The purpose of the department of teacher education and certification is to prepare collaborative, technologically adept, effective educators for a diverse and global society.

You may earn a B.A. or B.S. degree in your chosen field from Missouri S&T and a certificate to teach in the schools of Missouri. The program may be completed in four academic years, although you may wish to carry lighter course loads during the regular academic semesters.

Secondary certification (grades 9-12) may be earned in the following majors: chemistry, physics or biological sciences in the science area; history, economics, or psychology, in the social studies area; English in the language arts area; mathematics in the mathematics area; and business and management systems for business education.

For updated information contact the chair of Missouri S&T’s teacher education and certification department and look on the homepage: http://teachereducation.mst.edu/.

**Elementary Education**

The elementary education program is endorsed by the Missouri Department of Elementary and Secondary Education (DESE). Students will earn a bachelor of arts degree in multidisciplinary studies with a teaching certificate for elementary education. Graduates of this program will have the knowledge of science, technology, engineering, art and mathematics (STEAM) to share with 1st through 6th grade students. Project lead the way launch classroom teacher certification for grades 1-6 is embedded in the emphasis.

**Secondary Education**

Missouri University of Science and Technology is approved by the Missouri State Board of Education to offer professional education programs for purposes of professional certification. Admission to the university does not automatically qualify a student to participate in the professional component of the teacher education program. That participation is granted upon demonstration of a high level of academic and professional competence.

**General Education Requirements**

General education requirements are intended to provide you with the intellectual knowledge and skills for basic education. This body of knowledge and skills is arranged according to two broad categories: systems of symbolic thought and communication represented by linguistic and mathematical studies and systems of intellectual inquiry represented by basic academic disciplines. In addition, you must complete one course or unit in cultural diversity and the general education requirements can be fulfilled at the same time.

The following are generic requirements for all education students. However, any degree requirement not included in these general education requirements must be included in the professional requirements or subject matter requirements for each degree program.

**Symbolic Thought and Communications**

1. **Linguistic Studies** (9 semester hours) You are required to take two courses in written communication and one course in oral communication. You must have a grade of “C” or better in each course.

2. **Mathematical Studies** (3 semester hours) The course must be college algebra or above and you must earn a grade of “C” or better.

**Systems of Intellectual Inquiry**

1. **Humanities** At least one course each from two of the following areas required: art, music, philosophy, literature and theater.

2. **Natural Science** One course in biological sciences and one in physical science is required. One of these two courses must include a laboratory.

3. **Social and Behavioral Science** One course in each of the following areas is required: (1) American History, (2) American Government, and (3) General Psychology.

**Secondary Education Certification**

In addition to the prescribed general educational courses, if you are preparing to become a secondary school teacher you must complete the following secondary professional education courses and the required courses of at least one teaching major.

You may major in English with English certification (9-12); economics, history, or psychology, with social sciences certification (9-12); mathematics with mathematics certification (9-12); biological sciences, chemistry or physics with certification (9-12); business and management systems (9-12) with business education certification.

You must meet Missouri S&T degree requirements and, in addition, course requirements for certification. The necessary course requirements and arrangements will be coordinated through the education office. The complete list of requirements is available at http://teachereducation.mst.edu/.

**Missouri State Board of Education Approved Programs**

The following professional education programs have been approved by the Missouri State Board of Education for the purpose of teacher preparation and certification.

- Elementary Education
- Secondary Education:
  - English 9-12
  - Mathematics 9-12
  - Social Science 9-12
  - Biology 9-12
  - Chemistry 9-12
  - Physics 9-12
  - Business 9-12

Note: If changes occur at the state level, then the state’s education requirements will supersede those in the catalog and DO NOT fall under the grandfather clause.

