School of Education

http://www.education.iastate.edu

Missions and Goals
The School of Education will be a premier leader in education based on a strong foundation in the humanities and social sciences with a noted emphasis in leadership, and science, technology, engineering and mathematics (STEM) education. The School will advance research and scholarship in the areas of teaching, learning, and leadership and in the preparation of professionals for educational environments across multiple settings. The mission of the School of Education is to create, share, and apply knowledge and to advocate for equal educational opportunities and socially responsible educational reform in Iowa, the nation, and the world. The School will prepare excellent research-informed educators, researchers, administrators, and others in educational roles.

• Support the advancement of specialized academic disciplines through exemplary research and scholarship;
• Enhance Iowa’s families, schools, and communities through exemplary education and teacher preparation; and
• Provide educators and students with the knowledge, skills, and experience necessary to become leaders in an increasingly changing and interdependent world.

Undergraduate Study
The School of Education provides the professional education coursework that leads to licensure of pre-service teachers. Majors offered in the department include Elementary Education (K-6), and Early Childhood Education–Unified (birth through age 8). The Early Childhood Education–Unified major is an interdepartmental program administered by the School of Education and the Department of Human Development and Family Studies.

Students who are interested in teaching at the secondary level (7-12) major in a specific discipline (e.g. Mathematics, Science, English, Social Studies) and complete additional required coursework in the School of Education for a teaching license.

Note: The Iowa Board of Educational Examiners has mandated changes to the teacher licensure requirements that will impact students graduating after September 1, 2015. Students must consult with an education academic adviser to review these curriculum changes.

Elementary Education and Early Childhood Education–Unified majors must complete a professional course sequence:

C 1 201 Learning Technologies in the PK-6 Classroom 3
C 1 204 Social Foundations of Education in the United States 3
C 1 245 Strategies in Teaching 2
C 1 268 Strategies Practicum 1
C 1 332 Educational Psychology of Young Learners 3
C 1 406 Multicultural Foundations of School and Society: Introduction 3
SP ED 250 Education of the Exceptional Learner in a Diverse Society 3

Total Credits 18

Secondary education students must complete a professional course sequence:

C 1 202 Learning Technologies in the 7-12 Classroom 3
C 1 204 Social Foundations of Education in the United States 3
C 1 333 Educational Psychology 3
C 1 406 Multicultural Foundations of School and Society: Introduction 3
SP ED 401 Teaching Secondary Students with Exceptionalities in General Education 3
C 1 426 Principles of Secondary Education 3

Total Credits 18

The School of Education offers a Learning Technologies minor that may be earned by registering for the minor and completing the following courses:

C 1 201 Learning Technologies in the PK-6 Classroom 3
or C 1 202 Learning Technologies in the 7-12 Classroom 3
C 1 280B Pre-Student Teaching Experience I: Learning Technologies 1-2

One of the following:

C 1 302 Principles and Practices of Learning with Technology 3
C 1 407 Principles and Practices of Distance Learning 3
C 1 454 Emerging Topics in Learning Technologies (3 credits required) 1-3

Total Credits 14-17

Notes: The School of Education offers courses that can lead to a reading endorsement for grades K-8 or grades 5-12. Students seeking a K-8 endorsement should consult with a School of Education academic adviser. The 5-12 endorsement is offered collaboratively with the English Department. Students seeking this endorsement should consult with an adviser in the English Department. Inquiries can be sent to the Licensure Analyst in Teacher Education Services (133 MacKay) to receive a list of courses needed for an Iowa State University reading endorsement. Prerequisites for the reading endorsement courses are listed in the catalog course descriptions.

Early Childhood Education – Unified

The undergraduate curriculum in Early Childhood Education – Unified leads to the Bachelor of Science degree. See curriculum.

The curriculum in Early Childhood Education – Unified is planned for students preparing to teach young children and work with their families. This program leads to careers in working with young children (both those who are typically developing and those with special needs) from birth through age eight. Graduates in this curriculum may teach in early childhood (preschool and primary) classrooms or home based programs, with emphasis on inclusive services. Graduates may be employed by either public or private agencies or schools. This curriculum has been approved by the Iowa Department of Education and meets requirements for the early childhood education – unified teacher license. The program is an interdepartmental major administered by School of Education and the Department of Human Development and Family Studies within the College of Human Sciences.

Early childhood education – unified majors must satisfy a world languages requirement for graduation.

Students who enroll in early childhood education – unified must apply to and be accepted into the teacher education program prior to enrolling in advanced courses. All early childhood education – unified students, including those seeking a double major, must meet general education requirements for teacher licensure. Iowa State University is in compliance with the Iowa Department of Education’s mandate for a performance-based system of teacher training. The State of Iowa has developed and implemented a competency system to evaluate the performance of all teachers. A detailed list of the twelve Iowa State University Teacher Education Standards and the eight State of Iowa Teaching Standards, along with other information about the University Teacher Education Program, can be found at http://www.education.iastate.edu , the teacher education website. Additional information is also available from the student’s academic adviser.

Students in early childhood education – unified must meet the performance outcome standards for teacher licensure. Standards are assessed in coursework through artifacts such as assignments, projects, or practicum participation. These standards assessments are based on the early childhood content standards for endorsement 100 in the State of Iowa. These include competencies in (1) child growth, development, and learning, (2) developmentally appropriate learning environment and curriculum implementation, (3) health, safety, and nutrition, (4) family and community collaboration, and (5) professionalism. Pre-student teaching field experiences and student teaching experiences in at least two different settings is required. Students will receive both formative and summative evaluations of their progress toward meeting these outcomes throughout their program at Iowa State University.

Elementary Education

The undergraduate curriculum in elementary education leads to the Bachelor of Science degree.

The curriculum in elementary education is planned for students preparing to teach at the elementary school level. This program leads to careers in working with school-aged children in kindergarten through sixth grade. Graduates in this curriculum who meet all requirements set by the Iowa Board of Educational Examiners will be recommended for licensure, which would allow them to teach in elementary classrooms in either public or private schools.
Endorsements in art, English/language arts, English as a Second Language (ESL), health, history, music, basic science, social studies, mathematics, special education (Instructional Strategist I: Mild/Moderate Disabilities K-8), and speech communication/theater are available for elementary education students. An endorsement for teaching world languages in elementary schools is available through the Department of World Languages and Cultures.

Elementary education majors must satisfy a world languages requirement for graduation.

Students who enroll in elementary education must apply and be accepted into the teacher education program prior to enrolling in advanced elementary education courses. Iowa Department of Education licensure requirements state that every student must meet the performance outcome standards for teacher licensure. Standards will be assessed in each course and students will receive both formative and summative evaluations of their progress toward meeting these standards throughout their program at Iowa State University. A detailed explanation of the standards and assessment process may be found on the school’s website (http://www.education.iastate.edu/te/), or may be obtained from a School of Education academic adviser.

