Teacher Preparation: Elementary and Secondary Education

The Teaching, Learning, and Technology (TLT) Program offers a 5-year program in which undergraduates are permitted to take selected courses while completing their undergraduate degrees in a content area. Following graduation, in an additional year, these students complete the remaining coursework toward teacher certification and a master’s degree.

Lehigh undergraduates who did not participate in our 5-year program, as well as students who have graduated from other institutions with at least a bachelor’s degree, may also earn their teacher certification, either alone or as part of an appropriate master’s degree.

Students seeking initial teacher certification may earn a Master of Education in Elementary Education with PreK-4 Teacher Certification or a Master of Education (or a Master of Arts) in Secondary Education with Teacher Certification. Students wishing to earn dual certification in both general education and special education may earn their master’s degree and acquire such dual certification by completing additional courses in Special Education. If these students wish, they may also earn a second master’s degree. Applicable Special Education master’s degrees include the M.Ed. in Special Education at either the elementary level (PreK-8) or secondary level (7-12).

Courses toward initial teacher certification are taught by faculty from the Special Education program and the Teaching, Learning, and Technology program. Our preparation programs highlight research-based, inquiry-oriented, and technology-enabled strategies to reach all learners. We emphasize collaborative and equitable approaches to instruction and learning.

Lehigh’s College of Education is accredited by the Pennsylvania Department of Education (PDE) to offer 11 teacher certifications:

- Elementary Education (PreK-4);
- Eight Secondary (7th-12th grade) certifications: Biology, Chemistry, Earth and Space Science, General Science, Physics, English, Mathematics, and Social Studies, and
- Two additional Special Education certifications: Elementary (PreK-8) and Secondary (7-12). Students may acquire special education dual certification either at the same time as they earn one of the general education certifications above or after they have earned that certification.

Pennsylvania has reciprocal agreements with 47 other states and the District of Columbia; individuals holding teacher certification in Pennsylvania may receive equivalent certification in one of those states. The College of Education also has relationships with international schools all over the world, enabling new teacher graduates to pursue teaching opportunities abroad.

For additional information about the program, please visit: [http://coe.lehigh.edu/academics/disciplines/teachered](http://coe.lehigh.edu/academics/disciplines/teachered)

Professors. Linda M. Bambara, EDD (Vanderbilt University); Alec M. Bodzin, PHD (North Carolina State University); Lee Kern, PHD (University of South Florida)

Associate Professors. Helen Lynn Columba-Piervallo, EDD (University of Louisville); Minyi Shih Dennis, PHD (University of Texas at Austin); Thomas Chalmers Hammond, PHD (University of Virginia); Brook Sawyer, PHD (University of Virginia)

Assistant Professors. Ana D Duenas, PHD (Michigan State University); Sara Kangas, PHD (Temple University); Esther Lindstrøm, PHD (Vanderbilt University); Kristi Morin, PHD (Texas A&M University)

Professors Of Practice. Noor Syed, PHD (Columbia University); Farah L. Varella, PHD (Lehigh University)

Emeriti. Ward M. Cates, EDD (Duke University); Scott Roy Garrigan, EDD (Lehigh University); Warren R. Heydenberk, PHD (University of Northern Colorado)

Lehigh undergraduates may enroll in either of the College of Education’s 5-year teacher certification areas: Elementary Education (grade levels preK through 4) and Secondary Education (grade levels 7 through 12). A Minor in Education is offered through the College of Arts and Sciences.

For information on the 5-year programs, see below. For information on the Education Minor, see the College of Arts and Sciences’ Minor Programs in the College’.

5-YEAR MASTER OF EDUCATION IN ELEMENTARY EDUCATION AND PREK-4 TEACHER CERTIFICATION

The College of Education offers a five-year degree program that is designed to allow students to earn both a bachelor’s degree and a master’s degree in five years instead of the traditional six. The combined degree program leads to either a B.A. or B.S. degree in an academic discipline from the College of Arts and Sciences, the P.C. Rossin College of Engineering and Applied Sciences, or the College of Business, and an M.Ed. degree in Elementary Education. In addition, students also earn eligibility for an Instructional I teaching certificate from the Pennsylvania Department of Education (PDE) in grades PreK-4.

PROGRAM OF STUDY FOR PREK-4 CERTIFICATION:

B.A. or B.S. plus Master of Education (M.Ed.) in Elementary Education and PA Certification eligibility. This 42-credit (minimum) master’s program prepares students for certification as PreK-4 teachers. Students complete coursework in three categories:

Core Course Work (21 credit hours)

- SPED 332 Education and Inclusion of Individuals with Special Needs in K-12 3
- TLT 380 Child Development and Cognition 3
- TLT 404 Diversity, Families, and School Collaborations in K-12 3
- TLT 405 Principles and Applications of K-12 Assessment 3
- TLT 407 Instructional Design for K-12 Classrooms 3
- TLT 409 K-12 Classroom Environment and Management 3
- TLT 411 Early Childhood Education 3

Development of Professional Skills (18 credit hours)

- TLT 412 Social Studies in PreK through 4th Grade 3
- TLT 420 Literacy in PreK through 4th Grade: Reading and Its Foundations 3
- TLT 422 Literacy in PreK through 4th Grade: Writing and Its Foundations 3
- TLT 426 Science in PreK through 4th Grade 3
- TLT 428 Mathematics and Numeracy in PreK through 4th Grade 3
- SPED 465 Advanced Inclusionary Practices in K-12 3

Extended Field Experience (3-6 credit hours)

- TLT 444 General Education Student Teaching and Seminar 1-6

In order to be eligible for PreK-4 certification, by the time a student finishes the program he or she must have demonstrated competence in the core content areas for that certification. At time of acceptance, each student will be informed of any additional content-area coursework he or she will be required to complete in order to demonstrate competence in the PreK-4 core content areas. The student is responsible for completing this coursework prior to applying for PreK-4 certification. The credits for this coursework are not included in the master’s degree.

Distribution of coursework across undergraduate and graduate study:

- Sophomore Year (3 credit hours)
- Junior Year (3 credit hours)
Students complete coursework in three categories: 

- Content-area competence (see below).
- Pennsylvania Department of Education guidelines for demonstrated and Pennsylvania teacher certification eligibility. In addition to meeting B.A. or B.S. plus Master of Education (M.Ed., 33 credits minimum) one of the 8 subject areas below:

  - Biology 7-12
  - Chemistry 7-12
  - Earth and Space Science 7-12
  - English 7-12
  - General Science 7-12
  - Mathematics 7-12
  - Physics 7-12
  - Social Studies 7-12

**5-YEAR MASTER OF EDUCATION IN SECONDARY EDUCATION AND 7-12 TEACHER CERTIFICATION**

The College of Education offers a five-year degree program that is designed to allow students to earn both a bachelor’s degree and a master’s degree in five years instead of the traditional six.

