

Master of Arts in Teaching Biology Specialization in Interdisciplinary Science

OVERVIEW

- ✚ For in-service teachers of grades 4-9
- ✚ Overall goals:
 - Provide math and science knowledge in teachers who have otherwise limited background in these areas
 - Increase math and science process knowledge (e.g. nature of science)
 - Increase math and science pedagogical content knowledge - the ability to know HOW to teach particular content using research based best practices for known misconceptions and problem areas in specific subjects.
 - Enhance the concept of science and mathematics as problem solving tools through an interdisciplinary approach with a particular focus on environmental sustainability and the nature of science.
- ✚ Features
 - Innovative interdisciplinary approach to providing quality instruction for classroom teachers
 - Improved accessibility for classroom teachers (e.g. some online courses and evening scheduling)
 - Increased opportunities for collaboration and communication among teachers who teach at schools that are widely separated geographically
- ✚ Specialization

In order to earn the Specialization in Interdisciplinary Science ALL of the credit requirements must be met (20 hours of core content, 6 hours of interdisciplinary content and 6 hours of educational core)

ADMISSION REQUIREMENTS

- Praxis II content specialization exam (or other equivalent[e.g., NTE, or other Non-Ohio-State-mandated exam), or GRE*
- Valid Teaching Certificate/Licensure (from any State with the United States) and 1 year teaching experience*
- Teacher Educator Dispositions Form to be completed by school administrator who has direct knowledge of applicants teaching
- Completed Application
- Application fee
- Official transcripts from all institutions attended
- 3 letters of recommendation

*Note: If Praxis II (or equivalent) and/or Teaching Certificate/Licensure are not in Biology or General Science another measure of Biology content knowledge will be required during degree program to meet program key assessment requirements for NCATE review.

DEGREE REQUIREMENTS

Core Content (18-20 hours)

Foundations (14 hours)

- Teaching and Learning Biology Fundamentals(BIOL 625) (3 credits)
- Foundations in Earth Science for Teaching and Learning (GEOL) (3 credits)
- Foundations in Environmental Science for Teaching and Learning (ENVS)(3 credits)
- Teaching Evolution and the Nature of Science (BIOL550) (3 credits)
- Biodocumentation (BIOL 601) (1 credit)
- Biodocumentation Seminar (1 credit) (BIOL 602)

Focue: e.g., Curriculum Topic Study/Lesson Study (Choose 2 (2-3 credits each))

- Math 586 Mathematics Lesson Study I – Problem Solving (MATH586)
- Earth Science Curriculum Topic Study (GEOL)
- Life Science Curriculum Topic Study (BIOL)
- Environmental Curriculum Topic Study (ENVH)

These curriculum topic study and lesson study courses focus on specific topics. Additional courses within each content area will be developed based on need of participants and availability of faculty.

Interdisciplinary Content Electives (6 credits required)

- Earth as a System – GLOBE (ENVS 695) (3 credits)
 - Environmental Odysseys (ENVH) (3 credits)
- Additional courses will be added as developed

Educational Core (9-13 hours of professional education coursework, with the following 6 hours of required courses)

- EDFI 677 – Contemporary Theory and Research in Classroom Teaching (3 credits)
- an education practicum designed to meet NCATE key assessments [Practicum assessment of effective practice] (2-3 credits)

In addition:

- complete 35 semester hours of acceptable graduate course work with a cumulative grade point average of 3.0 or better
- Not accumulate more than 7 semester hours of credit below a “B”
- Complete the MAT within 6 years from date of first enrollment
- Write a library research paper which shall require study beyond usual course requirements and demonstrate the student’s ability to interpret and apply research findings in a specific area of study (BIOL602 – may be done in conjunction with COSMOS Action Research)
- Final assessment: presentation of BIOL602 research to appropriate audience, e.g., COSMOS Inquiry series or at professional development meeting.