Secondary Licensure areas at Iowa State University include:

- Agricultural Education (grades 5-12) – College of Agriculture (http://www.education.iastate.edu/te/programs/secondary-education/agricultural-education-grades-5-12-agriculture)
- Biology (grades 5-12) – College of Liberal Arts and Sciences (http://www.education.iastate.edu/te/programs/secondary-education/biology-grades-5-12-liberal-arts-and-sciences)
- Chemistry (grades 5-12) – College of Liberal Arts and Sciences (http://www.education.iastate.edu/te/programs/secondary-education/chemistry-grades-5-12-liberal-arts-and-sciences)
- Earth Sciences (grades 5-12) – College of Liberal Arts and Sciences (http://www.education.iastate.edu/te/programs/secondary-education/earth-sciences-grades-5-12-liberal-arts-and-sciences)
- English (grades 5-12) – College of Liberal Arts and Sciences (http://www.education.iastate.edu/te/programs/secondary-education/english-grades-5-12-liberal-arts-and-sciences)
- Health Education (grades 5-12) – College of Human Sciences (http://www.education.iastate.edu/te/programs/secondary-education/health-education-grades-5-12-human-sciences)
- History – Social Sciences (grades 5-12) – College of Liberal Arts and Sciences, Human Sciences (http://www.education.iastate.edu/te/programs/secondary-education/history-social-sciences-grades-5-12-liberal-arts-and-sciences-human-sciences)
- Mathematics (grades 5-12) – College of Liberal Arts and Sciences (http://www.education.iastate.edu/te/programs/secondary-education/mathematics-grades-5-12-liberal-arts-and-sciences)
- Music (grades K-12) – College of Liberal Arts and Sciences (http://www.education.iastate.edu/te/programs/secondary-education/music-grades-k-12-liberal-arts-and-sciences)
- Physical Education (grades K-12) – College of Human Sciences (http://www.education.iastate.edu/te/programs/secondary-education/physical-education-grades-k-12-human-sciences)
- Physics (grades 5-12) – College of Liberal Arts and Sciences (http://www.education.iastate.edu/te/programs/secondary-education/physics-grades-5-12-liberal-arts-and-sciences)
- World Languages and Cultures (grades 5-12) – College of Liberal Arts and Sciences (http://www.education.iastate.edu/te/programs/secondary-education/world-languages-and-cultures-grades-5-12-liberal-arts-and-sciences)

Students seeking recommendations for a license to teach in the secondary schools must be admitted to the teacher education program. For specific requirements for each area of specialization, see Teacher Education and curricula for the college in which the chosen degree major is sought.

Notes:

• Students seeking licensure in physical education, agriculture and science do not take CI 426 Principles of Secondary Education Principles of Secondary Education.
Students seeking a teaching license in physical education must see an adviser in the Department of Kinesiology in the College of Human Sciences.

All students who are recommended by Iowa State University for teacher licensure must meet the requirements of the Iowa State University teacher education program and the Iowa Board of Educational Examiners.

Each student must meet the performance outcome standards for teacher licensure by completing a portfolio. Each standard will be assessed in every major.

Students will receive both formative and summative evaluations of their progress toward meeting these outcomes throughout their program at Iowa State University.

A detailed explanation of the standards and assessment process may be found at http://www.education.iastate.edu/te For more information, students should contact the academic adviser in their major. Each student will be enrolled in the department in which he or she plans to major, and must meet the graduation requirements of that department and the college in which it is situated.

Graduate Study

The School of Education offers coursework and experiences for the degrees Doctor of Philosophy, Master of Science, and Master of Education with a major in education. Graduate teacher licensure/degree programs are offered in secondary science and secondary mathematics, as well as endorsement programs in special education.

Graduate students may also pursue administrative licensure for roles as principals and superintendents. The School of Education offers graduate coursework leading to a minor for masters and doctoral students in other fields of study. Several graduate certificate programs are offered through the School of Education.

Doctoral Degree Program

Students in the School of Education may complete the Ph.D. with a major in education. Specializations in Curriculum and Instructional Technology and Educational Leadership are offered. Within the Educational Leadership specialization, students may emphasize educational administration or higher education (higher education administration, community college, social justice).

Students pursuing the Ph.D. may earn an education degree with an emphasis area. Emphasis areas include literacy, mathematics education, multicultural education, or science education. Specific information about the requirements of and options available within the Ph.D. degree in education are available from the school office or on the web (www.education.iastate.edu/graduate ).

The following information refers only to the Ph.D. program:

Prerequisite to major graduate work in education is completion of an undergraduate degree and a masters degree with coursework appropriate to the planned area of study, and evidence that the student ranks above average in scholastic achievement and promise of professional competence. In addition, several areas of emphasis prefer that students have 3-5 years of professional experience. All applicants for the Ph.D. must submit Graduate Record Examination (GRE) scores.

Graduates of the Ph.D. program in education are prepared to pursue careers as scholars, leaders, and administrators in various educational settings, including public and private colleges and universities, community colleges, public and private educational agencies, and corporate training settings.

Master’s Degree Programs

Students in the School of Education may seek a specialization in Curriculum and Instructional Technology (M.S., M.Ed.), Educational Administration (M.Ed.), Higher Education (M.S., M.Ed.), Research and Evaluation (M.S.), Special Education (M.S., M.Ed.), or Student Affairs (M.Ed.). Within the Higher Education specialization, students may opt to emphasize community college leadership or leadership and learning. Students may also pursue a master’s degree with an emphasis area. Emphasis areas include literacy, mathematics education, multicultural education, or science education.

Graduates of the master’s degree programs are prepared to pursue careers as educational leaders, higher education professionals, researchers, and advanced practitioners in colleges and universities, community colleges, public and private schools, education agencies, and informal (free-choice) education settings.

A minor is available in Curriculum and Instructional Technology at both the master’s and doctoral level. Information about the minors can be found on the web at http://www.education.iastate.edu/te/graduate/cit/graduate-specialization/ Other graduate programs related to education (including General Graduate Studies) may be planned for students on the basis of previous education and experiences as well as future plans and needs. For more information, students should refer to Agricultural Education and Studies, Family and Consumer Sciences Education, Kinesiology, and General Graduate Studies or to graduate level course offerings within other departments.

Graduate Teacher and Administrator Licensure Programs

A Master of Arts in Teaching degree program leading to teacher licensure (science education) is available to students who currently have a bachelor’s degree in a science area (or a closely related field). A teacher licensure program in mathematics education is also available to graduate students (School of Education). Teacher licensure at the graduate level is also offered in agricultural education (College of Agriculture and Life Sciences), family and consumer sciences (College of Human Sciences), and physical education (College of Human Sciences). The School of Education provides the professional education coursework.

Students in a graduate teacher licensure program must complete:

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<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
<td>SP ED 501</td>
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<tr>
<td>C I 505</td>
<td>3</td>
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<td>C I 529</td>
<td>3</td>
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<tr>
<td>H P C 504</td>
<td>3</td>
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</tbody>
</table>

Total Credits 15

Mathematics licensure students also take C I 526 Principles of Secondary Education Principles of Secondary Education.

Graduate level teaching endorsements are offered through the School of Education. Graduate students who seek a teaching endorsement in special education, but do not wish to pursue a master’s degree can incorporate those courses in a professional certificate program. Endorsement programs include Instructional Strategist I: Mild/Moderate Disabilities (K-8 or 5-12), or Instructional Strategist II: Behavior Disorders/Learning Disabilities, and special education consultant. A graduate level reading endorsement is also available.

The School of Education offers graduate programs for students seeking Iowa licensure as principals and superintendents. The PreLEAD (Preparation for Leadership) program is designed for working professionals and includes coursework and field experiences leading to Iowa licensure as a principal. Students may complete the program as a certificate (non-degree) or as a Master of Education degree. A Certificate of Advanced Studies program allows students who hold a master’s degree in Educational Administration to pursue the coursework and clinical field experiences necessary to earn an Iowa Superintendent or AEA Chief Administrator license.

Graduate Certificate Programs

The School of Education offers Graduate Certificate programs to allow students to enhance their skills outside of full degree programs. The Certificate programs currently offered include Applied Research Methods in the Human Sciences, Community College Leadership, Community College Teaching, Instructional Design, Literacy Coaching, Principal Licensure (Pre-LeAD), Social Justice in Higher Education, Special Education, and Superintendent Licensure (Certificate in Advanced Studies). Certificate programs require a minimum of 12 graduate credits (several require more than this) and can be earned in conjunction with a degree program. More information about graduate certificate programs in the School of Education can be found at (www.education.iastate.edu/graduate ).

