



## The Mallinson Institute for Science Education

WESTERN MICHIGAN UNIVERSITY

Announcing the new 9-credit

# Graduate Certificate in College Science Teaching

The WMU College Science Teaching Certificate consists of a sequence of three 3-credit hybrid courses. It is for individuals who wish to improve as instructors of science in a college setting. The program is open to current graduate students in science departments and to college-level instructors and faculty of science. It is offered in a hybrid format with minimal face-to-face sessions to accommodate the needs of individuals who have fixed time commitments that would otherwise prevent them from pursuing this opportunity. The first course in the sequence (SCI 6185) is a standalone course that can be taken by anyone wishing to become familiar with the basics of how to teach college level science. It does not presuppose participants are currently teaching science. The second and third (SCI 6186 and SCI 6187) are advanced courses on curriculum and assessment and the theory and practice of college science teaching for those who wish to deepen their understanding.

### Course #1: SCI 6185 (spring, even years) How to Teach Science

This graduate level course is a nuts and bolts introduction to how to teach science at the college level. It is a hybrid course; meeting mainly online, but with some in-person meetings. The course will survey a variety of teaching-related topics, including: how to create a syllabus, how to manage the first day of class, how to create assessments and evaluate learning, how to teach in lecture and laboratory settings, how to prepare and present a lecture, how to lead discussions, how to grade written work, how to evaluate your course, how to handle controversial topics, etc. The course will also include advice on presentation skills, how to improve as an instructor, and how to create a teaching portfolios and curriculum vitae that document your teaching competencies.

### Course #2: SCI 6186 (fall, even years) College Science Curriculum and Assessment

This graduate level course moves beyond the level of instructional approaches found in SCI 6185 to the level of curriculum, with a view to practical application. It is a hybrid course; meeting mainly online, but with some in-person meetings. The course will cover important elements of effective curricula with a key focus on the articulation of learning objectives with instructional activities with assessment. The primary assignment in the course will be the development of an original curriculum for a one semester course determined by the student.

### Course #3: 6187 (spring, odd years) The Theory and Practice of College Science Teaching

This graduate level course provides in depth consideration of teaching and learning for students interested in becoming college teachers of science. It is a hybrid course; meeting mainly online, but with some in-person meetings. The areas of coverage include: Orientations to Teaching Science, Knowledge of Science Curricula, Knowledge of Students' Understanding of Science, Knowledge of Instructional Strategies, and Knowledge of Assessment of Scientific Literacy. Students will extend their practice into research by conducting a small, but original, action research project on their own classroom teaching, which culminates in a final "journal" article describing the process.

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