The combined degree program leads to (1) a B.A./B.S. degree in an academic discipline from the College of Arts and Sciences, the P.C. Rossin College of Engineering and Applied Sciences, or the College of Business, and (2) an M.Ed. degree in Secondary Education. In addition, students also earn eligibility for Instructional I teacher certification from the Pennsylvania Department of Education (PDE) in one of the 8 subject areas below:

- Biology 7-12
- Chemistry 7-12
- Earth and Space Science 7-12
- English 7-12
- General Science 7-12
- Mathematics 7-12
- Physics 7-12
- Social Studies 7-12

**PROGRAM OF STUDY:**

B.A. or B.S. plus Master of Education (M.Ed., 33 credits minimum) and Pennsylvania teacher certification eligibility. In addition to meeting the requirements for the bachelor's degree, students must satisfy the Pennsylvania Department of Education guidelines for demonstrated content-area competence (see below).

Students complete coursework in three categories:

**Core Coursework (15 credits)**

- **SPED 332** Education and Inclusion of Individuals with Special Needs in K-12 3
- **TLT 404** Diversity, Families, and School Collaborations in K-12 3
- **TLT 405** Principles and Applications of K-12 Assessment 3
- **TLT 407** Instructional Design for K-12 Classrooms 3
- **TLT 409** K-12 Classroom Environment and Management 3

**Development of Professional Skills (12 credits)**

Content-area teaching methods course with approval of adviser (one of the following):

- **TLT 431** Social Studies in Middle Level and High School Education 3
- **TLT 434** English in Middle Level and High School Education 3
- **TLT 436** Science in Middle Level and High School Education 3
- **TLT 438** Mathematics in Middle Level and High School Education 3

Plus:

- **TLT 432** Reading and Critical Thinking in Middle Level and High School Education 3

**Extended Field Experiences (6-9 credits)**

- **TLT 440** Pre-professional Seminar 3
- **TLT 444** General Education Student Teaching and Seminar 1-6

In order to be eligible for secondary certification, by the time a student finishes the program he or she must have demonstrated competence in the subject matter area of that certification. Each student upon admission meets with the content-area specialist in the field in which that student seeks secondary certification. The content-area specialist, who is a faculty member in the College of Arts and Sciences, reviews the student’s transcripts and compares that student’s coursework with the content-area guide sheet approved by the Pennsylvania Department of Education (PDE). Following this audit, the content-area specialist will identify what additional coursework in the content-area is needed, if any. The student is responsible for completing this coursework prior to applying for secondary certification. The credits for this course work are not included in the M.Ed. degree.

Students in the secondary teacher-preparation program are expected to have completed almost all their content area coursework prior to going out to student teach. This is important because student teachers need to have mastery of their content in order to fulfill their responsibilities to their students and to derive maximum benefit from the student teaching experience.

Distribution of coursework across undergraduate and graduate study:

**Sophomore Year (3 credit hours)**

**Junior Year (6 credit hours)**

**Senior Year (6 credit hours)**

**College of Education - Summer (6 credits)**

**College of Education - Fall (9 credits)**

**College of Education - Spring (3-6 credits)**

Students in this program unable to accrue enough credits outside their undergraduate degree programs may need to take additional credits after beginning graduate study in order to reach the 33-credit minimum.

Students in this program who wish to obtain the Master of Arts (M.A.) degree rather than the M.Ed. degree may petition to change to that degree after admission to graduate study. The M.A. degree requires 42 credits instead of 33 credits and has specific content-area expertise requirements. See the M.A. degree description for its requirements.

**Five-Year Bachelor's Plus Master of Education in Elementary Education and PreK-4 Certification**

The College of Education offers a five-year degree program that is designed to allow students to earn both a bachelor’s degree and a master’s degree in five years instead of the traditional six. The combined degree program leads to either a B.A. or B.S. degree in an academic discipline from the College of Arts and Sciences, the P.C. Rossin College of Engineering and Applied Sciences, or the College of Business, and an M.Ed. degree in Elementary Education. In addition, students also earn eligibility for an Instructional I teaching certificate from the Pennsylvania Department of Education (PDE) in grades PreK-4.

**PROGRAM OF STUDY FOR PREK-4 CERTIFICATION:**

B.A. or B.S. plus Master of Education (M.Ed.) in Elementary Education and PA Certification eligibility. This 42-credit (minimum) master’s program prepares students for certification as PreK-4 teachers. Students complete coursework in three categories:

**Core Course Work (21 credit hours)**

- **SPED 332** Education and Inclusion of Individuals with Special Needs in K-12 3
- **TLT 380** Child Development and Cognition 3

- **SPED 465** Advanced Inclusionary Practices in K-12 3
- **TLT XXX Elective with adviser approval** 3

- **Extended Field Experiences (6-9 credits)**
  - **TLT 440** Pre-professional Seminar 3
  - **TLT 444** General Education Student Teaching and Seminar 1-6

In order to be eligible for secondary certification, by the time a student finishes the program he or she must have demonstrated competence in the subject matter area of that certification. Each student upon admission meets with the content-area specialist in the field in which that student seeks secondary certification. The content-area specialist, who is a faculty member in the College of Arts and Sciences, reviews the student’s transcripts and compares that student’s coursework with the content-area guide sheet approved by the Pennsylvania Department of Education (PDE). Following this audit, the content-area specialist will identify what additional coursework in the content-area is needed, if any. The student is responsible for completing this coursework prior to applying for secondary certification. The credits for this course work are not included in the M.Ed. degree.

Students in the secondary teacher-preparation program are expected to have completed almost all their content area coursework prior to going out to student teach. This is important because student teachers need to have mastery of their content in order to fulfill their responsibilities to their students and to derive maximum benefit from the student teaching experience.

Distribution of coursework across undergraduate and graduate study:

**Sophomore Year (3 credit hours)**

**Junior Year (6 credit hours)**

**Senior Year (6 credit hours)**

**College of Education - Summer (6 credits)**

**College of Education - Fall (9 credits)**

**College of Education - Spring (3-6 credits)**

Students in this program unable to accrue enough credits outside their undergraduate degree programs may need to take additional credits after beginning graduate study in order to reach the 33-credit minimum.

Students in this program who wish to obtain the Master of Arts (M.A.) degree rather than the M.Ed. degree may petition to change to that degree after admission to graduate study. The M.A. degree requires 42 credits instead of 33 credits and has specific content-area expertise requirements. See the M.A. degree description for its requirements.
One of the 8 subject areas below:

In addition, students also earn eligibility for Instructional I teacher of Business, and (2) an M.Ed. degree in Secondary Education.

Rossin College of Engineering and Applied Sciences, or the College academic discipline from the College of Arts and Sciences, the P.C. master's degree in five years instead of the traditional six.

The College of Education offers a five-year degree program that is designed to allow students to earn both a bachelor's degree and a master's degree in five years instead of the traditional six.