Marlene Strathe, Director of the School of Education

Teacher Education is a shared responsibility that spans three colleges. For most licensure areas, students major in a content area while taking additional education courses. All students who are recommended by Iowa State University for teacher licensure must meet the requirements of Teacher Education and be recommended by their department, college, and the ISU recommending official. Students who successfully complete the requirements for any of the endorsement areas offered at ISU must demonstrate the skills and knowledge required of beginning teachers.

Undergraduate Teacher Licensure Areas

An undergraduate student seeking a bachelor’s degree must be enrolled in the department in which he or she plans to major and must meet the graduation requirements of that department and college.

Currently, there are fifteen undergraduate teacher licensure areas offered at Iowa State University. These areas and their corresponding grade levels are listed below:

- Agricultural Education (grades 5-12)
- Biology (grades 5-12)
Physical Education
The Department of Kinesiology offers a Master's of Science program that prepares Physical Education teachers for grades K-12.
See coordinator for program requirements.

Secondary Sciences
The School of Education offers a Master’s of Arts in Teaching program that prepares Secondary Science teachers for grades 5-12
See coordinator for program requirements.

Iowa Teacher Intern License Pathway
The Iowa Teacher Intern License Pathway is a Regent’s collaborative designed for adult learners holding a baccalaureate degree who are seeking 5-12 licensure in a high needs area. For more information: http://www.iowateacherintern.org/

The General Education Requirement

All prospective teachers are required to meet general education requirements as a part of their preparation.

Undergraduate Students
Undergraduate students must complete studies in the following general education groups. General education courses may be found in many departments. Credits listed are minimum requirements. Specific departments and/or colleges may require additional credits. Credits used to satisfy these general education requirements typically satisfy department and college general education requirements. (See licensure area coordinator for more information.)

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<tr>
<th>Cr.</th>
<th>Group</th>
<th>Credits</th>
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<tbody>
<tr>
<td></td>
<td>Natural sciences</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Mathematics or Statistics</td>
<td>3</td>
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<tr>
<td></td>
<td>Social Sciences</td>
<td>9</td>
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<tr>
<td></td>
<td>Humanities</td>
<td>6</td>
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<td></td>
<td>Communication Skills</td>
<td>9</td>
</tr>
<tr>
<td>34.0</td>
<td>Information Literacy (Lib 160)</td>
<td>1.0</td>
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The above requirements must include:
(1). Engl 150 and ENGL 250 or equivalent
(2). One course that develops interpersonal or group presentation
(3). HD FS 102 or PSYCH 230
(4). One course in American history or government

Post-Bachelor’s Students

Students holding an appropriate bachelor’s degree who wish to pursue teacher licensure must have at least one course in each of the following five general education groups identified for undergraduate students in the preceding section: Natural Sciences, Mathematics or Statistics, Social Sciences, Humanities, and Communication Skills. Individual departments preparing teachers may require additional credits in general education. (See licensure area coordinator for more information.)

Master’s Students

Each Master’s program will determine what, if any, general education requirements Master’s students must fulfill beyond a bachelor’s degree from a regionally accredited institution. (See licensure area coordinator for more information.)

Standards

Teacher Education has a rigorous standards-based curriculum. Two sets of standards are used in the program, one that is targeted for pre-service teachers (Teacher Education Standards which originates from the Iowa Administrative Code, Chapter 79. Standards for Practitioner Preparation Programs) and the other set that is targeted for in-service teachers (the Iowa Teaching Standards and Model Criteria adopted by the State Board of Education), the latter is emphasized during student teaching. Both are listed below in full.

Teacher Education Standards
1. Content/subject matter specialization.

The candidate demonstrates an understanding of the central concepts, tools of inquiry, and structure of the discipline(s) the candidate teaches, and creates
The teacher:

1. Content knowledge.
   - Demonstrates competence in content knowledge appropriate to the teaching position.
   a. Aligns classroom instruction with local standards and district curriculum.
   b. Uses knowledge of student development to make learning experiences in the content area meaningful and accessible for every student.
   c. Relates ideas and information within and across content areas.

2. Student learning.
   - The candidate demonstrates an understanding of human growth and development and of how students learn, and receives learning opportunities that support intellectual, career, social and personal development.
   a. Aligns classroom instruction with local standards and district curriculum.
   b. Uses knowledge of student development to make learning experiences in the content area meaningful and accessible for every student.

3. Diverse learners.
   - The candidate demonstrates an understanding of how students differ in their approaches to learning and creates instructional opportunities that are equitable and adaptable to diverse learners.
   a. Aligns classroom instruction with local standards and district curriculum.
   b. Uses knowledge of student development to make learning experiences in the content area meaningful and accessible for every student.

4. Instructional planning.
   - The candidate plans instruction based upon knowledge of subject matter, students, the community, curriculum goals, and state curriculum models.
   a. Aligns classroom instruction with local standards and district curriculum.
   b. Uses knowledge of student development to make learning experiences in the content area meaningful and accessible for every student.

5. Instructional strategies.
   - The candidate demonstrates an understanding and use of a variety of instructional strategies to encourage student development of critical and creative thinking, problem-solving, and performance skills.
   a. Aligns classroom instruction with local standards and district curriculum.
   b. Uses knowledge of student development to make learning experiences in the content area meaningful and accessible for every student.

   - The candidate uses an understanding of individual and group motivation and behavior; creates a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation; maintains effective classroom management; and is prepared to address behaviors related to substance abuse and other high-risk behaviors.
   a. Aligns classroom instruction with local standards and district curriculum.
   b. Uses knowledge of student development to make learning experiences in the content area meaningful and accessible for every student.

7. Communication.
   - The candidate uses knowledge of effective verbal, nonverbal, and media communication techniques, and other forms of symbolic representation, to foster active inquiry, collaboration, and support interaction in the classroom.
   a. Aligns classroom instruction with local standards and district curriculum.
   b. Uses knowledge of student development to make learning experiences in the content area meaningful and accessible for every student.

8. Assessment.
   - The candidate understands and uses formal and informal assessment strategies to evaluate the continuous intellectual, social, and physical development of the student, and effectively uses both formative and summative assessment of students, including student achievement data, to determine appropriate instruction.
   a. Aligns classroom instruction with local standards and district curriculum.
   b. Uses knowledge of student development to make learning experiences in the content area meaningful and accessible for every student.

   - The candidate develops knowledge of the social, historical, and philosophical foundations of education. The candidate continually evaluates the effects of the candidate’s choices and actions on students, parents, and other professionals in the learning community; actively seeks out opportunities to grow professionally; and demonstrates an understanding of teachers as consumers of research and as researchers in the classroom.
   a. Aligns classroom instruction with local standards and district curriculum.
   b. Uses knowledge of student development to make learning experiences in the content area meaningful and accessible for every student.

10. Collaboration, ethics and relationships.
    - The candidate fosters relationships with parents, school colleagues, and organizations in the larger community to support student learning and development; demonstrates an understanding of educational law and policy, ethics, and the profession of teaching, including the role of boards of education and education agencies; and demonstrates knowledge and dispositions for cooperation with other educators, especially in collaborative/co-teaching as well as in other educational team situations.
    a. Aligns classroom instruction with local standards and district curriculum.
    b. Uses knowledge of student development to make learning experiences in the content area meaningful and accessible for every student.

11. Technology.
    - The candidate effectively integrates technology into instruction to support student learning.
    a. Aligns classroom instruction with local standards and district curriculum.
    b. Uses knowledge of student development to make learning experiences in the content area meaningful and accessible for every student.

12. Methods of teaching.
    - Methods of teaching have an emphasis on the subject and grade level endorsement desired.
    a. Aligns classroom instruction with local standards and district curriculum.
    b. Uses knowledge of student development to make learning experiences in the content area meaningful and accessible for every student.

