

Department of STEM Education & Professional Studies

Web Site: <http://www.odu.edu/stemps> (<http://www.odu.edu/stemps/>)

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The Department of Science, Technology, Engineering and Mathematics (STEM) Education and Professional Studies (STEMPS) is an academic leader in graduate studies related to education specialists, including, instructional design and technology, marketing education, career and technical education, library science, and business and industry training. It offers the M.S., M.S.Ed, and the Ph.D. in Education with programs in occupational and technical studies (OTS) and instructional design and technology (IDT). The department also offers licensure and teaching endorsement programs. Due to changing University requirements, national accreditation standards, and Commonwealth licensure regulations, the programs in the Darden College of Education and Professional Studies are under constant revision. Any changes resulting from these factors supersede the program requirements described in the catalog. Students should obtain current program information from their advisors and the Darden College of Education and Professional Studies website at <http://education.odu.edu/>.

Individual programs are described on the following pages.

Instructional Design and Technology Programs

- Master of Science in Education - Elementary Education – Instructional Design and Technology
- Master of Science in Education - Secondary Education – Instructional Design and Technology
- Doctor of Philosophy, Education - Instructional Design and Technology Concentration
- Graduate Certificate in Education and Training in Modeling and Simulation
- Graduate Certificate in Human Performance Technology

Occupational and Technical Studies Programs

- Master of Science - Occupational and Technical Studies, with emphasis area in Business and Industry Training
- Education Specialist - Educational Leadership - Occupational & Technical Studies Concentration
- Doctor of Philosophy - Education - Occupational and Technical Studies Concentration

Post Baccalaureate Teacher Licensure

- Technology Education
- Marketing Education
- Endorsement Program in Industrial Cooperative Training

Library Science - Master of Science in Library and Information Studies

- Master of Science in Library and Information Studies
- Master of Science in Library and Information Studies with Concentration in School Librarianship
- Graduate Certificate in School Library Practice (for those with an MLIS)

Post-Baccalaureate Endorsement Teacher Education Programs

The Post-Baccalaureate Endorsement program is an approved teacher education program for individuals who have completed a bachelor's degree

from a regionally accredited institution and wish to qualify for a Virginia teaching license. Students applying for admission into this approved teacher education program are considered graduate non-degree status and must meet the college's requirements for admitting students into an approved teacher education program. Admission to Old Dominion University does not guarantee admission into degree and/or teacher preparation programs in the Darden College of Education and Professional Studies. Program sheets for the Post-Baccalaureate Endorsement programs are available in the Office of Clinical Experiences.

Admission, Continuance, and Exit Requirements for Post-Baccalaureate Teacher Education Programs

Admission

Students seeking admission into the post-baccalaureate endorsement program must:

1. apply for admission to Old Dominion University as graduate non-degree seeking student;
2. have achieved an overall GPA of 2.75 in the baccalaureate degree official transcript for post-baccalaureate programs offered at the undergraduate level and 2.80 for post-baccalaureate programs offered at the graduate level;
3. have earned a grade of C or C- (as determined by the specific academic department);
4. have math scores via ACT, SAT, Praxis Core, or Praxis I (if the scores were earned by December 31, 2013) or approved substitute test scores as prescribed by the Virginia Board of Education assessment for admission to an approved teacher education program;
5. interview with and receive recommendation for admittance from a department representative, Teacher Education Services advisor, or distance learning representative;
6. submit the Post-Baccalaureate Endorsement Program Application (<http://www.odu.edu/content/dam/odu/col-dept/teacher-education-services/docs/post-baccalaureate-endorsement-program-application.pdf>);
7. be aware that only 12 hours of professional education courses from another institution may transfer into a post-baccalaureate endorsement program and that practicum and/or student teaching courses are not eligible for transfer;
8. complete the professional dispositions self-survey;
9. attach the completed authorization for the release of any disciplinary action on file with the Office of Student Conduct and Academic Integrity.

