SHIPPENSBURG UNIVERSITY

School of Graduate Studies

MASTER OF ARTS IN TEACHING IN

Science Education

WITH TEACHER CERTIFICATION

PDE APPROVED

ONLINE MODULES...18 MONTHS...CLASS ONE SATURDAY PER MONTH...YOU CAN DO THIS!

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FINISH IN 18 MONTHS

Take classes ONLINE and meet ONE SATURDAY per month in Harrisburg or Shippensburg

The Master of Arts in Teaching (MAT) in Science Education is an 18-month program leading to both a master's degree as well as teacher certification via the Pennsylvania Department of Education (PDE). It is designed for those who hold a degree in a scientific discipline who wish to teach middle or high school level science.

Program Description

The Master of Arts in Teaching (MAT) in Science Education is designed for professionals and recent college graduates who already hold a degree in a scientific discipline and who wish to teach science in either a middle school or high school. Completion of the program will result in both a master's degree and teacher certification through the Pennsylvania Department of Education.

Apply online at ship.edu/SciEd

Students will complete a sequence of six courses to teach research-based principles of safe and effective science instruction followed by a 12-week student teaching practicum. Students will also complete and present a research project and comprehensive teaching portfolio.

Program Delivery

The 30-credit MAT can be completed in 18 months. It is designed to meet the needs of working professionals by delivering courses through a combination of online interactions, videoconferencing, and face-to-face meetings. Cohorts of 10-15 students will move together through a sequence of six modules. Each module will be three credit hours. Face-to-face meetings will be just one Saturday per month and you can choose between coming to campus in Shippensburg or the Dixon University Center in Harrisburg.

At the beginning of the program, students will be assigned an experienced science teacher in a local school as a mentor and approximately 25 hours of observation and co-teaching per module will be required.

During the 12-week student teaching practicum (12 crs.), students will implement principles from the modules and assume responsibilities for planning, instruction, and assessment. Two capstone projects, a professional portfolio and the results of a research project, will be presented at the end of the program.

The sequence for completing the MAT is as follows: *(assumes a June start; modules and timelines will shift depending on start of sequence)*

- One module during the first summer (3 crs.)
- Four modules during the first academic year (12 crs.)
- One module during the second summer (3 crs.)
- Student teaching during the fall semester of second academic year (12 crs.)
- Presentation of professional portfolio and research project during December of fall semester of second academic year
- Assistance with job placement during the spring semester of the second academic year

MAT Admission Requirements

Applicants must:

- Have earned a bachelor's degree in a scientific discipline from a regionally accredited institution.
- Have official undergraduate and graduate (if applicable) transcripts sent to Shippensburg University.
- Submit a completed application including a statement of intent summarizing their motivations and goals for entering the teaching profession.
- Two letters of recommendation.
- Achieve passing scores on two teacher certification exams that are required by the Commonwealth of Pennsylvania: Pre-Service Academic Performance Assessment (PAPA) and Praxis II Subject Assessment. More information can be found at the Educational Testing Services website (www.ets.org). Applicants may be conditionally admitted if PRAXIS scores are pending.

The MAT is designed for students that already have content expertise in a scientific discipline that is consistent with one or more of the secondary (grades 7-12) licensure areas in the Commonwealth of Pennsylvania: Biology, Chemistry, Physics, Earth and Space Science, Environmental Science, and General Science. Applicants may also pursue Middle Level (grades 4-8) certification. The MAT directors will review each applicant's transcripts and Praxis examination scores as part of the admissions process. Applicants are encouraged to register for the Praxis examinations as soon as possible to ensure that scores are available by the application deadline. Final MAT program admission is contingent upon passing the Praxis examinations.

Course Descriptions

SCED510 Foundations of Science Education in the United States (3 crs.)
Includes the historical and philosophical foundations of secondary education in the United States with particular emphasis on science education (i.e. the nature of science). Current issues such as federal and state educational policies and curriculum standards, standardized testing and accountability, and professional expectations for teachers will also be discussed.

SCED520 Research and Contemporary Issues in Science Education (3 crs.)
Surveys various research approaches in science education including quantitative, qualitative, and mixed methods. Emphasis placed on research characterizing contemporary issues such as inquiry-based instruction, effects of curriculum standards and standardized testing, and nature of science instruction.

Action research (for the purpose of improving one's own practice) included and each student will design a project to be completed and presented as part of the capstone review (SCED590).

SCED530 Instructional Strategies and Technology in Science Education (3 crs.)
Assists the student with understanding the variety of strategies and philosophies behind those strategies for presenting instruction. Specific instructional models related to science education (learning cycle, 5E, and inquiry based instruction) will be utilized. Students develop their own instructional philosophy in concert with the national efforts in the science education field through readings, discussions, classroom observations, plus simulated and real teaching activities. Students will be prepared to design coherent instruction through curriculum design, unit planning and individual daily lessons. Also includes understanding how the instruction/assessment/evaluation process occurs and results in a student grade.