Kelly Carter, Associate Teaching Professor
MA Tennessee Technological University

Monica Davis, Lecturer
EdD Lindenwood University
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 1000</td>
<td>Special Problems</td>
<td>IND 0.0-6.0</td>
<td>Consent of instructor required.</td>
</tr>
<tr>
<td>EDUC 2000</td>
<td>Special Problems</td>
<td>IND 0.0-6.0</td>
<td>Consent of instructor required.</td>
</tr>
<tr>
<td>EDUC 2001</td>
<td>Special Topics</td>
<td>LEC 0.0-6.0</td>
<td>This course is designed to give the department an opportunity to test a new course. Variable title.</td>
</tr>
<tr>
<td>EDUC 2002</td>
<td>Problems Of Teaching Social Studies</td>
<td>LEC 2.0</td>
<td>A study of current methodologies for teaching in area of specialization.</td>
</tr>
<tr>
<td>EDUC 2102</td>
<td>Educational Psychology</td>
<td>LEC 3.0</td>
<td>Principles of psychology relevant to the field of education. Course covers theoretical and applied information on such topics as human growth and development, and cognitive and behavioral views of learning and intelligence. The course also covers motivation, creation of learning environments, measurement and evaluation of learning. Prerequisite: Psych 1101. (Co-listed with Psych 2300).</td>
</tr>
<tr>
<td>EDUC 2205</td>
<td>Problems Of Teaching Science/Chemistry</td>
<td>LEC 2.0</td>
<td>A study of current methodologies for teaching in area of specialization.</td>
</tr>
<tr>
<td>EDUC 2206</td>
<td>Problems Of Teaching Science/Physics</td>
<td>LEC 2.0</td>
<td>A study of current methodologies for teaching in area of specialization.</td>
</tr>
<tr>
<td>EDUC 2207</td>
<td>Problems Of Teaching English</td>
<td>LEC 2.0</td>
<td>A study of current methodologies for teaching in area of specialization.</td>
</tr>
<tr>
<td>EDUC 2219</td>
<td>Art For Elementary Teachers</td>
<td>LEC 3.0</td>
<td>Considers the vital role of art activities and creative experiences in the growth and development of children at their level. Prerequisite: Educ 1040. (Co-listed with Art 3219).</td>
</tr>
<tr>
<td>EDUC 2231</td>
<td>Methods In Physical Education 5-9</td>
<td>LEC 3.0</td>
<td>The course will provide the opportunity to learn how to promote student fitness and skill development while building the foundation for a physically active life through specific activities aimed at the student in transition from childhood to young adulthood (5-9). (Co-listed with Phy Ed 2310).</td>
</tr>
<tr>
<td>EDUC 2251</td>
<td>Historical Foundation Of American Education</td>
<td>LEC 3.0</td>
<td>Development of American educational institutions and ideas, and of social forces that have influenced them. Prerequisites: Educ 1040 and History 1300 or 1310.</td>
</tr>
<tr>
<td>EDUC 3000</td>
<td>Special Problems</td>
<td>IND 0.0-6.0</td>
<td>Problems or readings on specific subjects or projects in the department. Consent of instructor required.</td>
</tr>
<tr>
<td>EDUC 3001</td>
<td>Special Topics</td>
<td>LEC 0.0-6.0</td>
<td>This course is designed to give the department an opportunity to test a new course. Variable title.</td>
</tr>
</tbody>
</table>
EDUC 3203 Introduction to STEM Education (LEC 3.0)
A study of current methodologies for teaching in area of specialization. Students are introduced to a variety of instructional programs including Project Lead the Way. Prerequisites: Educ 3220.

EDUC 3211 Child Psychology (LEC 3.0)
The psychological, intellectual, social, and physical development of children with emphasis on the cognitive and affective processes. The theory, research and application will be studied. Prerequisite: Educ 1040 or Psych 1101.

EDUC 3215 Teaching of Reading in Elementary and Middle School (LEC 3.0)
Current materials, methods and teaching techniques in teaching reading in elementary and middle school grades. Emphasis on assessing elementary and middle students needs, individualizing programs based on needs, reading in the content areas, study skills and recreational reading as a lifetime habit. Prerequisite: Educ 1040.