Students who do not meet regular admission requirements may meet provisional admission into the post-baccalaureate endorsement program. For provisional status, a student must:

1. apply for admission to Old Dominion University as a graduate non-degree seeking student;
2. have achieved an overall GPA of 2.5-2.74 in the baccalaureate degree official transcript;
3. have earned a grade of C or C- (as determined by the specific academic department);
4. have math scores via ACT, SAT, Praxis Core, or Praxis I (if the scores were achieved by December 31, 2013) or approved substitute test scores as Prescribed Virginia Board of Education Assessment for admission to an approved teacher education program;
5. interview with and receive recommendation for admittance from a department representative, Teacher Education Services advisor, or distance learning representative;
6. submit the Post-Baccalaureate Endorsement Program Application (<http://www.odu.edu/content/dam/odu/col-dept/teacher-education-services/docs/post-baccalaureate-endorsement-program-application.pdf>);
7. be aware that only 12 hours of professional education courses from another institution may transfer into a post-baccalaureate endorsement program and that practicum and/or student teaching courses are not eligible for transfer;

- complete the professional dispositions self-survey;
- attach the completed authorization for the release of any disciplinary action on file with the Office of Student Conduct and Academic Integrity.

Students who wish to apply to a graduate program while in the post-baccalaureate endorsement program must meet all graduate program entry requirements. Only 12 credit hours of professional education course work from a post-baccalaureate endorsement program will transfer into a graduate program.

In order to student teach, all approved teacher education program requirements must be completed, to include all content and professional education course work with the appropriate grade and GPA as outlined in the respective curriculum and passing scores on Praxis Subject Area Assessment, the Virginia Communication and Literacy Assessment (VCLA), and the Virginia Reading Assessment (if required by the program).

Continuance

To continue in the respective post-baccalaureate teacher education program, the student must:

- For undergraduate post-baccalaureate teacher education programs, maintain a 2.75 minimum grade point average overall (or as outlined in the specific curriculum), in the major and in the content and professional education core courses;
- For graduate post-baccalaureate teacher education programs, maintain a 3.0 minimum grade point average overall (or as outlined in the specific curriculum), in the major and in the content and professional education core courses;
- Continue to earn at least a grade of C or C- (depending on the program) in all courses specified in the major curriculum to include content and professional education core courses for continuance in the teacher education program;
- Have taken ACT, SAT, Praxis Core, or equivalent math test scores prescribed by the Virginia Board of Education assessment for admission to an approved teacher education program; and
- Have achieved passing scores in the prescribed Virginia Board of Education professional assessments for licensure described in this section of the catalog, prior to the start of the teacher candidate internship orientation.

Score reports for all examinations must be on file in the Teacher Education Services & Advising Office in room 2345 of the Education Building. These score reports are to be provided by the candidate and will not be returned. For the most current information on prescribed Virginia Board of Education professional assessments for each individual passing score, visit the Teacher Education Services & Advising Office (<http://education.odu.edu/tes/>) website and review the *required assessments*.

Prior to placement in early field experiences, practica and/or internships, students are required to have a completed Clearance Background Check search, which consists of: *National Criminal Background Check for Employee or Volunteer Providing Care to Children, the Elderly and Disabled* (SP-24 Form), the Child Protective Service's *Central Registry Release of Information* (032-02-1515-11-eng, 02/14), a fingerprint check using the APPLICANT FD258 (REV 3-1-10) 1110-0046 fingerprinting card, and the National Sex Offender Registry and/or the Virginia State Police: Sex Offender Registry search. Students are liable for all costs incurred.

Exit

Students must have:

- For undergraduate post-baccalaureate teacher education programs, maintain a 2.75 minimum grade point average overall (or as outlined in the specific curriculum), in the major and in the content and professional education core courses;
- For graduate post-baccalaureate teacher education programs, maintain a 3.0 minimum grade point average overall (or as outlined in the specific curriculum), in the major and in the content and professional education core courses;

- Achieved grades of C or C- (as determined by the specific academic department) in all courses specified in the major curriculum to include content and professional education core courses; and
- Earned a passing grade in student teaching.

The Virginia Department of Education requires all initially licensed teachers, school counselors, administrators, and other school personnel to receive training on the recognition of child abuse and neglect. This training is verified through specific courses in the approved professional education programs. Students who transfer courses into the approved programs in place of the courses that meet the child abuse and neglect requirements must provide documentation that they have met the recognition of child abuse and neglect standards. For more information review the initial licensure required assessments on the Teacher Education Services and Advising Office (<http://www.odu.edu/success/academic/teacher-education/val/#tab74=2>) website or visit the office in the Education Building Room 2345.

