcome: Hist/Phil-6140-2

Students will critically reflect on the nature and practice of science.

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Evaluated as part of SCI 6140

Outcome: Hist/Phil-6140-3

Students will gain insight into the relevance of history and philosophy of science for the teaching of science.

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Evaluated as part of SCI 6140

Outcome: Hist/Phil-6140-4

Students will develop and refine their skills as critical thinkers and writers.

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Evaluated as part of SCI 6140

Outcome: Hist/Phil of Sci Ed-6150-1

Students will become familiar with several important issues in science education from historical and philosophical perspectives.

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Evaluated as part of SCI 6150

Outcome: Hist/Phil of Sci Ed-6150-2

Students will critically reflect on why teach science.

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Evaluated as part of SCI 6150

Outcome: Hist/Phil of Sci Ed-6150-3

Students will critically reflect on what science knowledge is most important for students to know.

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Evaluated as part of SCI 6150

Outcome: Teaching-6180-1

Students will develop skills of reflection necessary for continued improvement of teaching practices

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Evaluated as part of SCI 6180 and yearly SPAR

Outcome: Teaching-6180-2

Students will develop an understanding of scientific inquiry and the nature of science and their relation to teaching science

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Evaluated as part of SCI 6180 and yearly SPAR

Outcome: Teaching-6180-3

Students will develop an understanding of constructivism as a learning theory and teaching perspective.

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Evaluated as part of SCI 6180 and yearly SPAR

Outcome: Teaching-6180-4

Students will become familiar with current national education reforms associated with post-secondary science

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Evaluated as part of SCI 6180 and yearly SPAR

Outcome: Teaching-6180-5

Students will describe various instructional strategies and rationale for use in the science classroom.

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Evaluated as part of SCI 6180 and yearly SPAR

Outcome: Teaching-6180-6

Students will develop skills in designing, implementing, evaluating, and reflecting upon science lessons to promote higher order and critical thinking skills.

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Evaluated as part of SCI 6180 and yearly SPAR

Outcome: Teaching-6180-7

Students will show awareness of equity and diversity issues in science education

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Evaluated as part of SCI 6180 and yearly SPAR

Outcome: Professional Core

Student will successfully complete MISE core: 6140, 6150, 6160, 6180

Outcome Status: Active

Assessment Evaluation: Minimum of 3.5 GPA for the 4 core courses.

Outcome: Research-1

Student will conduct pre-dissertation research project at a publishable level.

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Evaluated as part of SCI 6170.
Successful seminar presentation at MISE.
Successful conference presentation
Submission to journal for review.

Outcome: Research-2

Student will be able to synthesize a wide range of literature bearing on a single issue and present the synthesis in publishable form

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Evaluated via seminar presentation at MISE requiring faculty approval.

Outcome: Research-3

Student will construct a dissertation research proposal

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Presentation at MISE seminar
Dissertation committee approval

Outcome: Research-4

Dissertation research

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Student will successfully defend dissertation research.

Outcome: Doctoral Program-1

Student received adequate advising.

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Annual doctoral student survey question.

Outcome: Doctoral Program-2

Student received adequate access to courses.

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Annual doctoral survey.

Outcome: Doctoral Program-3

Student received adequate support for conference travel.

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Annual doctoral survey.

Outcome: Doctoral Program-4

Student received adequate financial support for research.

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Annual doctoral survey.

Outcome: Doctoral Program-5

Student received adequate support from thesis committee members.

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Annual doctoral survey

Outcome: Doctoral Program-6

Student received adequate support from dissertation adviser.

Track: Doctor of Philosophy in Science Education

Outcome Status: Active

Assessment Evaluation: Annual doctoral survey.

Outcome: Masters Program-1

Student is satisfied with the master's degree program on the whole.

Track: Master of Arts in Science Education

Outcome Status: Active

Assessment Evaluation: Annual MA student survey

Outcome: Masters Program-2

Student is satisfied with the courses taken for the master's degree program.

Track: Master of Arts in Science Education

Outcome Status: Active

Assessment Evaluation: Annual survey

Outcome: Masters Program-3

Student is satisfied with the instruction received in the master's degree program courses.

Track: Master of Arts in Science Education

Outcome Status: Active

Assessment Evaluation: Annual MA student survey

Outcome: Masters Program-4

Student had convenient access to courses on a timely basis.

Track: Master of Arts in Science Education

Outcome Status: Active

Assessment Evaluation: Annual MA student survey