SCED540 Assessment in Science Education (3 crs.)
Includes all facets of the assessment process within the science classroom. Standardized achievement, diagnostic and aptitude tests, and teacher constructed tests will be examined. Emphasis placed on assessing students' conceptual understanding within the sciences through a variety of formative and summative assessment strategies. Also includes understanding how the instruction/assessment/evaluation process occurs and results in a student grade.

SCED550 Safety and Welfare in Science Education (3 crs.)
Surveys the primary safety concerns in science instruction with emphasis on chemical safety, safety equipment and procedures, and legal and ethical considerations for using live and preserved organisms in the classroom and field. Principles and legal requirements for classroom design and how classrooms and laboratories must be modified to accommodate students with learning and physical disabilities also included.

SCED560 Accommodating all Students in Science Teaching (3 crs.)
Examines the intellectual, physical, sensory and social-emotional differences of individuals as they pertain to learning processes. Also addresses the needs of English Language Learners (ELL) in the science classroom and how to best accommodate these students within a science classroom for opportunities to be engaged in all aspects of learning science.

SCED590 Student Teaching and Science Education Practicum (12 crs.)
MAT capstone course consists of two parts: 1) A twelve-week student teaching experience where students assume incrementally more responsibilities for lesson planning, assessment, classroom management, and other teacher-related duties under the guidance of an experienced mentor teacher and a university supervisor. Assignments include a comprehensive unit plan and an assessment portfolio. 2) A four-week period where students complete and present their professional portfolios and action research projects to a panel of secondary science teachers and university professors.

PROGRAM STAFF

Carolyn M. Callaghan, Associate Dean, PCDE, 717-477-1502, pcde@ship.edu

Joe Shane, Associate Professor, Chemistry, 717-477-1572, jwshan@ship.edu

FACULTY

Joseph W. Shane, Ph.D., Curriculum and Instruction (Science Education). Former high school chemistry teacher who currently teaches university-level chemistry and science-specific education courses for pre-service teachers.

Christine Anne Royce, Ed.D., Curriculum, Instruction, and Technology Education (Science Education). Currently serves as the chairperson of the Department of Teacher Education who has an extensive background in middle and high school science instruction and administration.

David F. Bateman, Ph.D., Special Education (Law and Policy). Twenty years experience with teaching special education courses, working directly with schools and teachers, policymakers.

CANCELLATION POLICY

Shippensburg University reserves the right to cancel any courses due to insufficient enrollment or other unforeseen circumstances.

FINANCIAL ASSISTANCE

There are several means to help you defray the cost of attending a graduate program at Shippensburg University. Graduate assistantships provide a tuition waiver plus a stipend and often complement your studies by providing valuable experience that extends to the job market after graduation. Student payroll positions (SPP), with priority given to graduate students, do not include tuition waivers but do provide compensation.

Loans and other forms of financial aid, including scholarships, are available to qualified graduate students. Students scheduled to take at least six credit hours per semester are eligible to apply for a Federal Direct Student Loan at www.studentloans.gov. Please contact the Graduate Office:

717-477-1148
GradSchool@ship.edu
ship.edu/graduate/assistantship

About the University

Shippensburg University has a long and rich tradition of meeting the educational, cultural, social, and economic needs of southcentral Pennsylvania and beyond. With "Learn and Serve" as its guide, the university has provided graduate education for the Commonwealth since the 1950s. Today, 1,000 graduate students are enrolled in master's degree, supervisory certification, and post-baccalaurate programs within three colleges: Arts and Sciences, Business, and Education and Human Services.

Located on 200 acres in Cumberland County, Shippensburg University offers excellent, widely respected, and accredited undergraduate and graduate programs taught by faculty dedicated to student success. More than 8,000 students attend Shippensburg including those enrolled in professional, continuing, and distance education programs.

Shippensburg's programs are accredited by the Middle States Commission on Higher Education, AACSB International, ABET Inc., American Chemical Society, Council on Social Work Education, Council for the Accreditation of Counseling and Related Educational Programs, International Association of Counseling Services, Council for Exceptional Children and by the National Council for Accreditation of Teacher Education.

For More Information

OFFICE OF PROFESSIONAL, CONTINUING, AND DISTANCE EDUCATION STUDIES

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Shippensburg University is an equal opportunity educational institution. Direct requests for disability accommodations and other inquiries to the Office of Disability Services, Horton Hall 120, Shippensburg University, 1871 Old Main Drive, Shippensburg, PA 17257-2299, 717-477-1329, ods@ship.edu.

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