The Virginia Department of Education requires all initially licensed teachers, school counselors, administrators, and other school personnel to receive training in the area of technology. This training is received through specific courses in the approved professional education programs.

Due to changing University requirements, national accreditation standards, and Commonwealth licensure regulations, the programs in the Darden College of Education and Professional Studies are under constant revision. Any changes resulting from these factors supersede the program requirements described in this Catalog. Students should obtain current program information from their advisors and the Darden College of Education and Professional Studies' website at <https://www.odu.edu/eps>.

For more information on requirements in specific programs, students should refer to the individual program listings in this Catalog or contact the Office of Teacher Education Services & Advising or the appropriate academic department in the College of Arts and Letters (<http://catalog.odu.edu/undergraduate/collegeofartsletters/>), the College of Sciences (<http://www.odu.edu/sci/prospective.html>), or the Darden College of Education (<http://www.odu.edu/education/departments/>) and Professional Studies.

Clearance Background Check Process For All Licensure Programs

Old Dominion University requires a background clearance check of candidates interested in professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The clearance background check (<http://www.odu.edu/success/academic/teacher-education/placement/background-checks/>) must be successfully completed prior to a field experience placement. Students will be provided a field experience placement when the background check process is completed with resolution of any issues. *Candidates interested in the professional education programs are advised to complete this clearance background check process immediately upon entering a program. This clearance process takes a minimum of eight weeks to complete.*

This clearance background check process (<http://www.odu.edu/success/academic/teacher-education/placement/background-checks/>) includes:

- Fingerprinting
- A social service/child protective service check
- A review of each candidate's name through the National Sex Offender Registry and/or Virginia State Police: Sex Offender Registry

Candidates are liable for all fees incurred when completing the clearance background check process (<http://www.odu.edu/success/academic/teacher-education/placement/background-checks/>). ALL clearance search results must be received and reviewed by Old Dominion University, Teacher Education Services & Advising Office to determine successful completion of the clearance process and approval for placement in a school. The completed clearance check will be posted to the student's Leo Online secure page under Test Scores. *A score of 1 means the student is cleared for placement*

Early Field Experiences

The college is committed to developing candidates skilled in teaching students of all cultural and socioeconomic backgrounds and with diverse learning needs in a fair and equitable manner. Thus, candidates must complete their early field experiences in a public or private school accredited by the Virginia Department of Education. Teacher candidates may request specific schools and districts. However, these requests are informal and ARE NOT guaranteed. Candidates may not contact school district personnel in order to request or obtain placement. Candidates may not complete their field experience at a school where an immediate relative is attending or working. Candidates are required to disclose this information on the on-line placement request.

Prior to placement, students are required to have a completed Clearance Background Check search, which consists of: the Virginia State Police Criminal History Check (State Police Form 230), the Child Protective Service Central Registry Release of Information (032-02-1515/1), a fingerprint check, and the National Sex Offender Registry and/or the Virginia State Police: Sex Offender Registry. Students are liable for all costs incurred.

A candidate may participate in a course with a field experience through one of two tracks:

Option A

A candidate may be eligible to participate in the early field experience course if s/he has been admitted into an approved teacher education program. This requires that candidates achieve the Prescribed Virginia Board of Education Assessment for Admission to an Approved Teacher Education Program. In addition, candidates must meet the GPA for their individual programs, professional education courses, and minimum grade requirements, along with any other course prerequisites.

Option B

A provisionally licensed teacher may participate in a course if s/he is currently employed with a school division, has a letter from the Virginia Department of Education listing the course as a needed requirement, and has passing Virginia Communication and Literacy Assessment (VCLA) scores. The provisionally licensed teacher will have to meet all the requirements of the course as stated in the syllabus.