EDUC 3216 Teaching Reading in Content Area (LEC 3.0)
For elementary, middle and secondary school teachers. Specific ways teachers can help students improve reading skills in content areas and ways reading can be taught in reading classes. Prerequisites: Educ 1040.

EDUC 3217 Analysis and Correction of Reading Difficulties (LEC 3.0)
Procedures for diagnosing and correcting reading problems within the classroom. Acquaint preservice teachers preparing for elementary education with commercially prepared informal diagnostic instruments, attitude and interest inventories, prescriptive measures, anecdotal records and strategies for corrective reading instruction within the regular classroom. Prerequisite: Educ 3215.

EDUC 3218 Language Arts for Elementary Teachers (LEC 3.0)
Procedures used in teaching integrated language arts in elementary grades. The strategies would be the development of written and oral communication for use in elementary grades. Prerequisite: Educ 1040.

EDUC 3220 Teaching Science in the Elementary Classroom (LEC 3.0)
A study in methods and materials for teaching science. This course will cultivate students' understanding of Science, Technology, Engineering and Mathematics (STEM) education with a focus on implications for teaching and learning. Prerequisites: Educ 1040.

EDUC 3221 Teaching Math in Elementary and Middle Schools (LEC 3.0)
The course presents an overview of how children learn mathematics, various techniques in teaching mathematics, and examples of applying these techniques to specific mathematical concepts (such as geometry, measurement, basic operations, statistics and probability, etc.). Prerequisite: Math 1120 or Math 1140; Educ 1040. (Co-listed with Math 3921).

EDUC 3222 Geometric Concepts for Elementary Teachers (LEC 3.0)
The course covers methods of teaching the study of points, lines, polygons, similarity, congruence, constructions, and proof in Euclidean Plane Geometry. Transformational geometry and trigonometry are introduced to elementary teachers. Prerequisites: Math 1120 or Math 1140. (Co-listed with Math 3922).

EDUC 3280 Teaching Methods and Skills in Content Areas (LEC 6.0)
Series of weekly experiences, demonstrations, observations, micro teaching, small group discussions to develop concepts of and skills in a variety of basic teaching tasks. Also, demonstration and lecture exercises in the preparation and use of audio visual materials. This course has a strong writing emphasis through multiple lessons plans and a unit plan. Prerequisites: Educ 3216 and English 3170.

EDUC 3290 Coordination of Cooperative Education (LEC 3.0)
Explore the coordination and delivery of work-based learning experiences for student learners, including legal aspects, methods, materials, selecting work sites, placement, evaluation of expectations and student follow-up. Develop an implementation plan for cooperative education. Prerequisites: Educ 1040 and Educ 1104 and Educ 1174.

EDUC 3305 Philosophy And Administration Of The Middle School (LEC 3.0)
This course will acquaint students with aspects of education that are unique to the middle school. Attention will be given to the philosophy underlying the middle school. Finally, leadership theories most appropriate to the middle school will be studied.

EDUC 3311 Psychological & Educational Development Of The Adolescent (LEC 3.0)
A theoretical and empirical examination of the psychological and educational development of the adolescent.

EDUC 3320 Professional Development (LEC 1.0)
This online course focuses on the responsibilities of the professional development committee, state requirements, and components of effective programs that positively impact student performance. Students will examine the relationships among the district's Comprehensive School Improvement Plan, MSIP and the PD Plan. Prerequisite: Graduate standing.

EDUC 3325 Novell Netware 4.1 / 4.11 (LEC 3.0)
A practical, hands-on course for Novell network administration including NDS planning, mapping and documentation; system power up/down; security, resource service management; user management from creation to user and workstation maintenance; application software installation and management, and Novell Server installation.