Students in the 5-year program must have at least 3 credits "left over" from their bachelor's program to move across to the College of Education to put toward their master's degree.

In order to be eligible for PreK-4 certification, by the time a student finishes the program he or she must have demonstrated competence in the core content areas for that certification. At time of acceptance, each student will be informed of any additional content-area coursework he or she will be required to complete in order to demonstrate competence in the PreK-4 core content areas. The student is responsible for completing this coursework prior to applying for PreK-4 certification. The credits for this coursework are not included in the master's degree.

Distribution of coursework across undergraduate and graduate study:

Sophomore Year (3 credit hours)
- TLT 404 Diversity, Families, and School Collaborations in K-12 3
- TLT 405 Principles and Applications of K-12 Assessment 3
- TLT 407 Instructional Design for K-12 Classrooms 3
- TLT 409 K-12 Classroom Environment and Management 3
- TLT 411 Early Childhood Education 3

Development of Professional Skills (18 credit hours)
- TLT 412 Social Studies in PreK through 4th Grade 3
- TLT 420 Literacy in PreK through 4th Grade: Reading and Its Foundations 3
- TLT 422 Literacy in PreK through 4th Grade: Writing and Its Foundations 3
- TLT 426 Science in PreK through 4th Grade 3
- TLT 428 Mathematics and Numeracy in PreK through 4th Grade 3
- SPED 465 Advanced Inclusionary Practices in K-12 3

Extended Field Experience (3-6 credit hours)
- TLT 444 General Education Student Teaching and Seminar 1-6

In order to be eligible for PreK-4 certification, by the time a student finishes the program he or she must have demonstrated competence in the core content areas for that certification. At time of acceptance, each student will be informed of any additional content-area coursework he or she will be required to complete in order to demonstrate competence in the PreK-4 core content areas. The student is responsible for completing this coursework prior to applying for PreK-4 certification. The credits for this coursework are not included in the master's degree.

Distribution of coursework across undergraduate and graduate study:

Sophomore Year (3 credit hours)
- TLT 404 Diversity, Families, and School Collaborations in K-12 3
- TLT 405 Principles and Applications of K-12 Assessment 3
- TLT 407 Instructional Design for K-12 Classrooms 3
- TLT 409 K-12 Classroom Environment and Management 3

Program of Study:

Five-Year Bachelor's Plus Master of Education in Secondary Education and Teacher Certification

The College of Education offers a five-year degree program that is designed to allow students to earn both a bachelor's degree and a master's degree in five years instead of the traditional six.

The combined degree program leads to (1) a B.A./B.S. degree in an academic discipline from the College of Arts and Sciences, the P.C. Rossin College of Engineering and Applied Sciences, or the College of Business, and (2) an M.Ed. degree in Secondary Education. In addition, students also earn eligibility for Instructional I teacher certification from the Pennsylvania Department of Education (PDE) in one of the 8 subject areas below:

- Biology 7-12
- Chemistry 7-12
- Earth and Space Science 7-12
- English 7-12
- General Science 7-12

- Mathematics 7-12
- Physics 7-12
- Social Studies 7-12

Program of Study:
B.A. or B.S. plus Master of Education (M.Ed., 33 credits minimum) and Pennsylvania teacher certification eligibility. In addition to meeting the requirements for the bachelor's degree, students must satisfy the Pennsylvania Department of Education guidelines for demonstrated content-area competence (see below).

Students complete coursework in three categories:

Core Coursework (15 credits)
- SPED 332 Education and Inclusion of Individuals with Special Needs in K-12 3
- TLT 404 Diversity, Families, and School Collaborations in K-12 3
- TLT 405 Principles and Applications of K-12 Assessment 3
- TLT 407 Instructional Design for K-12 Classrooms 3
- TLT 409 K-12 Classroom Environment and Management 3

Extended Field Experiences (6-9 credits)
- TLT 440 Pre-professional Seminar 3
- TLT 444 General Education Student Teaching and Seminar 1-6

In order to be eligible for secondary certification, by the time a student finishes the program he or she must have demonstrated competence in the subject matter area of that certification. Each student upon admission meets with the content-area specialist in the field in which that student seeks secondary certification. The content-area specialist, who is a faculty member in the College of Arts and Sciences, reviews the student's transcripts and compares that student's coursework with the content-area guide sheet approved by the Pennsylvania Department of Education (PDE). Following this audit, the content-area specialist will identify what additional coursework in the content-area is needed, if any. The student is responsible for completing this coursework prior to applying for secondary certification. The credits for this course work are not included in the M.Ed. degree.

Students in the secondary teacher-preparation program are expected to have completed almost all their content area coursework prior to going out to student teach. This is important because student teachers need to have mastery of their content in order to fulfill their responsibilities to their students and to derive maximum benefit from the student teaching experience.

Distribution of coursework across undergraduate and graduate study:

Sophomore Year (3 credit hours)
Junior Year (6 credit hours)

Senior Year (6 credit hours)

College of Education - Summer (6 credits)

College of Education - Fall (9 credits)

College of Education - Spring (3-6 credits)

Students in this program unable to accrue enough credits outside their undergraduate degree programs may need to take additional credits after beginning graduate study in order to reach the 33-credit minimum.

In order to be eligible for secondary certification, by the time a student finishes the program he or she must have demonstrated competence in the subject matter area of that certification. Each student upon admission meets with the content-area specialist in the field in which that student seeks secondary certification. The content-area specialist, who is a faculty member in the College of Arts and Sciences, reviews the student’s transcripts and compares that student’s coursework with the content-area guide sheet approved by the Pennsylvania Department of Education (PDE). Following this audit, the content-area specialist will identify what additional coursework in the content-area is needed, if any. The student is responsible for completing this coursework prior to applying for secondary certification. For the MA degree, at least 12 credits of content area courses must be taken at Lehigh at the 200 level or higher.

Students in the secondary teacher-preparation program are expected to have completed almost all their content area coursework prior to going out to student teach. This is important because student teachers need to have mastery of their content in order to fulfill their responsibilities to their students and to derive maximum benefit from the student teaching experience.

