

Teaching and Learning, M.A.T.

Science Education

The Master of Arts in Teaching in teaching and learning with a science education subprogram requires a minimum of 48 s.h. of graduate credit. Students must maintain a program g.p.a. of at least 3.00.

The program is designed primarily for graduates of bachelor's degree programs in science who decide that they would like to become teachers. It features advanced work in science along with the courses required for certification, enabling students to earn a master's degree and teaching certification at the same time. It is assumed that students have completed considerable coursework in science (at least 56 s.h.) as undergraduates, but no previous coursework in education. Students' science coursework should be equivalent to that required by the University of Iowa Science Education program.

Students may need to complete additional courses or other requirements to meet state standards for teacher preparation, licensure, or endorsements.

The M.A.T. in teaching and learning with a science education subprogram requires the following work.

Professional Education Foundation Sequence

Code	Title	Hours
All of these:		
EDTL:3002	Teaching and Learning Technologies (must be taken during student's first semester in the college)	2
EDTL:3091	Secondary Education Program Orientation and Classroom Management	3
EDTL:3095	Teaching Reading in Secondary Content Areas (must be taken during student's first semester in the college)	1
EDTL:4900	Foundations of Special Education	3
EPLS:3000	Foundations of Education	3
EPLS:4180	Human Relations for the Classroom Teacher	3
One of these:		
PSQF:1075	Educational Psychology and Measurement	3
PSQF:6200	Educational Psychology	3
Science education courses taken in the following sequence:		
EDTL:4751	Learning in the Science, Technology, Engineering, and Mathematics (STEM) Classroom	2
EDTL:4752	Secondary Science Methods II with Field Experience	3

These two taken concurrently:

EDTL:4753	Secondary Science Methods III with Field Experience	3
EDTL:4779	Secondary School Science Practicum	2
These three taken concurrently:		
EDTL:4087	Seminar: Curriculum and Student Teaching	3
EDTL:4091	Observation and Laboratory Practice in the Secondary School	6
EDTL:4092	Observation and Laboratory Practice in the Secondary School	6

Electives

A minimum of one graduate course in biology, chemistry, earth science, or physics is required. Students who have satisfied portions of the required science coursework listed above must take additional science coursework to meet the minimum requirement of 48 s.h. of credit.

Comprehensive Examination

Students complete comprehensive examinations before their student teaching semester. Two written comprehensive exams, one in science education and one in a science specialization area, are required. Students may not duplicate course examinations in these areas.

TEP: Secondary Education

Graduate students may be admitted to a program leading to teacher licensure/certification as "certification only" candidates in the Graduate College. They are subject to all Graduate College policies; see the Manual of Rules and Regulations on the Graduate College website. Eligible graduate students also may complete initial teacher licensure/certification requirements by earning an M.A.T. in teaching and learning (science education).

Admission

Applicants must meet the admission requirements of the Graduate College. They must have a bachelor's degree with a major or the equivalent in one of the sciences. A g.p.a. of at least 3.00 is required for admission and must be maintained throughout the program. Applicants must meet all Teacher Education Program (TEP) application requirements.

Combined Program

B.A./M.A.T.

College of Liberal Arts and Sciences students who want to teach science and are working toward a Bachelor of Arts degree with a major in biology, chemistry, environmental sciences, or physics may apply to the combined Bachelor of Arts/Master of Arts in Teaching with a science education subprogram offered by the College of Liberal Arts and Sciences and the College of Education. The combined program enables students to earn a B.A. and an M.A.T. in five years by beginning to earn graduate credit during their fourth year of undergraduate study and by counting up to 19 s.h. of qualifying credit toward both degrees.

B.A. students are admitted to the combined program before their fourth year. They may begin taking education courses during their third year, but they may not earn graduate credit for them until their fourth and fifth years, after they have

been admitted to the combined program. Students take 30 s.h. of coursework during the fifth year and must complete all remaining requirements for both degrees that year.

Science Specialization (Broad Field Science Block)

The following courses are required for the undergraduate degree in science studies at the University of Iowa. They need not be repeated by M.A.T. candidates who need one or more advanced courses in their major science area, or by students from other interdisciplinary science discipline programs that prepare teachers for grades 6-9.

Code	Title	Hours
This course:		
SIED:4135	The Nature of Science	4
Two of these (unless completed during undergraduate study):		
SIED:4102	Societal and Educational Applications of Earth Science and Environmental	4
SIED:4103	Societal and Educational Applications of Biological Sciences	4
SIED:4105	Societal and Educational Applications of Physical Sciences	4
SIED:4106	Societal and Educational Applications of Chemical Concepts	4

Education courses required for the combined program are listed under "Combined Program" above. Requirements for the B.A. degree are listed under the B.A. in biology, B.A. in chemistry, B.A. in environmental sciences, and B.A. in physics (College of Liberal Arts and Sciences) in the Catalog.