Iowa Teaching Standards and Criteria

Standard 1: Demonstrates ability to enhance academic performance and support for implementation of the school district student achievement goals.
   - The teacher:
     a. Provides multiple forms of evidence of student learning and growth to students, families, and staff.
     b. Implements strategies supporting student, building, and district goals.
     c. Uses student performance data as a guide for decision-making.
     d. Accepts and demonstrates responsibility for creating a classroom culture that supports the learning of every student.
     e. Creates an environment of mutual respect, rapport, and fairness.
     f. Participates in and contributes to a school culture that focuses on improved student learning.
     g. Communicates with students, families, colleagues, and communities effectively and accurately.
The Professional Teacher Education Requirement (Professional Core)

Undergraduate Students

Prospective teachers must complete certain studies related directly to the profession of teaching. All undergraduate students in teacher education must take the following courses prior to student teaching, unless the student’s licensure area has an approved content-area course deemed to be equivalent (see specific Licensure Area Requirements section below for details.)

Early Childhood Education and Elementary Education:

- C I 201 Learning Technologies in the PK-6 Classroom 3
- C I 204 Social Foundations of Education in the United States 3
- C I 245 Strategies in Teaching 2
- C I 268 Strategies Practicum 1
- C I 332 Educational Psychology of Young Learners 3
- C I 406 Multicultural Foundations of School and Society: Introduction 3
- SP ED 250 Education of the Exceptional Learner in a Diverse Society 3

Student Teaching 16

Total Credits 34

K-12 AND Secondary Education:

- C I 202 Learning Technologies in the 7-12 Classroom 3
- C I 204 Social Foundations of Education in the United States 3
- C I 333 Educational Psychology 3
- C I 406 Multicultural Foundations of School and Society: Introduction 3
- SP ED 401 Teaching Secondary Students with Exceptionalities in General Education 3
- C I 426 Principles of Secondary Education 3

14-16 weeks: Student teaching (minimum 14 weeks). See Teacher Licensure Area Coordinator for more information.

Students in K-12 licensure areas and secondary (grades 5-12) licensure areas must complete the courses listed above unless the student’s licensure area has an approved equivalent. Areas with approved equivalents include: Agricultural Education (for CI 426), Physical Education (for CI 333, CI 401, CI 426) and all Secondary Sciences (for CI 426). (See licensure area coordinator for more information).

Post-Bachelor’s Students

Students who hold an appropriate bachelor’s degree and seek a teaching license must complete the professional education requirements listed above through course work or examination.

Master’s Students

Prospective teachers must complete certain studies related directly to the profession of teaching. All students enrolled in Master’s programs that lead to initial licensure must take the following courses prior to student teaching, unless the student’s licensure area has an approved content-area course deemed to be equivalent. (See Master’s Programs section below for details.)

- SP ED 501 Teaching Secondary Students with Exceptionalities in General Education 3
- C I 505 Using Technology in Learning and Teaching 3
- H P C 504 Studies in the Foundations of Education in the United States 3
- C I 506 Multicultural Foundations of School and Society: Advanced 3
- C I 526 Principles of Secondary Education 3
- C I 529 Educational Psychology and the Secondary Classroom 3

Clinical Experiences

The Standards for Practitioner and Administrator Preparation Programs (chapter 79.13(1)) requires that “candidates admitted to a teacher preparation program participate in field experiences including both observation and participation in teaching activities in a variety of school settings and totaling at least 80 hours’ duration, with at least 10 hours occurring prior to acceptance into the program.” This requirement may be met through pre-student teaching courses (e.g., C I 280,
Requirements for full admission to Teacher Education as a Master’s student:

1. Full admission to an appropriate Master’s degree program.
2. Successful completion of one of the following basic skills tests:
   a. A minimum Praxis I (PPST) score of 522, with a minimum of 170 for each test (reading, writing, and mathematics).
   b. A composite Praxis I (PPST) score of 522, with a minimum of 170 for each test (reading, writing, and mathematics).

Minimum scores for the basic skills tests may be subject to change. Details regarding the scores, dates and fees for these tests are available online: www.teacher.hs.iastate.edu

3. Documented completion of USU approved 10 hours of pre-student teaching clinical experience.
4. All Curriculum and Instruction (C I), Human Development and Family Studies (HD FS) and Special Education (Sp Ed) courses required for licensure have a minimum grade requirement of a C (pedagogy coursework). Courses in the department of the major specifically required for teacher licensure have a minimum grade requirement of a C- (content coursework).
5. An acceptable Iowa criminal background check report initiated by ISU’s recommending official.
6. E-portfolio contains a minimum of one graded artifact (that received a proficient rating).

Maintaining Program Eligibility

GPA:
At all three decision points, GPA will be checked for a minimum of a 2.5 cumulative grade point average.

Grades:
For teacher education students, all Curriculum and Instruction (C I), Human Development and Family Studies (HD FS) and Special Education (Sp Ed) courses required for licensure have a minimum grade requirement of a C-. Note: Individual departments preparing teachers may have higher eligibility requirements (see teacher licensure area coordinator for more information). Please note, for all three decision points (admission, student teaching and licensure) incomplete grades are NOT considered acceptable passing grades.

Electronic Portfolio:
In order to be recommended for licensure, all students must have demonstrated satisfactory performance across the teacher education competencies, as defined by their specific area. (See the teacher licensure area coordinator for more information.) Students’ progress is monitored throughout the program and standards are assessed multiple times. More information is available online: www.teacher.hs.iastate.edu.

Factors considered in maintaining program eligibility may include professional dispositions, scholarship, interest in teaching, character, interpersonal skills, results from the background check, and physical and mental health. Throughout the program, a commendation/concern form may be completed by an adviser, coordinator, faculty member, cooperating teacher, or supervisor to document a teacher education student’s knowledge, skills and dispositions worthy of commendation or concern. Significant concerns will result in removal from Teacher Education.
Background Checks

Two background checks (at minimum) will be completed on each student. First, prior to any clinical experiences taking place, students are required to undergo a state of Iowa background check through the Iowa Division of Criminal Investigation. Second, prior to receiving an initial Iowa teaching license, all candidates will undergo a national criminal history background check. The state background check costs $18.00 and the national background check costs $65.00, prices are subject to change.

At the time of a background check, students will also be required to report any prior criminal convictions or pending criminal charges. Any criminal misconduct charge other than parking or speeding violations must be reported. This includes all deferred judgments. In some cases, this will include criminal activity which occurred while a minor. Failure to accurately self-disclose to the appropriate ISU personnel may result in the discharge of the student from Teacher Education Services. When the student is not enrolled in any field experience, the background check is completed must be reported immediately to Teacher Education Services (located in 133 MacKay). Failure to do so may result in the discharge of the student from Teacher Education.

Note: Specific courses to be used for licensure may not be taken pass/not pass.

Appeals

Students who do not meet the requirements for decision points may choose to appeal to the Educator Preparation Coordinating Council. The description of the appeals process is available online: www.teacher.hs.iastate.edu.

Student Teaching (Decision Point 2)

Student teaching is the culminating experience to the practitioner preparation program at Iowa State University. Depending on the licensure area pursued, student teaching varies in length for a minimum of 14 weeks. A supervisor will make frequent visits to the classroom to ensure success in this experience. Sites for student teachers are within driving distance of campus or at appropriate location, which may lead to a denial of a placement. More information on the Student Self-Reporting of Alleged Criminal Misconduct Policy is located online: www.teacher.hs.iastate.edu.

Course fees are assessed to cover the costs of supervision and placement with a cooperating teacher. To ensure that students are prepared for this experience, the following requirements must be met prior to submitting your “Request for Student Teaching Placement” form:

1. Completion of the “Request for Student Teaching Placement” by the deadline in the fall semester for spring student teaching and by the deadline in the spring semester for fall student teaching. The deadline for students is the end of the third week of the semester. Details regarding this application are available in Teacher Education Services (located in 133 MacKay).