Master of Arts in Secondary Education and Teacher Certification

This 42 credit (minimum) program prepares students for Pennsylvania Level I certification as secondary content-area teachers in one of 8 subject areas below and leads to eligibility for a master’s degree in secondary education:

- Biology 7-12
- Chemistry 7-12
- Earth and Space Science 7-12
- English 7-12
- General Science 7-12
- Mathematics 7-12
- Physics 7-12
- Social Studies 7-12

Students complete coursework in four categories:

### Core Coursework (15 credit hours)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPED 332</td>
<td>Education and Inclusion of Individuals</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>with Special Needs in K-12</td>
<td></td>
</tr>
<tr>
<td>TLT 404</td>
<td>Diversity, Families, and School Collaborations in K-12</td>
<td>3</td>
</tr>
<tr>
<td>TLT 405</td>
<td>Principles and Applications of K-12 Assessment</td>
<td>3</td>
</tr>
<tr>
<td>TLT 407</td>
<td>Instructional Design for K-12 Classrooms</td>
<td>3</td>
</tr>
<tr>
<td>TLT 409</td>
<td>K-12 Classroom Environment and Management</td>
<td>3</td>
</tr>
</tbody>
</table>

### Development of Professional Skills (12 credit hours)

Content-area teaching methods course with approval of your adviser (one of the following):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLT 431</td>
<td>Social Studies in Middle Level and High School Education</td>
<td>3</td>
</tr>
<tr>
<td>TLT 434</td>
<td>English in Middle Level and High School Education</td>
<td>3</td>
</tr>
<tr>
<td>TLT 436</td>
<td>Science in Middle Level and High School Education</td>
<td>3</td>
</tr>
<tr>
<td>TLT 438</td>
<td>Mathematics in Middle Level and High School Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Plus:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLT 432</td>
<td>Reading and Critical Thinking in Middle Level and High School Education</td>
<td>3</td>
</tr>
<tr>
<td>SPED 465</td>
<td>Advanced Inclusionary Practices in K-12</td>
<td>3</td>
</tr>
</tbody>
</table>

TLT XXX: Elective with advisor approval. [These credits may be used for content-area course.]

### Extended Field Experiences (6 credit hours)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLT 440</td>
<td>Pre-professional Seminar</td>
<td>3</td>
</tr>
<tr>
<td>TLT 444</td>
<td>General Education Student Teaching and Seminar</td>
<td>1-6</td>
</tr>
</tbody>
</table>

### Content Area Knowledge (12 credit hours)

Twelve credits are required for the M.A. degree and these courses must be taken from Lehigh departments outside the College of Education at the 200 level and above.

In order to be eligible for secondary certification, by the time a student finishes the program he or she must have demonstrated competence in the subject matter area of that certification. Each student upon admission meets with the content-area specialist in the field in which that student seeks secondary certification. The content-area specialist, who is a faculty member in the College of Arts and Sciences, reviews the student’s transcripts and compares that student’s coursework with the content-area guide sheet approved by the Pennsylvania Department of Education (PDE). Following this audit, the content-area specialist will identify what additional coursework in the content-area is needed, if any. The student is responsible for completing this coursework prior to applying for secondary certification. For the MA degree, at least 12 credits of content area courses must be taken at Lehigh at the 200 level or higher.

Students in the secondary teacher-preparation program are expected to have completed almost all their content area coursework prior to going out to student teach. This is important because student teachers need to have mastery of their content in order to fulfill their responsibilities to their students and to derive maximum benefit from the student teaching experience.

Master of Education in Elementary Education and PreK-4 Teacher Certification

This 42-credit (minimum) program prepares students for Pennsylvania Level I certification as PreK-4 teachers and leads to the awarding of a master’s degree in Elementary Education. Students complete coursework in three categories:

### Core Course Work (21 credit hours)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPED 332</td>
<td>Education and Inclusion of Individuals with Special Needs in K-12</td>
<td>3</td>
</tr>
<tr>
<td>TLT 380</td>
<td>Child Development and Cognition</td>
<td>3</td>
</tr>
<tr>
<td>TLT 404</td>
<td>Diversity, Families, and School Collaborations in K-12</td>
<td>3</td>
</tr>
<tr>
<td>TLT 405</td>
<td>Principles and Applications of K-12 Assessment</td>
<td>3</td>
</tr>
<tr>
<td>TLT 407</td>
<td>Instructional Design for K-12 Classrooms</td>
<td>3</td>
</tr>
<tr>
<td>TLT 409</td>
<td>K-12 Classroom Environment and Management</td>
<td>3</td>
</tr>
<tr>
<td>TLT 411</td>
<td>Early Childhood Education</td>
<td>3</td>
</tr>
</tbody>
</table>

### Development of Professional Skills (18 credit hours)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLT 412</td>
<td>Social Studies in PreK through 4th Grade</td>
<td>3</td>
</tr>
<tr>
<td>TLT 420</td>
<td>Reading and Literacy in PreK through 4th Grade</td>
<td>3</td>
</tr>
<tr>
<td>TLT 422</td>
<td>Language Arts in PreK through 4th Grade</td>
<td>3</td>
</tr>
<tr>
<td>TLT 426</td>
<td>Science in PreK through 4th Grade</td>
<td>3</td>
</tr>
<tr>
<td>TLT 428</td>
<td>Mathematics and Numeracy in PreK through 4th Grade</td>
<td>3</td>
</tr>
<tr>
<td>SPED 465</td>
<td>Advanced Inclusionary Practices in K-12</td>
<td>3</td>
</tr>
</tbody>
</table>

### Extended Field Experience (3 credit hours)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLT 444</td>
<td>General Education Student Teaching and Seminar</td>
<td>1-6</td>
</tr>
</tbody>
</table>

Thirty (30) credits minimum is required for the master’s degree. In order to be eligible for PreK-4 certification, by the time a student finishes the program he or she must have demonstrated competence in the core content areas for that certification (English, mathematics, science, social studies). At time of acceptance, each student will be informed of any additional content-area coursework he or she will be required to complete in order to demonstrate competence in the
PreK-4 core content areas (language arts, mathematics, science and social studies). The student is responsible for completing this coursework prior to applying for PreK-4 certification. The credits for this coursework are not included in the master’s degree.

**Master of Education in Secondary Education and Teacher Certification**

This 33 credit (minimum) program of study prepares students for Pennsylvania Level I certification as secondary content-area teachers in one of the subject areas (below) and leads to eligibility for a master’s degree in secondary education:

- Biology 7-12
- Chemistry 7-12
- Earth and Space Science 7-12
- English 7-12
- General Science 7-12
- Mathematics 7-12
- Physics 7-12
- Social Studies 7-12

Students complete coursework in three categories:

**Core Coursework (15 credit hours)**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>SPED 332</td>
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<td>TLT 407</td>
<td>3</td>
</tr>
<tr>
<td>TLT 409</td>
<td>3</td>
</tr>
</tbody>
</table>

**Development of Professional Skills (12 credit hours)**

Content-area teaching methods course with approval of your adviser (one of the following):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLT 431</td>
<td>3</td>
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<tr>
<td>TLT 434</td>
<td>3</td>
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<tr>
<td>TLT 436</td>
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<tr>
<td>TLT 438</td>
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<tr>
<td>TLT 432</td>
<td>3</td>
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<tr>
<td>SPED 465</td>
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</tbody>
</table>

**Extended Field Experiences (6 credit hours)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>TLT 440</td>
<td>1-6</td>
</tr>
<tr>
<td>TLT 444</td>
<td>3</td>
</tr>
</tbody>
</table>

In order to be eligible for secondary certification, by the time a student finishes the program he or she must have demonstrated competence in the subject matter of that certification. Each student upon admission meets with the content-area specialist in the field in which that student seeks secondary certification. The content-area specialist, who is a faculty member in the College of Arts and Sciences, reviews the student’s transcripts and compares that student’s coursework with the content-area guide sheet approved by the Pennsylvania Department of Education (PDE). Following this audit, the content-area specialist will identify what additional coursework in the content-area is needed, if any. The student is responsible for completing this coursework prior to applying for secondary certification. The credits for this coursework are not included in the M.Ed. degree.