Prescribed Virginia Board of Education Professional Assessments for Licensure

Old Dominion University teacher candidates seeking initial licensure through the completion of an approved teacher education program must successfully pass the Prescribed Virginia Board of Education Professional Assessments for Licensure prior to the start of the teacher candidate internship. The following assessments must be completed with a passing score:

1. Virginia Communication and Literacy Assessment (VCLA) passing composite score of 470;
2. Praxis Subject Area Assessment exam passing score approved by the Virginia Board of Education; and
3. Reading for Virginia Educators (RVE). The passing score required for prek-3, prek-6, and k-12 special education general curriculum endorsement is 157. The required passing score for Reading Specialist is 162. These required passing scores were implemented July 1, 2011 by the Virginia Department of Education.

For the most current information on the prescribed Virginia Board of Education professional assessments for each individual passing score, visit the Teacher Education Services & Advising Office website, and review the Required Assessments.

Master of Science in Education - Elementary Education – Instructional Design and Technology Concentration

John Baaki, Graduate Program Director

In the Master of Science in Education – Elementary-- instructional design and technology concentration, the core and support courses are combined, with students selecting 24 to 30 credits in instructional design and technology along with the problem paper or seminar research option. Working with an assigned advisor, students may take courses in the areas of distance education/telecommunications, instructional design and development, educational applications of instructional technology, and administration of instructional technology. *The M.S.Ed. - Elementary -- instructional design and technology concentration is offered online only.*

Admission

Students must:

1. hold a bachelor's degree from a regionally accredited college/university;
2. have a cumulative undergraduate grade point average of 2.80;
3. take and receive satisfactory scores on either the Graduate Record Examination (score of 290 combined on verbal and quantitative with a minimum of 140 verbal for regular admission) or Miller Analogies Test (minimum score of 45 or 399 for regular admission); and
4. have an interview with the graduate program director or his/her designee.

Performance in classes taken as a non-degree graduate student will not be taken into consideration in the admission process. No courses in the undergraduate academic major or professional education in which the student has made below a C- will be accepted for licensure in the Darden College of Education and Professional Studies.

Under certain circumstances, applicants who do not fully meet the requirements for regular admission to the program may be admitted on a provisional basis subject to conditions specified by the graduate program director for elementary/middle education.

Continuance

Students must:

1. maintain a grade point average of 3.00;
2. maintain a grade point average of 3.00 in the major.

All ID&T students are expected to have regular and reliable access to a multimedia computer (headphones, microphone, and web cam) and a high speed internet connection.

Exit

Students must:

1. have a 3.00 grade point average;
2. pass a written comprehensive examination;
3. have an exit interview;
4. have completed all course requirements; and
5. submit an application for graduation.

Program Requirements

All courses in the core and elective blocks are offered via synchronous and asynchronous format.

Paper Option: Area I (24 credits); Area II (6 credits); 30 credits total.
Seminar Option: Area I (30 credits); Area II (6 credits); 36 credits total.

Core Courses *		24-30
FOUN 840	Educational Measurement and Assessment	
IDT 746	Foundations of Distance Education	
IDT 749	Instructional Systems Design	
IDT 761	Applied Instructional Design Tools	

IDT 775	Designing Online Instruction
TLED 617	Digital Age Teaching and Learning
TLCI 731	Instructional Technology Trends in Curriculum and Instruction
Support Courses	
Graduate electives approved by the Graduate Program Director may be substituted for technology courses when those courses complement personal and professional goals.	
Research Courses 6-12	
Problem Paper Option (6 credits; 30 credits required for graduation)	
FOUN 612	Applied Research Methods in Education
SEPS 636	Problems in Occupational and Technical Studies
Seminar Option (13 credits; 37 credits required for graduation)	
FOUN 612	Applied Research Methods in Education
IDT 773	Advanced Instructional Design Techniques
Electives	
Total Hours	30-42

Master of Science in Education - Secondary Education – Instructional Design and Technology Concentration

John Baaki, Graduate Program Director

The Master of Science in Education – Secondary - instructional design and technology concentration is designed to meet the needs of professionals interested or involved in the design, development, and delivery of instruction. The courses are appropriate for a variety of venues, including preK-12, higher education, military, and business. In this specialization, student's select 24 to 30 credits in instructional design and technology plus the problems paper or seminar research option. Working with an advisor, students select courses that complement their backgrounds and professional goals. *The M.S.Ed. - Secondary -- instructional design and technology concentration is offered online only.*

Admission

Students must:

1. hold a bachelor's degree from a regionally accredited college/university;
2. have a cumulative undergraduate grade point average of 2.80;
3. take and receive satisfactory scores on either the Graduate Record Examination (score of 290 combined on verbal and quantitative with a minimum of 140 verbal for regular admission) or Miller Analogies Test (minimum score of 45 or 399 for regular admission); and
4. have an interview with the graduate program director or his/her designee.