2. A minimum 2.5 cumulative grade point average.

3. A passing grade as determined by the licensure area must have been earned in all required professional courses, foundations and prerequisite courses for all required concentrations and selected courses in the student’s licensure area. All Curriculum and Instruction (C I), Human Development and Family Studies (HD FS) and Special Education (Sp Ed) courses required for licensure have a minimum grade requirement of a C (pedagogy coursework). Courses in the department of the major specifically required for teacher licensure have a minimum grade requirement of a C- (content coursework).

4. Complete (or concurrently completing) 80 hours of pre-student teaching field experience.

5. Report any criminal misconduct charge. Please note: When the student is enrolled in any field experience or anticipates commencing a field experience within 30 days, any criminal misconduct charge a student receives after the background check is completed must be reported immediately to Teacher Education Services. When the student is not enrolled in any field experience, the charge must be reported as soon as possible but no later than five working days after the incident. Failure to do so may result in the discharge of the student from Teacher Education. The faculty coordinator and the content major department chair will be notified. A committee will meet to review the self-reporting letter and make a decision on the student’s progress.

6. E-portfolio has one graded artifact (that received a proficient rating) uploaded for each of the 12 standards.

Teacher Licensure (Decision Point 3)

The Iowa Board of Educational Examiners issues teaching licenses that are valid for specific ages or grades (e.g., Birth-3 for early childhood teachers, K-6 for elementary teachers and K-12 for secondary teachers). Endorsements on a teaching license indicate which subject areas a teacher is qualified to teach. An initial teaching license costs $85, price is subject to change. Completion of student teaching and required coursework does NOT guarantee recommendation for a teaching license. The Iowa License may be recommended for students who hold a bachelor’s degree from Iowa State University or another regionally accredited institution and who have completed the following:

1. All requirements for an approved licensure area as designated by Iowa State University and the State of Iowa, including, but not limited to, the general education requirement, the professional teacher education requirement and clinical experiences. Note: Specific courses to be used for licensure may not be taken pass/not pass.

2. A minimum 2.5 cumulative grade point average.

3. All Curriculum and Instruction (C I), Human Development and Family Studies (HD FS) and Special Education (Sp Ed) courses required for licensure have a minimum grade requirement of a C (pedagogy coursework). Courses in the department of the major specifically required for teacher licensure have a minimum grade requirement of a C- (content coursework).

4. A national background check initiated by the Iowa Board of Educational Examiners.

5. Completion of the Iowa Application for Licensure form.

6. Documentation from the student teaching supervisor that the student has successfully completed the final assessment documenting the student's mastery of the skills and knowledge included in the Iowa Teaching Standards.

7. Department approval by TE coordinator.

8. Registrar approval (at this time, graduation is confirmed and holds on records are reviewed).

9. Passing scores on Praxis II.

10. E-portfolio has 2 graded artifacts (that received a proficient rating) uploaded for each of the 12 standards. Also, a proficient rating is earned on the synthesis of evidence.

Undergraduate and Post-Bachelor’s (non-Master’s) Teacher Licensure Area Requirements

Certain competencies are required of those who plan to teach at the early childhood, elementary or secondary level. For full-time teaching in secondary schools a major in an endorsement area or an approved subject matter concentration of at least 30 semester hours is required. Students interested in adding an additional endorsement area should consult with the coordinator or adviser of the additional area. Persons interested in teaching in one of the following endorsement areas should also consult with the appropriate adviser or coordinator. Specific requirements for each teacher licensure area are described below (these requirements are in addition to the General Education Requirements and the Professional Teacher Education Requirements that were listed earlier). For the most current list of required courses, consult with the coordinator or adviser who works with students on teacher licensure (see the following website for the contact information of these advisers or coordinators: www.teacher.hs.iastate.edu).

Agriculture

The Department of Agricultural Education and Studies is responsible for preparing Agricultural Education teachers for grades 5-12.

For specific content area requirements see Curriculum in Agricultural Education and Studies (Teacher Certification Option). Required professional courses are:

- AGEDS 110A Agriculture and Life Sciences Education (Fall only)
- AGEDS 211A High School Agriculture Programs
- AGEDS 310 Foundations of Agricultural Education Programs
- AGEDS 401 Planning Agriculture and Life Sciences Education Programs
- AGEDS 402 Methods of Teaching Agriculture and Life Sciences
- AGEDS 416 Pre-Student Teaching Experience in Agricultural Education
- AGEDS 417 Supervised Teaching in Agriculture and Life Sciences

Required content courses:

- AGEDS 315 Personal, Professional, and Entrepreneurial Leadership in Agriculture
- AGEDS 488 Methods of Teaching Agricultural Mechanics
- AGRON 114 Principles of Agronomy
Students with an endorsement in a natural science who seek approval to teach Chemistry teachers for grades 5-12. The Department of Chemistry and the School of Education share the responsibility of preparing Chemistry teachers for grades 5-12.

Required content courses are:

- CHEM 177 General Chemistry I
- CHEM 177L Laboratory in General Chemistry I
- CHEM 178 General Chemistry II
- CHEM 178L Laboratory in General Chemistry II
- CHEM 179 General Chemistry III
- CHEM 179L Laboratory in General Chemistry III

Required professional courses are:

- CHEM 211 Quantitative and Environmental Analysis
- CHEM 211L Quantitative and Environmental Analysis Laboratory
- CHEM 331 Organic Chemistry I
- CHEM 331L Laboratory in Organic Chemistry I
- CHEM 332 Organic Chemistry II
- CHEM 332L Laboratory in Organic Chemistry II
- CHEM 335 Organic Chemistry III
- CHEM 335L Laboratory in Organic Chemistry III
- CHEM 336 Organic Chemistry IV
- CHEM 336L Laboratory in Organic Chemistry IV

Additional courses to obtain a total of 18 credits at the 300 level or above in a basic biological science from approved program list. One semester length course in introductory/general chemistry with lab. One semester length course in introductory organic chemistry with lab. One semester length course in biochemistry. Two semester length courses in physics with labs. Six semester hours of mathematics and/or statistics.

Chemistry

The Department of Chemistry and the School of Education share the responsibility of preparing Earth Science teachers for grades 5-12.

Required professional courses are:

- C I 280M Pre-Student Teaching Experience I: Secondary Science
- C I 347 Nature of Science
- C I 418 Secondary Science Methods I: A Research-Based Framework for Teaching Science
- C I 419 Secondary Science Methods II: Advancing A Research-Based Framework for Teaching Science
- C I 468J Pre-Student Teaching Experience II: Secondary Science
- C I 468K Pre-Student Teaching Experience II: Secondary Science
- C I 417B Student Teaching: Physical Sciences

† Arranged with instructor.

† Arranged with instructor.

For specific course requirements, see College of Human Sciences, Curriculum in Early Childhood Education.

Earth Science

The Department of Geological and Atmospheric Sciences and the School of Education share the responsibility of preparing Earth Science teachers for grades 5-12.

Required professional courses are:

- C I 280M Pre-Student Teaching Experience I: Secondary Science
- C I 347 Nature of Science
- C I 418 Secondary Science Methods I: A Research-Based Framework for Teaching Science
- C I 419 Secondary Science Methods II: Advancing A Research-Based Framework for Teaching Science
- C I 468J Pre-Student Teaching Experience II: Secondary Science
- C I 468K Pre-Student Teaching Experience II: Secondary Science
- C I 417J Student Teaching: Earth Sciences

† Arranged with instructor.

† Arranged with instructor.

For specific course requirements, see College of Human Sciences, Curriculum in Earth Science.
Required professional courses are: see Curriculum, English.