Students in the secondary teacher-preparation program are expected to have completed all their coursework prior to going out to student teach. This is important because student teachers need to have mastery of their content in order to fulfill their responsibilities to their students and to derive maximum benefit from the student teaching experience.

**Master of Education in Special Education and Special Education PreK-8 Additional Certification**

This 32-credit (minimum) master’s program is designed for graduate students seeking Pennsylvania additional certification as Special Education PreK-8 teachers.

Students take coursework in four categories:

**Core Course Work (18 credits)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPED 404</td>
<td>3</td>
</tr>
<tr>
<td>SPED 418</td>
<td>3</td>
</tr>
<tr>
<td>SPED 429</td>
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<tr>
<td>SPED 432</td>
<td>3</td>
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<tr>
<td>SPED 452</td>
<td>3</td>
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<tr>
<td>SPED 465</td>
<td>3</td>
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</tbody>
</table>

**Course Work in the Area of Specialization (6 credits)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPED 411</td>
<td>3</td>
</tr>
<tr>
<td>SPED 419</td>
<td>3</td>
</tr>
</tbody>
</table>

**Education Electives (6 credits with approval of the adviser)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPED 420</td>
<td>1-3</td>
</tr>
</tbody>
</table>

**Intensive Teaching Experience (2 credits)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPED 420</td>
<td>Field Experience: Special Education Certification</td>
</tr>
</tbody>
</table>

**Master of Education in Special Education and Special Education PreK-8 Dual Certification**

This 30 credit (minimum) master’s program is designed for students seeking Pennsylvania certification as Special Education PreK-8 teachers (with dual certification eligibility).

Students complete the following coursework:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPED 332</td>
<td>3</td>
</tr>
<tr>
<td>SPED 404</td>
<td>3</td>
</tr>
<tr>
<td>SPED 405</td>
<td>3</td>
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<tr>
<td>SPED 409</td>
<td>3</td>
</tr>
<tr>
<td>SPED 411</td>
<td>3</td>
</tr>
<tr>
<td>SPED 418</td>
<td>3</td>
</tr>
<tr>
<td>SPED 419</td>
<td>3</td>
</tr>
</tbody>
</table>

**NOTE:** Students seeking dual certification in general education PreK-4 (initial certification) and Special Education PreK-8 (additional certification) must complete an additional eight courses (24 credits) that are not listed above [including SPED 442, General Education and Special Education Student Teaching and Seminar]. These courses/credits are required to be eligible for dual certification but are not part of the master’s program in Special Education.
Master of Education in Special Education and Special Education 7-12 Additional Certification
This 32-credit (minimum) master’s program is designed for graduate students seeking Pennsylvania additional certification as Special Education 7-12 teachers.

Students take coursework in four categories:

Core Course Work (18 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPED 404</td>
<td>Diversity, Families, and School Collaborations</td>
<td>3</td>
</tr>
<tr>
<td>SPED 418</td>
<td>Alternative Curricular Approaches</td>
<td>3</td>
</tr>
<tr>
<td>SPED 429</td>
<td>Professional Seminar</td>
<td>3</td>
</tr>
<tr>
<td>SPED 432</td>
<td>Positive Behavior Support</td>
<td>3</td>
</tr>
<tr>
<td>SPED 452</td>
<td>Assessment in Special Education</td>
<td>3</td>
</tr>
<tr>
<td>SPED 465</td>
<td>Advanced Inclusionary Practices in K-12</td>
<td>3</td>
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</tbody>
</table>

Course Work in the Area of Specialization (6 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPED 421</td>
<td>Academic Interventions: Secondary Level</td>
<td>3</td>
</tr>
<tr>
<td>SPED 423</td>
<td>Transition to Post-school Life</td>
<td>3</td>
</tr>
</tbody>
</table>

Education Electives (6 credits, with approval of the adviser)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPED 420</td>
<td>Field Experience: Special Education Certification</td>
<td>1-3</td>
</tr>
</tbody>
</table>

Master of Education in Special Education and Special Education 7-12 Dual Certification
This 30 credit (minimum) master’s program is designed for graduate students seeking Pennsylvania certification as Special Education 7-12 teachers (with dual certification eligibility).

Students complete the following coursework:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPED 332</td>
<td>Education and Inclusion of Individuals with Special Needs in K-12</td>
<td>3</td>
</tr>
<tr>
<td>SPED 404</td>
<td>Diversity, Families, and School Collaborations in K-12</td>
<td>3</td>
</tr>
<tr>
<td>SPED 405</td>
<td>Principles and Applications of K-12 Assessment</td>
<td>3</td>
</tr>
<tr>
<td>SPED 409</td>
<td>K-12 Classroom Environment and Management</td>
<td>3</td>
</tr>
<tr>
<td>SPED 418</td>
<td>Alternative Curricular Approaches</td>
<td>3</td>
</tr>
<tr>
<td>SPED 421</td>
<td>Academic Interventions: Secondary Level</td>
<td>3</td>
</tr>
<tr>
<td>SPED 423</td>
<td>Transition to Post-school Life</td>
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</tr>
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<td>Positive Behavior Support</td>
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</tr>
<tr>
<td>SPED 452</td>
<td>Assessment in Special Education</td>
<td>3</td>
</tr>
<tr>
<td>SPED 465</td>
<td>Advanced Inclusionary Practices in K-12</td>
<td>3</td>
</tr>
</tbody>
</table>

NOTE: Students seeking dual certification in general education 7-12 (initial certification) and Special Education 7-12 (additional certification) must complete 5 courses (15 credits) that are not listed above [including SPED 442, General Education and Special Education Student Teaching and Seminar]. These courses/credits are required to be eligible for dual certification but are not part of the master’s program in Special Education.

Special Education Courses

SPED 330 Special Topics in Special Education 1-3 Credits
Current issues in the education of individuals with special needs. Titles vary. Repeat Status: Course may be repeated.
SPED 411 (TLT 411) Early Childhood Education 3 Credits
Introduction to development of early childhood education in the U.S. Emphasizes evidence-based methods and materials to assist young children in the learning process, including arrangement of indoor/outdoor space, developmentally appropriate practices, and the design of instruction to foster young children's emotional, social, language, cognitive, physical, and creative development. Includes embedded instruction and adaptations for students with identified disabilities, children at risk for developing disabilities, and children with culturally and linguistically diverse backgrounds, and family collaboration within the instructional planning process.