Performance in classes taken as a non-degree graduate student will not be taken into consideration in the admission process.

Continuance

Students must:

1. maintain a grade point average of 3.00;
2. maintain a grade point average of 3.00 in the major.

All ID&T students are expected to have regular and reliable access to a multimedia computer (headphones, microphone, and web cam) and a high speed internet connection.

Exit

Students must:

1. have a 3.00 grade point average;
2. pass a written comprehensive examination;
3. have an exit interview;
4. have completed all course requirements; and
5. submit an application for graduation.

Program Requirements

All courses in the core and elective blocks are offered via synchronous and asynchronous format.

Area I: Emphasis Courses	
Introductory Courses 6	
IDT 617	Foundations of Instructional Technology (*)
IDT 749	Instructional Systems Design
Elective Courses * 18-24	
Theory (Select at least one course)	
IDT 746	Foundations of Distance Education
IDT 760	Cognition and Instructional Design
IDT 763	Instructional Design Theory
IDT 764	Theories and Research
Design	
IDT 725	Human Performance Assessment
IDT 761	Applied Instructional Design Tools
IDT 773	Advanced Instructional Design Techniques
Technology (Select at least one course)	
IDT 735	Noninstructional Interventions
IDT 751	Computer-Based Multi-Media Design
IDT 752	Diffusion and Adoption of Instructional Technology Innovations
IDT 755	Theory and Design of Instructional Simulation
IDT 756	Instructional Gaming: Theories and Practice
IDT 775	Designing Online Instruction
Human Performance Technology (Select at least one course)	
IDT 730	Principles and Practices of Human Performance Technology
IDT 737	Consulting Skills for Instructional Designers
IDT 739	Needs Analysis and Assessment
Electives: From above, or from related areas (e.g., Modeling & Simulation, Psychology, Engineering, Speech-communications, Business, I/O Psychology) with approval of advisor and GDP	
Area II: Research Core Courses Required	
Problem Paper Option 6	
FOUN 612	Applied Research Methods in Education
SEPS 636	Problems in Occupational and Technical Studies
Total Hours	30-36

Doctor of Philosophy - Education – Instructional Design and Technology Concentration

John Baaki, Graduate Program Director

The Doctor of Philosophy in Education Instructional Design and Technology (ID&T) concentration prepares individuals to conduct research and assume leadership roles in the field of instructional technology. Students will master a number of instructional design skills, ranging from instructional problem identification, task and audience analysis, strategy design, assessment, evaluation, and implementation that they can use in a variety of settings including traditional classrooms, distance education, business, health care, military, K-12 and higher education, and government. Courses explore theories and research that provide a foundation for the field. Students are

also expected to participate in and conduct research studies as part of their program. Completing the Ph.D. in ID&T will prepare students to take jobs as instructional design and human performance practitioners in business, military, government, health care, and educational settings. They are also prepared to take positions as faculty members in higher education and as researchers for private organizations. *The Ph.D. in Education Instructional Design Technology (ID&T) concentration is offered online only.*

Admission

For admission to this program, individuals should have completed master's degree in an appropriate discipline from a regionally accredited university. Degrees that are equivalent to a master's degree such as L.L.B., J.D., and D.D.S. are also acceptable. Prospective students should also have prior course work in statistics and instructional technology. If this requirement is not met, then additional course work may be added to the candidate's graduate program of study at the discretion of the advisor and graduate program director. Please see prerequisites on the curriculum description for specifics.

Admission to the instructional design and technology Ph.D. program is competitive. A number of criteria are considered including graduate and undergraduate GPAs, GRE scores, writing ability, a personal interview, and the match between student interests and faculty expertise. Meeting the minimum requirements established by the department does not ensure admission to the program. A minimum undergraduate GPA of 2.8 and a minimum graduate GPA of 3.25 are recommended.