Students seeking to add English as an additional endorsement area must earn 46 credits in the following courses:

Advanced writing (one of the following): 3
ENGL 302 Business Communication 3
ENGL 303 Free-Lance Writing for Popular Magazines 3
ENGL 304 Creative Writing: Fiction 3
ENGL 305 Creative Writing: Nonfiction 3
ENGL 306 Creative Writing: Poetry 3
ENGL 309 Report and Proposal Writing 3
ENGL 314 Technical Communication 3
ENGL 315 Creative Writing: Screenplays 3
ENGL 316 Creative Writing: Playwriting 3

Rhetoric (one of the following): 3
ENGL 310 Rhetorical Analysis 3
ENGL 339 Literary Theory and Criticism 3
Speech communication course at the 300 or 400 level 3

Language 3
ENGL 220 Descriptive English Grammar 3

Literature 3
ENGL 225 Survey of British Literature to 1800 3
ENGL 226 Survey of British Literature since 1800 3
ENGL 227 Survey of American Literature to 1865 3
ENGL 228 Survey of American Literature since 1865 3
ENGL 260 Introduction to Literary Study 3
ENGL 340 Women's Literature 3
ENGL 353 World Literature: Western Foundations through Renaissance or ENGL 354 World Literature: Seventeenth Century to the Present English education

Literary Theory and Criticism 3

Students must earn grades of C or better in all of the above courses.

Family and Consumer Sciences

The Family and Consumer Sciences Program in the Department of Apparel, Educational Studies and Hospitality Management prepares Family and Consumer Sciences teachers for grades 5-12.

For specific content area course requirements, see Curriculum, Family and Consumer Sciences Education and Studies.

Required professional courses are:

FCEDS 206 Professional Roles in Family and Consumer Sciences 2
FCEDS 306 Educational Principles for Family and Consumer Sciences 4
FCEDS 413 Planning and Assessment for Family and Consumer Sciences and Family Life Education 4
FCEDS 417A Supervised Teaching in Family and Consumer Sciences: Vocational family and consumer sciences. 3-8
FCEDS 417B Supervised Teaching in Family and Consumer Sciences: Family and consumer sciences. 3
FCEDS 418 Career and Technical Programs in Family and Consumer Sciences 3
FCEDS 480A Pre-Student Teaching Experience in FCS Education: Practicum in FCS Labs (24 hours) 1
FCEDS 480B Pre-Student Teaching Experience in FCS Education: Practicum in Diverse Settings (24 hours) 1
Required professional courses are:

- **H S 375** Teaching-Learning Process in Health Education 3
- **H S 417** Supervised Teaching in Health Education in the Secondary School 12

Required content courses are:

- **KIN 258** Physical Fitness and Conditioning 2
- **H S 105** First Aid and Emergency Care 2
- **H S 110** Personal and Consumer Health 3
- **H S 215** Drug Education 3
- **H S 305** Instructor’s First Aid and Cardio-pulmonary Resuscitation 2
- **H S 310** Community and Public Health 3
- **H S 350** Human Diseases 3
- **H S 390** Administration of the School Health Program 3
- **FS HN 167** Introduction to Human Nutrition 3
- **HD FS 276** Human Sexuality 3
- **HD FS 373** Death as a Part of Living 3
- **or HD FS 377** Aging and the Family 3
- **BIOL 155** Human Biology 3
- **or BIOL 255** Fundamentals of Human Anatomy 3
- **BIOL 255L** Fundamentals of Human Anatomy Laboratory 1
- **BIOL 256** Fundamentals of Human Physiology 3
- **BIOL 256L** Fundamentals of Human Physiology Laboratory 1

Students seeking approval for health education as an additional endorsement area must earn credits in the following courses:

- **FS HN 167** Introduction to Human Nutrition 3
- **HD FS 276** Human Sexuality 3
- **H S 110** Personal and Consumer Health 3
- **H S 215** Drug Education 3
- **H S 305** Instructor’s First Aid and Cardio-pulmonary Resuscitation 2
- **H S 310** Community and Public Health 3
- **H S 350** Human Diseases 3
- **H S 375** Teaching-Learning Process in Health Education 3
- **H S 390** Administration of the School Health Program 3
- **or BIOL 255** Fundamentals of Human Anatomy 3
- **BIOL 155** Human Biology 3
- **or BIOL 255** Fundamentals of Human Anatomy 3
- **BIOL 255L** Fundamentals of Human Anatomy Laboratory 1
- **BIOL 256** Fundamentals of Human Physiology 3
- **BIOL 256L** Fundamentals of Human Physiology Laboratory 1

### History-Social Sciences

The Curriculum and Instruction Department and the History Department share the responsibility for preparing History-Social Sciences teachers for grades 5-12. The department has specific class distribution requirements for the U.S. and world history endorsements.

Contact the History Department for specific information.

History-Social Sciences Education students must earn grades of B- or better in all content courses (with a minimum of a 2.75 GPA), as well as a C or better in pedagogical coursework required for teacher licensure.

### Mathematics

The Mathematics Department and the School of Education share responsibility for the preparation of Mathematics teachers for grades 5-12.

For specific content area course requirements, contact the School of Education.

Required professional courses are:

- **C I 219** Orientation to Teacher Education: Math, Science, FCS Education, and History/Social Science Majors 1
- **C I 280A** Pre-Student Teaching Experience I: Core Experience 1-2
- **C I 280L** Pre-Student Teaching Experience I: Secondary Education 0.5
- **C I 480C** Pre-Student Teaching Experience III: Mathematics 0.5-2
- **C I 497** Teaching Secondary School Mathematics 3
- **C I 417C** Student Teaching: Mathematics Arranged with instructor. Arr

† Arranged with instructor.

Required content courses are:

- **MATH 165** Calculus I 4
- **MATH 166** Calculus II 4†
- **MATH 201** Introduction to Proofs 3
- **MATH 265** Calculus III 4
- **MATH 266** Elementary Differential Equations 3
- or **MATH 267** Elementary Differential Equations and Laplace Transforms 3
- **MATH 301** Abstract Algebra I 3
- **MATH 317** Theory of Linear Algebra 4
- **MATH 341** Introduction to the Theory of Probability and Statistics I 3
- **MATH 397** Teaching Secondary Mathematics Using University Mathematics 3
- **MATH 435** Geometry I 3
- **MATH 436** Geometry II 3
- **STAT 101** Principles of Statistics 4

One of the following:

- **COM S 107** Applied Computer Programming 3
- **COM S 207** Fundamentals of Computer Programming 3
- **COM S 227** Introduction to Object-oriented Programming 4

Students who are pursuing mathematics as an additional endorsement must major in one of the mathematical sciences, physical sciences, or engineering. These students must take the following:

- **MATH 165** Calculus I 4
- **MATH 166** Calculus II 4†
- **MATH 201** Introduction to Proofs 3
- **MATH 301** Abstract Algebra I 3
- **MATH 317** Theory of Linear Algebra 4
- **MATH 341** Introduction to the Theory of Probability and Statistics I 3
- **MATH 397** Teaching Secondary Mathematics Using University Mathematics 3
- **MATH 435** Geometry I 3
- **MATH 436** Geometry II 3
- **STAT 101** Principles of Statistics 4

One of the following:

- **COM S 107** Applied Computer Programming 3
- **COM S 207** Fundamentals of Computer Programming 3
- **COM S 227** Introduction to Object-oriented Programming 4

### Music

The Music Department prepares Music teachers for grades K-12.

For specific content area course requirements, see Curriculum, in Music.