SPED 416 Autism Spectrum Disorders and Evidence-Based Practices 3 Credits
This course provides an overview of Autism Spectrum Disorders (ASD) and an introduction to the evidence based practices (EBPs) for practitioners, based on recently published and publicly available reports and other supporting materials. Assignments help students translate EBPs, grounded in Applied Behavior Analysis (ABA), into concrete goals and practices that have a meaningful impact on the day-to-day functioning of students with ASD.

SPED 418 Alternative Curricular Approaches 3 Credits
Curricular and instructional methods for students with pervasive support needs (e.g., intellectual disabilities, autism) who follow an alternative or modified curriculum. Methods for developing an individualized curriculum, embedding instruction and accessing the general education curriculum, systematic instruction, and instruction for full participation in school, home, and community settings are covered. Strategies for facilitating emergent social and communication skills, teaching augmentative and alternative communication, and use of assistive technologies to enhance self-directed learning are included.

SPED 419 Academic Interventions: PreK-8 3 Credits
Methods course designed to address the needs of students with disabilities to increase knowledge of instruction of comprehensive pre-literacy and literacy skills and their components. Additionally, pre-reading, reading, language arts, mathematics, and content area reading literacy skills in primary and elementary settings will be addressed. Emphasis on instructional planning, differentiated instructional strategies, appropriate assessments modifications, and adaptations needed for use with individuals with disabilities through a conceptual foundation in the components of reading and the integration of research validated interventions.

SPED 420 Field Experience: Special Education Certification 1-3 Credits
Intensive practice in the application of principles of teaching in a supervised experience in the schools for students who already hold another content area certification (e.g., elementary, middle school, secondary). Consent of the program.

SPED 421 Academic Interventions: Secondary Level 3 Credits
Methods course designed to increase knowledge of core components of reading in secondary settings, language arts, mathematics, and content area literacy skills for students with disabilities and those who are culturally and/or linguistically diverse. Emphasis on instructional planning, differentiated instructional strategies, appropriate assessments modifications, and adaptations needed for use with individuals with disabilities through a conceptual foundation in the components of reading and the integration of research validated interventions.

SPED 423 Transition to Post-school Life 3 Credits
Best instructional practices for preparing students for post-school adult life: employment, post-secondary education, and community participation in inclusive settings. Topics include transition planning, personcentered and work-based assessments, family and interagency collaboration, innovative post-school and in-school transition services, and self-determination. Evidence-based practices to promote positive student outcomes are emphasized.

SPED 425 Applied Behavior Analysis Practicum 1-6 Credits
This practicum is designed to shape supervisee's clinical and behavioral skills as well as his/her professional, ethical, and collegial behavior. This experience embeds the concepts, principles, methods, and applications of behavior analysis learned in the course sequence and applies them to educational, clinical, and community/home settings.

Repeat Status: Course may be repeated.

SPED 427 Contemporary Service Delivery Models 3 Credits
This course is designed to provide students with knowledge and skills related to contemporary academic and behavioral service delivery models such as multi-tier systems of supports (MTSS). Relevant research literature will be explored to promote critical reflection on the models. Students will gain knowledge and skills in the following areas: (1) core components of service delivery models; (2) implementation of the services delivery model within k-12 schools; and (3) legal, ethical, and administrative issues related to service delivery implementation.

SPED 429 Professional Seminar 3 Credits
Master’s seminar on current issues in the area of special education and research design. Must have 18 graduate credits in special education.

SPED 430 Advanced Seminar in Special Education 3 Credits
Advanced issues relating to the field of special education. Titles will vary.

Repeat Status: Course may be repeated.

SPED 432 Positive Behavior Support 3 Credits
Design of comprehensive, multi-component behavior support plans for individuals with a variety of disabilities who engage in problem behavior. Topics include functional assessment, antecedent and setting event interventions, replacement behaviors, consequence and crisis procedures, lifestyle interventions, and teaming strategies. Assessment focuses on the link between curriculum, academic performance, and behavior problems. Promotes consideration of diverse populations for understanding behavioral differences. Describes strategies for ongoing monitoring and maintenance of behavior reductions.

SPED 434 Applied Research Practicum 1-3 Credits
Designing and conducting research projects in applied settings.

SPED 440 Early Academic Intervention 3 Credits
Explores the potential effectiveness of interventions to prevent academic failure of children at risk for learning difficulties. Emphasis on research-based interventions in the areas of beginning reading, language and vocabulary, writing and spelling, awareness of print and exposure to print, and mathematics (number sense).

SPED 442 (TLT 442) General Education and Special Education Student Teaching and Seminar 1-6 Credits
Intensive practice in the application of principles of teaching for both general and special education settings in a supervised internship in the schools (for dual certification). Regular meetings among student teachers for critical analysis and discussion of classroom instructional practices, as illustrated by the student teachers’ experiences in the schools. Practical mentoring on professionalism, applying differentiated instructional models in real-world setting, and aligning instruction with standards. Consent of program director required.

SPED 452 Assessment in Special Education 3 Credits
Identification, administration and interpretation of a variety of assessments used for planning and to determine special education eligibility and to assess social, emotional, behavioral, and academic functioning. Discusses strengths and limitations of various models and assessment, both formal and informal, instruments used to evaluate the need for special education. Describes strategies to enhance the relationship between assessment and service delivery. Addresses assessment practices to identify curricular needs consistent with the RtI/RtII framework.
SPED 465 Advanced Inclusionary Practices in K-12 3 Credits
Advanced techniques grounded in current research-based methods and best practice for educating and assessing students with disabilities, students from diverse backgrounds, and English language learners using a standards-aligned system. Accommodations, modifications, planning for physical and instructional inclusion through embedded strategic instruction, adaptations, and curriculum overlapping. Addresses decision hierarchies for level of instructional adaptation and social inclusion methods through social facilitation techniques. Explores critical factors in developing, implementing, and modifying curriculum using evidence-based practices. Explores collaborative co-planning and co-teaching models.

Prerequisites: SPED 332

SPED 482 Practicum in University Teaching: Special Education 1-4 Credits
Mentored and guided co-teaching focused on the design, organization, pedagogy and assessment of university courses in Special Education. Students in this course will work with a faculty member to apply best practices in university teaching with feedback while co-teaching students in a course in the College of Education. Students taking the course must meet the college standards for participation and be approved by the program director and department chair. May be repeated for credit.

Repeat Status: Course may be repeated.

SPED 490 Doctoral Seminar in Special Education 3 Credits
Advanced knowledge of issues and research in the education of individuals with special needs. Topics will vary. Must be admitted for doctoral studies.

Repeat Status: Course may be repeated.