Application requirements for the Ph.D. in instructional design and technology are as follows:

1. a completed application which is available online or from the Office of Graduate Admissions.
2. Official transcripts of all undergraduate and graduate courses and degrees completed.
3. Official report scores from the Graduate Record Examination (verbal, quantitative, and analytical) taken within the last five years. GRE scores expire after five years; however, candidates who have completed the exam prior to five years before the application deadline may submit those scores for consideration if they are provided from an official source such as a transcript or form provided by the Educational Testing Service. Old Dominion University reserves the right to determine what is an "official source."
4. Applicants whose native language is not English (or who do not have a B.S. or M.S. degree from an accredited institution in a country where English is the native language) must submit a current score for the Test of English as a Foreign Language (TOEFL) of at least 600 (written) or 250 (computer based).
5. Applicants must submit a 500 word statement of their academic and professional goals with an emphasis on how the Ph.D. degree in instructional design and technology will contribute to the achievement of the stated goals.
6. Three letters of reference from sources capable of commenting on the applicant's readiness for advanced graduate study. It is recommended that at least two of the letters come from university faculty members. Other letters may come from work supervisors or managers.
7. An interview with the instructional design and technology program faculty. This committee will also review applications for admission.

Program Requirements

The Ph.D. program in Education with a concentration in instructional design and technology is comprised of courses totaling a minimum of 60 academic credit hours beyond the master's degree. The curriculum includes an program core of 21 credit hours, 9 credit hours in the instructional design concentration, and a research core of 15 credit hours, the three credit dissertation seminar and the dissertation, which will include a minimum of 12 credit hours. The dissertation will often include more than 12 credit hours depending on the length of time necessary for completion. Students entering the program may also need to complete introductory statistics courses and an instructional technology foundations course if they have not had equivalent courses or cannot demonstrate competency at a satisfactory

level. Students who enter the Ph.D. program with a master's degree in an academic field that is unrelated to instructional design and technology and/or who have not completed courses to develop competency in specified areas may need to complete these courses in addition to the required courses. All courses are offered through distance learning. All students must complete the research residency project (IDT 879 and IDT 898) that results in a submission for publication or presentation to a nationally refereed journal or conference prior to taking comprehensive exams. The residency project must be completed within two years of the start of IDT 879. If not, the student must repeat IDT 879 without credit.

All IDT students are expected to have regular and reliable access to a multimedia computer (headphones, microphone, and web cam) and a high speed internet connection.

Under normal circumstances, admissions will be offered at least three times a year for the fall, spring, and summer semesters. Acceptance is competitive to assure that there is an adequate number of full-time faculty to serve the students through advising, mentoring, and other duties, particularly when individuals reach the dissertation stage of the program.

Students interested in attending full-time and applying for financial aid should submit their applications by February 1 prior to the fall semester they wish to start.

Applicants must submit completed applications and all related material no later than the following dates:

- May 1st for the Fall Semester
- November 1st for the Spring Semester
- March 1st for the Summer Semester

Program Continuance

After completing 12 hours in ID&T course work, students must maintain a 3.25 GPA in ID&T courses. Failure to do so will result in one year probation. If the student's GPA in ID&T courses is less than 3.25 at the end of the probation period, the student will be suspended. Students who earn a grade of C+ or lower (including U) in a graduate course in their program of study are considered to be making unsatisfactory progress. Students earning one or more grades of C+ or lower must meet with the program director prior to enrolling in courses in future semesters. Students must provide a plan for making satisfactory progress or they will be suspended. If a student earns three or more grades of C+ or lower, they will be suspended from the program. Students wishing to be considered for reinstatement must follow the procedures set forth in the ODU Graduate Catalog.

In addition, the ODU Graduate Catalog states students who have less than a 3.0 GPA on courses at ODU will be placed on probation and may be suspended if conditions prescribed in the catalog are not met.

Continuous Enrollment and Exams

Doctoral students who do not meet the conditions for continuous enrollment and who do not have an approved leave of absence will be suspended from the degree program. Doctoral students who fail the comprehensive exam (either oral or written) or the doctoral final examination (e.g., dissertation defense) twice will be suspended from the degree program.