Required professional courses are:

- **MUSIC 248** Technology in Music Instruction 2
- **MUSIC 266** Introduction to Music Education 2
- **MUSIC 366** Methods of Music Education 2

One of the following:

- **MUSIC 387** Choral Literature 2
- **MUSIC 388** Marching Band and Jazz Ensemble Techniques 2
- **MUSIC 417R** Student Teaching: Music-Elementary Arranged with instructor. Arr
- **MUSIC 417S** Student Teaching: Music-Secondary Arranged with instructor. Arr
- **MUSIC 464** Instrumental Administration, Materials, and Methods 2
- **MUSIC 465** Choral Materials and Methods 2
Required professional courses:

**Kinesiology and Health**

Required professional courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIN 280</td>
<td>Directed Field Experience in Elementary Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>KIN 281</td>
<td>Directed Field Experience in Secondary Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>KIN 312</td>
<td>Movement Education in Elementary School Physical Education</td>
<td>3</td>
</tr>
<tr>
<td>KIN 313</td>
<td>Teaching Secondary Physical Education</td>
<td>3</td>
</tr>
<tr>
<td>KIN 395</td>
<td>Adapted Physical Education</td>
<td>3</td>
</tr>
<tr>
<td>KIN 417</td>
<td>Supervised Teaching in Physical Education in the Secondary School</td>
<td>arr</td>
</tr>
<tr>
<td>KIN 418</td>
<td>Supervised Teaching in Physical Education in the Elementary School</td>
<td>8</td>
</tr>
<tr>
<td>KIN 471</td>
<td>Measurement in Physical Education</td>
<td>3</td>
</tr>
<tr>
<td>KIN 475</td>
<td>Physical Education Curriculum Design and Program Organization</td>
<td>3</td>
</tr>
</tbody>
</table>

† Arranged with instructor.

Required content courses are: see Curriculum, Kinesiology and Health

**Physics**

The Physics and Astronomy Department and the School of Education share the responsibility for preparing Physics teachers for grades 5-12.

Required professional courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>C I 280A</td>
<td>Pre-Student Teaching Experience I: Core Experience</td>
<td>1-2</td>
</tr>
<tr>
<td>C I 347</td>
<td>Nature of Science</td>
<td>3</td>
</tr>
<tr>
<td>C I 417B</td>
<td>Student Teaching: Physical Sciences               arr</td>
<td></td>
</tr>
<tr>
<td>C I 418</td>
<td>Secondary Science Methods I: A Research-Based Framework for Teaching Science</td>
<td>3</td>
</tr>
<tr>
<td>C I 419</td>
<td>Secondary Science Methods II: Advancing A Research-Based Framework for Teaching Science</td>
<td>3</td>
</tr>
<tr>
<td>C I 468J</td>
<td>Pre-Student Teaching Experience II: Secondary Science I</td>
<td>2</td>
</tr>
<tr>
<td>C I 468K</td>
<td>Pre-Student Teaching Experience II: Secondary Science II</td>
<td>2</td>
</tr>
</tbody>
</table>

† Arranged with instructor.

Required content courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 221</td>
<td>Introduction to Classical Physics I</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 222</td>
<td>Introduction to Classical Physics II</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 311T</td>
<td>Intermediate Laboratory for Secondary Physics Teachers</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 321</td>
<td>Introduction to Modern Physics I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 321L</td>
<td>Introductory Laboratory in Modern Physics I</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 322</td>
<td>Introduction to Modern Physics II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 322L</td>
<td>Introductory Laboratory in Modern Physics II</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 399</td>
<td>Seminar on Secondary School Physics</td>
<td>1-2</td>
</tr>
</tbody>
</table>

Students with no other natural science endorsement who seek approval to teach physics as an additional endorsement area must complete one of the two sets of courses listed above plus sufficient additional credits from the following list of courses to total 24 credits:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 302</td>
<td>The Challenge of Contemporary Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 304</td>
<td>Thermal Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 306</td>
<td>Physics of Wave Motion</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 310</td>
<td>Electronic Instrumentation for Experimental Physics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 321</td>
<td>Introduction to Modern Physics I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 321L</td>
<td>Introductory Laboratory in Modern Physics I</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 322</td>
<td>Introduction to Modern Physics II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 322L</td>
<td>Introductory Laboratory in Modern Physics II</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 361</td>
<td>Classical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 362</td>
<td>Intermediate Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 364</td>
<td>Electricity and Magnetism I</td>
<td>3</td>
</tr>
</tbody>
</table>

† Arranged with instructor.

Required professional courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 365</td>
<td>Electricity and Magnetism II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 496</td>
<td>Modern Optics</td>
<td>3</td>
</tr>
<tr>
<td>ASTRO 342</td>
<td>Introduction to Solar System Astronomy</td>
<td>3</td>
</tr>
<tr>
<td>ASTRO 344L</td>
<td>Astronomy Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>ASTRO 346</td>
<td>Introduction to Astrophysics</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 324</td>
<td>Introductory Quantum Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 325</td>
<td>Chemical Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>E E 201</td>
<td>Electric Circuits</td>
<td>4</td>
</tr>
<tr>
<td>E E 230</td>
<td>Electronic Circuits and Systems</td>
<td>4</td>
</tr>
<tr>
<td>E M 274</td>
<td>Statics of Engineering</td>
<td>3</td>
</tr>
<tr>
<td>E M 345</td>
<td>Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>E M 378</td>
<td>Mechanics of Fluids</td>
<td>3</td>
</tr>
<tr>
<td>M E 231</td>
<td>Engineering Thermodynamics I</td>
<td>3</td>
</tr>
</tbody>
</table>

**World Languages**

The Department of World Languages and Cultures prepares World Language teachers for grades 5-12.

World Language teachers can earn an endorsement in French, German or Spanish.

For specific content area course requirements, see Curriculum, World Languages and Cultures.

**Required professional courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>C I 280A</td>
<td>Pre-Student Teaching Experience I: Core Experience</td>
<td>1-2</td>
</tr>
</tbody>
</table>
must fulfill the requirements of an endorsement area listed above and earn credits in the following (to meet state minimum requirements).  

**Requirements for Additional Endorsements**

Students may elect to add additional endorsements to their teaching license by completing the necessary requirements. All “Undergraduate Teacher Licensure Areas” listed above can be pursued as an additional endorsement. Below are the additional endorsements only options that require students to pursue one of the undergraduate, post-bachelor’s or graduate teacher licensure areas listed above. Detailed requirements for any endorsement may be obtained from Teacher Education Services (located in 133 MacKay).

**Art (grades K-8)**

Students seeking an additional endorsement in Art (K-8) should see an adviser in the School of Education.

**Basic Science (grades K-8)**

Students seeking an additional endorsement in Basic Science (K-8) should see an adviser in the School of Education.

**Coaching Interscholastic Athletics (grades K-12)**

The Department Kinesiology offers courses that can lead to a K-12 athletic coach endorsement. Students seeking approval for the Iowa State University endorsement to coach interscholastic athletics must satisfy the requirements of an endorsement area listed above and earn credits in the following (to meet state minimum requirements).

**Chinese (grades K-8)**

Students seeking an additional endorsement in Chinese (K-8) should see an adviser in the School of Education.

**Chinese (grades 5-12)**

Students seeking an additional endorsement in Chinese (5-12) should see the coordinator in the Department of World Languages and Cultures.

**English and Language Arts (grades K-8)**

Students seeking an additional endorsement in English and Language Arts (K-8) should see an adviser in the School of Education.

**English as a Second Language (grades K-12)**

The Department of English offers courses that can lead to a K-12 ESL Teacher endorsement.

To add a K-12 teaching endorsement in English as a Second Language, students must fulfill the requirements of an endorsement area listed above and earn credits in the following courses. In some cases, relevant special topics courses or experimental courses may be substituted. Some courses have prerequisites.