SPED 499 Dissertation 1-15 Credits
Repeat Status: Course may be repeated.

Teaching Learning Technology Courses
TLT 367 (ES 367) Environmental Education 3 Credits
Introductory environmental education course designed to prepare students to implement environmental education opportunities in formal and non-formal education settings. Topics include history and philosophy of environmental education, environmental laws and regulations, GIS, environmental issues and decision making, curriculum integration and environmental education teaching methodologies. This is a Web enhanced containing both online and fieldwork components.

TLT 368 (ES 368) Teaching and Learning with Geospatial Tools 3 Credits
Exploration of geospatial tools, including but not limited to global positioning systems (GPS), geographic information systems (GIS), and related visualization tools (e.g. Google Earth). Application of these tools and techniques to instructional settings, including appropriate pedagogy and assessment.

TLT 380 Child Development and Cognition 3 Credits
Introduction to physical, motor, perceptual, cognitive, language, emotional, social, and gender development of young children and adolescents. Developmental history, theories, and research, as well as the effect of culture, family, peers, media, and schooling on the individual and groups. Students investigate typical and atypical development and explore the implications of individual differences for teaching and learning, with an emphasis on evidence-based instructional practices designed to optimize the growth and development of all learners. Explores mental health issues and at-risk students.

TLT 391 Workshops 1-3 Credits
Cooperative study of current educational problems. Provides elementary, secondary, and special education teachers an opportunity to work at their own teaching levels and in their own fields. Limited to six credits during a summer session but the student may register for more than one workshop provided there is no duplication in subject matter.

Repeat Status: Course may be repeated.

TLT 394 Special Topics in Education: 1-3 Credits
Examination of a topic of research or professional interest in education. Subtitle will vary. May be repeated for credit as subtitle varies.

Repeat Status: Course may be repeated.

TLT 401 Overview of Teaching and Learning 3 Credits
Foundations and key concepts in learning and instructional theory. Cognition and brain-based research with a focus on innovations in teaching and learning.

TLT 402 Critical Reading and Writing 3 Credits
Using literature to build persuasive written arguments. Searching and identifying promising sources, distilling research findings, synthesizing literature to support an argument, and organizing written materials to enhance persuasiveness. Suited to those writing qualifying projects, dissertation proposals, dissertations, funding proposals, conference proposals, and journal articles.

TLT 403 Instructional Design 3 Credits
Social, cognitive, and environmental factors in designing for teaching and learning. Systems theory applied to learning settings. Special emphasis on motivational theories and technological affordances.

TLT 404 (SPED 404) Diversity,Families, and School Collaborations in K-12 3 Credits
Cultural and linguistic diversity as critical variables in educational equity for all learners, including ELL. Explores home-school partnerships, family and professional collaboration, and teacher self-awareness. Implementing culturally sensitive and responsive classroom practices as well as forming collaborative relationships with families that respect diversity of family contexts. Collaborative, multidisciplinary teaming to support, optimize, and advocate for student’s educational needs and connect to community services and resources available to individuals and families. Addresses family mental health issues and wraparound services.

TLT 405 (SPED 405) Principles and Applications of K-12 Assessment 3 Credits
Assessment applied to learning in classroom learning environments, including universal screening and progress monitoring. Discusses assessment approaches, ways to implement assessment, and use of assessment tools to monitor all students, including ELL and students with disabilities. Use of data-management and grading systems. Addresses diagnostic assessments for student placement and analysis of assessment data to tailor instruction to diverse student needs. Emphasis on research-based practices of assessment to inform instructional decision-making consistent with the RtII framework.

TLT 407 Instructional Design for K-12 Classrooms 3 Credits
Introduces the systematic design of instruction following the Response to Instruction and Intervention (RtII) and Universal Design for Learning models. Explores theories of learning and instructional applications as a part of technology-based and standards-aligned classroom education grounded in the use of a quality, research-based core curriculum and effective instructional practices to meet the needs of all learners. Addresses appropriate use of instructional technologies for universal learning. Students will plan, design, and develop student-centered, standards-aligned, technology-supported instruction and appropriate learner assessments.

TLT 409 (SPED 409) K-12 Classroom Environment and Management 3 Credits
Designing inclusive classroom environments that maximize learning. Emphasis on fostering a community of learners using connections among classroom arrangement, classroom management, and cognitive development to create positive learning outcomes for all students, including ELL learners and students with disabilities. Addresses the tiered model of prevention and positive behavior support, including the role of functional assessment and individual positive behavior support plans in classroom management. Highlights the ways a positive climate for learning involves establishing and maintaining partnerships with families.
TLT 410 The Writing Process 3 Credits
Developmental characteristics of children's writing and relationships among writing, spelling and reading. Predictors of writing achievement, teaching strategies and activities, and evaluation schemes will be emphasized. K-12.

TLT 411 (SPED 411) Early Childhood Education 3 Credits
Introduction to development of early childhood education in the U.S. Emphasizes evidence-based methods and materials to assist young children in the learning process, including arrangement of indoor/ outdoor space, developmentally appropriate practices, and the design of instruction to foster young children's emotional, social, language, cognitive, physical, and creative development. Includes embedded instruction and adaptations for students with identified disabilities, children at risk for developing disabilities, and children with culturally and linguistically diverse backgrounds, and family collaboration within the instructional planning process.

TLT 412 Social Studies in PreK through 4th Grade 3 Credits
Overview of Pennsylvania’s PreK-4 Standards for social studies, including: Pennsylvania history, United States history, economics, civics and government, citizenship, political science/government, and geography. Development, implementation and evidence-based assessment of preK-grade 4 social studies curricula. Effective teaching techniques such as lesson planning, inclusive practices, integrating instructional technologies into instruction, reflecting on teaching, and the latest research-based teaching and assessment methods. Emphasis on alignment of instruction with standards.

TLT 420 Literacy in PreK through 4th Grade: Reading and Its Foundations 3 Credits
Knowledge of the theories, methods, and materials that can be used to teach reading and early reading skills in PreK-4th grade. Understanding of the skills of successful readers. Evidence-based practices in reading instruction and data-based decision-making to teach reading to all students, including students with disabilities and English learners. Strategies to partner with caregivers to enhance reading an early reading skills.

TLT 422 Literacy in PreK through 4th Grade: Writing and Its Foundations 3 Credits
Knowledge of the theories, methods, and materials that can be used to teach writing and foundational skills in PreK-4. Understanding of the developmental aspects of writing and the skills of successful writers. Evidence-based practices in writing instruction and data-based decision-making to teach writing to all students, including students with disabilities and English learners.

TLT 424 Children’s Literature in Elementary Education 3 Credits
Role of literature in the instructional program of the elementary schools. Use of trade books for individualized instruction in reading, language arts, mathematics, science, and social studies.