Satisfactory Progress

Doctoral students who do not complete at least 12 hours of course credits towards their degree each year with a grade of B- or higher prior to candidacy will be evaluated for continuation in the program. If the program faculty do not feel the student is making adequate progress, the student will be placed on program probation for one year. If the student has not completed 12 hours of course credits toward the degree with a grade of B- or higher, they will be suspended.

Research and Dissertation

Doctoral students will be evaluated annually for their progress in completing their research or dissertation. Students who have not made progress towards the completion as demonstrated evidence of a finished proposal, data collection, data analysis, or drafts of the manuscript/dissertation will be

evaluated by faculty for continuance in the program. If faculty feel the student has not made adequate progress, the student will be placed on probation for one year. If the student has not made adequate progress after one year of probation, faculty may recommend dismissal from the program for failing to make adequate progress towards completion of the degree.

Plagiarism

Any student found guilty of plagiarism will be suspended immediately from the program.

Program Completion and Exit

To complete the program students must fully comply with the curriculum below and all requirements noted elsewhere in the University catalog for graduate students and within the Ph.D. in Education Handbook. It is the responsibility of the student to obtain these materials and complete required portions.

Curriculum

Prerequisites: All students admitted into the Ph.D. in instructional design and technology must complete the following prerequisite courses unless they have previously completed equivalent graduate level coursework or have appropriate educational experience.

Prerequisites *

FOUN 722	Introduction to Applied Statistics and Data Analysis
IDT 617	Foundations of Instructional Technology

ID&T Core Courses 21

IDT 730/830	Principles and Practices of Human Performance Technology
IDT 751/851	Computer-Based Multi-Media Design
IDT 760/860	Cognition and Instructional Design
IDT 773/873	Advanced Instructional Design Techniques
IDT 801	Instructional Design and Technology Seminar
IDT 810	Trends and Issues in Instructional Design and Technology
IDT 849	Instructional Systems Design

Research Core 15

FOUN 812	Research Design and Analysis
TLCI 814	Qualitative Research Design in Education
FOUN 823	Analysis of Variance Applied to Educational Research
IDT 725/825	Human Performance Assessment
IDT 879	Research Residency in Instructional Design and Technology

Instructional Design Concentration 9

Choose courses from the following:

Design & Theory	
IDT 746/846	Foundations of Distance Education
IDT 761/861	Applied Instructional Design Tools
IDT 763/863	Instructional Design Theory
IDT 764/864	Theories and Research
IDT 898	Research Residency II
Technology	
IDT 752/852	Diffusion and Adoption of Instructional Technology Innovations
IDT 755/855	Theory and Design of Instructional Simulation
IDT 756/856	Instructional Gaming: Theories and Practice
IDT 775/875	Designing Online Instruction
TLCI 735/835	Researching with Children: Contemporary Perspectives on the Child in Research
Human Performance Technology	

IDT 735/835	Noninstructional Interventions
IDT 737/837	Consulting Skills for Instructional Designers
IDT 739/839	Needs Analysis and Assessment
Electives **	
Capstone Courses	
FOUN 881	Dissertation Seminar ***
SEPS 899	Dissertation in Occupational Education
Total Hours	45

* All students admitted into the Ph.D. program in instructional design and technology must complete the prerequisite courses unless they have previously completed equivalent graduate level coursework or have appropriate educational experience.

** Electives are chosen from the list above, or from related areas, e.g., modeling & simulation, psychology, engineering, speech-communications, business, I/O psychology.

*** If seminar is waived by the doctoral committee, the credits are added to the content.

Additional courses or substitutions may be used as approved by student's advisory committee.

Education and Training Emphasis in Modeling & Simulation Certificate

The College of Education and Professional Studies offers a certificate in Modeling & Simulation through the Instructional Design and Technology program, a graduate-level program that is part of the STEM Education and Professional Studies Department.

Simulation and gaming are used extensively as teaching tools and training environments in a variety of education and training applications. The certificate provides the student with a fundamental understanding of modeling and simulation techniques coupled with targeted coursework in the design and use of simulation and gaming technologies for instructional settings. This certificate was the first of its kind in the U.S. and is a natural concentration area in instructional design and technology given the widespread use of simulation and gaming as instructional tools in Pre-K-12 education, colleges, universities, and corporate and military training programs. This certificate is one of several such certificate programs offered as part of the M&S strategic plan of Virginia Modeling, Analysis and Simulation Center (VMASC) and ODU.