**English as a Second Language (grades K-12)**

The Department of English offers courses that can lead to a K-12 ESL Teacher endorsement.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 219</td>
<td>Introduction to Linguistics</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 511</td>
<td>Introduction to Linguistic Analysis</td>
<td></td>
</tr>
<tr>
<td>ENGL 220</td>
<td>Descriptive English Grammar</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 425</td>
<td>Second Language Learning and Teaching</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 512</td>
<td>Second Language Acquisition</td>
<td></td>
</tr>
<tr>
<td>ENGL 514</td>
<td>Sociolinguistics</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 518</td>
<td>Teaching English as a Second Language Methods and Materials</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 524</td>
<td>Literacy: Issues and Methods for Nonnative Speakers of English</td>
<td></td>
</tr>
<tr>
<td>or ENGL 524 &amp; ENGL 525</td>
<td>Literacy: Issues and Methods for Nonnative Speakers of English</td>
<td>6</td>
</tr>
<tr>
<td>ENGL 588</td>
<td>Supervised Practice Teaching in Teaching English as a Second Language</td>
<td>3</td>
</tr>
</tbody>
</table>

**Basic Science (grades 5-12)**

Basic Science is an interdepartmental additional area of endorsement for grades 5-12

Students seeking approval to teach general science must earn credits in the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 211</td>
<td>Principles of Biology I</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 211L</td>
<td>Principles of Biology Laboratory I</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 212</td>
<td>Principles of Biology II</td>
<td>3</td>
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<tr>
<td>BIOL 212L</td>
<td>Principles of Biology Laboratory II</td>
<td>1</td>
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<tr>
<td>CHEM 177</td>
<td>General Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 177L</td>
<td>Laboratory in General Chemistry I</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 178</td>
<td>General Chemistry II</td>
<td>3</td>
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<tr>
<td>CHEM 178L</td>
<td>Laboratory in College Chemistry II</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 231</td>
<td>Elementary Organic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 231L</td>
<td>Laboratory in Elementary Organic Chemistry</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 100</td>
<td>The Earth</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 100L</td>
<td>The Earth: Laboratory &amp; PHYS 112 and General Physics</td>
<td>6</td>
</tr>
<tr>
<td>PHYS 111</td>
<td>General Physics</td>
<td>5</td>
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<tr>
<td>or</td>
<td>PHYS 221 Introduction to Classical Physics I &amp; PHYS 222 and Introduction to Classical Physics II</td>
<td>10</td>
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<tr>
<td>One of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 151</td>
<td>Calculus for Business and Social Sciences</td>
<td>3</td>
</tr>
<tr>
<td>MATH 160</td>
<td>Survey of Calculus</td>
<td>4</td>
</tr>
<tr>
<td>MATH 165</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 181</td>
<td>Calculus and Mathematical Modeling for the Life Sciences I</td>
<td>4</td>
</tr>
</tbody>
</table>

At least 6 credits from courses numbered 300 or above in astronomy and astrophysics, biochemistry and biophysics, biology, botany, chemistry, genetics, geology, meteorology, microbiology, or physics.

**Health (grades K-8)**

Students seeking an additional endorsement in Health (K-8) should see an adviser in the School of Education.

**History (grades K-8)**

Students seeking an additional endorsement in History (K-8) should see an adviser in the School of Education.

**Latin (grades 5-12)**

Students seeking an additional endorsement in Latin (5-12) should see the coordinator in the Department of World Languages and Cultures.

**Mathematics (grades K-8)**

Students seeking an additional endorsement in mathematics (K-8) should see an adviser in the School of Education.

**Reading (grades K-8, 5-12)**

The School of Education offers courses that can lead to a reading endorsement for grades K-8. This department collaborates with the English Department to offer the necessary coursework for a 5-12 reading endorsement.

Students seeking an additional endorsement to teach elementary reading (K-8) should see a School of Education adviser.

Students seeking endorsement to teach reading (5-12) as an additional endorsement must earn credits in the following courses:
Foundations of reading and reading in the content area

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>C I 395</td>
<td>Content Area Reading and Literacy</td>
<td>3</td>
</tr>
<tr>
<td>or C I 551</td>
<td>Foundations of Reading and Language Arts</td>
<td></td>
</tr>
<tr>
<td>C I 494</td>
<td>Practice and Theory of Teaching Literature in the Secondary Schools</td>
<td>3</td>
</tr>
</tbody>
</table>

Practicum

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>C I 588</td>
<td>Supervised Tutoring in Reading</td>
<td>3</td>
</tr>
</tbody>
</table>

Language development

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 219</td>
<td>Introduction to Linguistics</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 511</td>
<td>Introduction to Linguistic Analysis</td>
<td></td>
</tr>
</tbody>
</table>

Reading assessment and oral communication

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>C I 452</td>
<td>Assessment for Literacy and Learning</td>
<td>3</td>
</tr>
</tbody>
</table>

Written communication

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>C I 395</td>
<td>Content Area Reading and Literacy</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 397</td>
<td>Practice and Theory of Teaching Writing in the Secondary Schools</td>
<td>3</td>
</tr>
</tbody>
</table>

Adolescent nonfiction and fiction

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 396</td>
<td>Teaching the Reading of Young Adult Literature</td>
<td>3</td>
</tr>
<tr>
<td>or C I 554</td>
<td>Reading and Responding to Children's Literature</td>
<td></td>
</tr>
</tbody>
</table>

Reading instrumental strategies

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>C I 456</td>
<td>Integrating Technology into the Reading and Language Arts Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>or C I 553</td>
<td>Teaching Struggling Adolescent Readers</td>
<td></td>
</tr>
</tbody>
</table>

**Russian (grades 5-12)**

Students seeking an additional endorsement in Russian (5-12) should see the coordinator in the Department of World Languages and Cultures.

**Social Sciences (grades K-8)**

Students seeking an additional endorsement in Social Sciences (K-8) should see an adviser in the School of Education.

**Special Education (grades K-8, 5-12, ages 5-21)**

The School of Education offers courses that can lead to special education endorsements (Instructional Strategist I: Mild/Moderate Disabilities (grades K-8 and grades 5-12) and Instructional Strategist II: Behavior Disorders/Learning Disabilities (ages 5-21)). Students seeking special education endorsements at the graduate level must have a current teaching license.

Elementary Education students seeking an additional K-8 endorsement to teach special education should see an adviser in the School of Education.

**Speech/Theatre (grades 5-12)**

The Department of Speech Communication offers courses that can lead to 5-12 speech/theatre endorsement.

Students seeking endorsement to teach speech as an additional area must earn credits in the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP CM 110</td>
<td>Listening</td>
<td>3</td>
</tr>
<tr>
<td>or COMST 102</td>
<td>Introduction to Interpersonal Communication</td>
<td></td>
</tr>
<tr>
<td>SP CM 212</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>SP CM 313</td>
<td>Communication in Classrooms and Workshops</td>
<td>3</td>
</tr>
<tr>
<td>SP CM 322</td>
<td>Argumentation, Debate, and Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>SP CM 412</td>
<td>Rhetorical Criticism</td>
<td>3</td>
</tr>
<tr>
<td>SP CM 495A</td>
<td>Independent Study; Directing Speech Activities</td>
<td>1</td>
</tr>
<tr>
<td>SP CM 495B</td>
<td>Independent Study; Teaching Speech</td>
<td>3</td>
</tr>
<tr>
<td>THTRE 255</td>
<td>Introduction to Theatrical Production</td>
<td>4</td>
</tr>
<tr>
<td>THTRE 357</td>
<td>Stage Make-up</td>
<td>2</td>
</tr>
<tr>
<td>THTRE 358</td>
<td>Oral Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>THTRE 360</td>
<td>Stagecraft</td>
<td>4</td>
</tr>
<tr>
<td>THTRE 455</td>
<td>Directing I</td>
<td>3</td>
</tr>
<tr>
<td>JL MC 101</td>
<td>Mass Media and Society</td>
<td>3</td>
</tr>
</tbody>
</table>

**World Languages and Cultures (French, German, Latin, Russian, and Spanish) (grades K-8)**

Students seeking an additional endorsement World Languages and Cultures (K-8) should see an adviser in the School of Education.