TLT 426 Science in PreK through 4th Grade 3 Credits
Overview of inquiry-based activities and investigations to promote science learning in preK-grade 4 classrooms. Emphasis on Pennsylvania’s PreK-4 Standards for Science and Technology and Environment and Ecology standards and aligning instruction with standards. Activities include planning effective lessons, trying out new methods of teaching, reflective practice, inclusionary methods, and integrating instructional technologies into science learning. Evidence-based assessment types are highlighted within instructional contexts.

TLT 428 Mathematics and Numeracy in PreK through 4th Grade 3 Credits
Trends, theories, activities, and manipulative materials for teaching early numeracy and elementary mathematics. Pre-school development and in-school skills and concepts, including sets, systems of numeration, experience with numbers, number operations and concepts, numerals, measurement, early algebra, and elements of geometry. Implications of developmental differences and early non-school experiences on learner readiness and skills. Helping parents support their children’s mathematics conceptual development. Research-based practices and inclusionary approaches to teach mathematics to learners from a variety of backgrounds and across ability levels.

TLT 431 Social Studies in Middle Level and High School Education 3 Credits
Middle and high school curriculum, content, teaching strategies, and instructional materials for the social studies. Emphasis on organizing content, using appropriate methods, testing and evaluation, and appropriate integration of technology. Overview of Pennsylvania’s 4-8 and 8-12 standards for secondary studies and related standards from the National Council for the Social Studies and other national organizations. Explores relevant research, courses of study, textbooks, and teacher-made materials. Addresses inclusive evidence-based and standards-aligned instructional approaches and techniques, including co-teaching.

TLT 432 Reading and Critical Thinking in Middle Level and High School Education 3 Credits
Development of reading in the secondary content areas (English/ language arts, mathematics, science, social studies). Highlights effective teaching strategies in critical areas, such as higher order reading and study skills. Addresses analysis of evidence based methods and current research for improving the reading development and analytical skills of all students.

TLT 434 English in Middle Level and High School Education 3 Credits
Curricula, philosophy, methods, strategies, and materials for the teaching of middle and high school English. Literature, genres, and the nature of text and text differences. Critical analysis and drawing inferences from narrative text and poetry. Techniques for teaching and enhancing writing in various styles. Applications of technology and assessment principles. Addresses inclusive evidence-based and standards-aligned instructional approaches and techniques, including co-teaching.

TLT 436 Science in Middle Level and High School Education 3 Credits
Overview of inquiry-based activities and investigations to promote science learning in secondary science classrooms. Emphasis on aligning instruction with Pennsylvania’s Standards for Science and Technology and Environment and Ecology standards. Activities include planning effective lessons, trying out new methods of teaching, inclusionary methods, reflective practice, and integrating instructional technologies into science learning. Evidence-based assessment types highlighted within instructional contexts.

TLT 438 Mathematics in Middle Level and High School Education 3 Credits
Standards-based and technology-intensive curricula, instructional activities, and manipulative aids for mathematics in middle level and high schools. This course models and explores an investigative and hands-on approach to secondary mathematics instruction. Particular attention given to learning theories, curriculum issues, and recommendations arising from state, national, and international assessments. Research-based practices and inclusionary approaches to teach mathematics to learners from a variety of backgrounds and across a range of abilities. Addresses standards-aligned instructional approaches and techniques, including co-teaching.

TLT 440 Pre-Professional Seminar 3 Credits
Study, directed observation of, and initial practice in the various phases of teaching in secondary schools. Guided opportunities to try out strategies to facilitate the inclusion of special education students, differentiated instructional practices, and standards-aligned and evidence-based instructional approaches in actual school settings. Consent of program coordinator required.

TLT 442 (SPED 442) General Education and Special Education Student Teaching and Seminar 1-6 Credits
Intensive practice in the application of principles of teaching for both general and special education settings in a supervised internship in the schools (for dual certification). Regular meetings among student teachers for critical analysis and discussion of classroom instructional practices, as illustrated by the student teachers’ experiences in the schools. Practical mentoring on professionalism, applying differentiated instructional models in real-world setting, and aligning instruction with standards. Consent of program director required.
TLT 444 General Education Student Teaching and Seminar 1-6 Credits
Intensive practice in the application of principles of teaching for general education settings in a supervised internship in the schools. Regular meetings among student teachers for critical analysis and discussion of classroom instructional practices, as illustrated by the student teachers’ experiences in the schools. Practical mentoring on professionalism, applying differentiated instructional models in real-world setting, and aligning instruction with standards. Consent of program director required.

TLT 454 Applied Instructional and Interface Design Principles 3 Credits
Exploration and application of design models for learning. Special emphasis on the application of perception theory, communication theory, and learning theory to the design of media for teaching and learning.
Prerequisites: TLT 403

TLT 456 Instructional Design and Development Studio 3 Credits
Studio-based, authentic and collaborative design experiences led by a faculty mentor. Students work in teams to complete substantial multimedia design and development projects.
Prerequisites: TLT 454 and TLT 460

TLT 458 Introduction to Multimedia Programming and Resource Development for Learning 3 Credits
Introduction to programming and resource development tools used in the creation of interactive multimedia teaching and learning materials.

TLT 460 Advanced Multimedia Programming and Resource Development for Learning 3 Credits
Advanced exploration of programming and resource development tools used in the creation of interactive teaching and learning materials.
Prerequisites: TLT 458

TLT 462 Special Topics in Development of Instructional Resources and Technologies for Learning 1-3 Credits
We know the use of technology in education will continue to increase. This course extrapolates current research to envision the innovations we can expect in a planning horizon of 2 to 5 years. We will study schools and systems that use emerging technologies today that could be widely adopted tomorrow. The course focuses equally on technology and pedagogy.
Repeat Status: Course may be repeated.

TLT 466 Field Experience: General Education Certification 1-3 Credits
Intensive practice in the application of principles of teaching in general education in a supervised experience in the schools for students who already hold special education certification. Practical mentoring on professionalism, applying differentiated instructional models in real-world setting, and aligning instruction with standards. Consent of the program director.

TLT 470 Technology for Teaching and Learning 3 Credits
Analysis of available technologies (hardware, software, and Web resources), and identification of technologies matched to learner needs in traditional and/or non-traditional settings.

TLT 472 Online Teaching and Learning 3 Credits
Examination of contemporary research on online learning and recognized best practices on the design and delivery of online, hybrid, and/or flipped courses or course modules. Emphasis on online activities to experience ways to maximize instructor presence and student engagement, collaboration, and achievement.

TLT 474 Large-scale Planning and Implementation of Educational Technology 3 Credits
Addresses topics such as planning, maintaining, funding, networking, staffing, staff development, and monitoring of educational technology implementations.

TLT 476 Assessment of Instructional Technologies 3 Credits
Techniques for evaluating technology implementations for teaching and learning. Focus on topics such as instrumentation, data collection and analysis, drawing conclusions from data sets, and preparing reports for stakeholders.