EDUC 3335 Curriculum And Instruction Of The Middle School (LEC 3.0)
This course advances teachers' understanding of middle school curriculum and instruction. It utilizes knowledge about the nature and needs of young adolescents in developing interdisciplinary learning units, and fosters applications appropriate to experienced teachers' professional assignments. Prerequisite: Graduate standing.

EDUC 3339 Current Issues In Educ: Performance Based Assessment, Beginning (LEC 1.0 and LAB 2.0)
This course is intended to provide an understanding of the principles of sound classroom assessment, the five different types of learning outcomes that need to be assessed and the choice of an assessment that best evaluates the achievement targets. Prerequisite: Practicing educator.
EDUC 3340 Current Issues in Education: Performance Based Assessment, Intermediate (LEC 3.0)
This course will provide participants with an understanding of performance-based assessments, how to construct performance tasks and how to construct scoring guides. Prerequisites: Educ 1040.

EDUC 3341 Current Issues in Educ: Performance Based Assessment, Advanced (LAB 2.0 and LEC 1.0)
This course is intended to provide an understanding of balanced classroom assessment. Students will learn to create multiple types of assessment measures for the purpose of evaluating a wide variety of achievement targets. Prerequisite: Practicing educator.

EDUC 3345 Introducing Educators To Computers (LEC 1.0)
A basic introduction to computers for K-12 educators. Includes identification and use of hardware components, as well as the fundamentals of using the operating system and basic computer software. Actual software taught will reflect current usage. Prerequisite: Post Bac/practicing teacher.

EDUC 3350 Social Studies In The Elementary School (LEC 3.0)
Problems in preparation, teaching of social studies units with suitable materials, techniques for elementary teachers. Prerequisite: Instructor’s approval.

EDUC 3430 Literature for Children (LEC 3.0)
A study of children’s literary works, authors, genres, and illustrators appropriate for the elementary classroom. Prerequisites: Educ 1040.

EDUC 3530 Integrated Social Studies and Humanities for the Elementary Classroom (LEC 3.0)
The course will focus on the methodology and materials needed to facilitate elementary students’ development in social studies. This course will integrate the curriculum and teaching strategies in social studies with music, physical education, and art. Prerequisites: Educ 1040.

EDUC 4298 Student Teaching Seminar (LEC 1.0)
Weekly seminars will be required for all students enrolled in student teaching. Contemporary educational topics, trends, reflective decision making and other pertinent topics will be covered. Reflection of topics and experiences will be exhibited in papers, portfolios and journal writings. Prerequisites: Meet all requirements for student teaching and concurrently be enrolled in student teaching.

EDUC 4299 Student Teaching (LAB 12)
Student teaching will be supervised participation, in the content area of certification with a Missouri Certified Cooperating Teacher. Student teaching is based on 16 weeks and requires the student teacher to demonstrate an ability to be an effective decision making teacher and an inquiry learner. Prerequisites: Professional standing and arrangements made previous semester.

EDUC 4310 Psychology Of The Exceptional Child (LEC 3.0)
Study of the psychology of children on both ends of the educational spectrum. The course presents the fundamentals of providing services as well as understanding the abilities and disabilities of children classified as exceptional. Includes coverage of various disabilities, and the implications of dealing with personal, family and classroom issues. Prerequisite: Psych 1101. (Co-listed with Psych 4310).

EDUC 4315 Advanced Adolescent Development (LEC 3.0)
This course is an advanced examination of the intellectual and social development of the adolescent. Theories of adolescent development and their implications for the educative process are covered and debated.

EDUC 5100 PLTW Training (LEC 0.0-8.0)
This graduate-level Project Lead the Way course prepares K-12 educators to become more effective teachers of STEM-focused material.

EDUC 5370 Teachers Academy: Effective Instructional Strategies (LEC 3.0)
Participants will develop an understanding of research-based instruction and the ability to implement the instructional strategies in their classrooms. In addition to effective instructional practices, the teachers’ academy will focus on leadership, empowerment, collaboration and renewal. Prerequisite: Graduate standing.