The Modeling and Simulation Certificate Program consists of a minimum of four, three credit graduate courses. Courses include:

Core Courses 3	
MSIM 601	Introduction to Modeling and Simulation
Related Elective Courses 9	
IDT 755/855	Theory and Design of Instructional Simulation
IDT 756/856	Instructional Gaming: Theories and Practice
SEPS 750/850	Trends and Issues in Training: Modeling and Simulation
Total Hours	12

For more information about the Master of Science in Engineering modeling and simulation concentration, refer to the Catalog section for the Batten College of Engineering and Technology.

Graduate Certificate in Human Performance Technology

Human performance technology involves systematic and systemic approaches to identifying how work performance improvement can be measured, and most critically applied in real environments to solve actual problems. The certificate provides the student with a fundamental

understanding of human technology coupled with targeted coursework in the design and implementation of instructional and non-instructional performance interventions to contribute to performance improvement, strategic planning, and organizational change initiatives. This certificate represents a synthesis in instructional design and technology with business education that benefits performance in a variety of organizations.

Graduate of the program will have the knowledge and skills to contribute to large scale projects that impact multiple facets of an organization. They will also be able to work on performance improvement initiatives.

Admission Requirements

Degree-seeking students may enroll in certificate courses with advisor's approval.

Non-degree seeking students seeking admission into the certificate program must:

- Submit a non-degree seeking-certificate/life learner application.
- Have an earned undergraduate degree from a regionally-accredited institution, or an equivalent degree from a foreign institution, with a GPA of 3.0 or higher.
- For those whose native language is not English, submit TOEFL scores with a minimum of 230 on the computer-based TOEFL or 80 on the TOEFL iBT.

Curriculum

Required Courses

IDT 630	Foundations of Human Performance Technology	3
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IDT 735	Noninstructional Interventions	3
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IDT 739	Needs Analysis and Assessment	3
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Restricted Electives (Select One of the Following) 3

IDT 737	Consulting Skills for Instructional Designers	
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IDT 752	Diffusion and Adoption of Instructional Technology Innovations	
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Total Hours		12
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Master of Science - Occupational and Technical Studies

This program has been recommended for closure to the State Council for Higher Education of Virginia. Pending their approval and SACSCOC approval, all degrees for the program must be earned by August 2025. Students will not be able to select the program as their major after August 28, 2020.

Mickey Kosloski, Graduate Program Director

This is an advanced master's degree and requires prior academic work associated with workforce development or a related area. The degree is designed to help workforce educators and trainers upgrade their knowledge and skills and prepare for leadership roles in adult and career and technical education, training, and/or the Navy's Education and Training Subspecialty (ETMS). The program is delivered at the Norfolk campus and through the University's distance learning system.

Admission

Students are admitted to the program on a continuing basis. Applications can be obtained from the Admissions Office, distance learning sites, the department, and online. Students are admitted for fall, spring, and summer on a rolling basis. Graduate students can complete up to 12 graduate hours with a non-degree application. All applicants to the Master of Science degree in Occupational and Technical Studies must meet University, college, and department requirements. In addition, all applicants must:

1. hold an undergraduate degree in a related field or have work experience in an occupational/technical area,
2. have an overall grade point average of 2.80 with a 3.00 in major courses,

3. submit two letters of recommendation.

4. submit a 500-word essay on how earning a M.S. in Occupational and Technical Studies contributes to the achievement of career goals.

Continuance

Students must:

1. maintain a minimum grade point average of 3.00.

Exit

Students must complete 33 semester hours as distributed in the M.S. curriculum. In addition, all students must:

1. achieve an overall grade point average of 3.00 with no course grades below a B-;
2. complete all competencies listed on course syllabi;
3. pass the written comprehensive examination; and
4. successfully complete a problems paper or thesis.

Curriculum

Common Core 12

SEPS 762	Administration and Management of Education and Training Programs	
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SEPS 785	Curriculum Development in Occupational Education and Training	
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SEPS 788	Instructional Strategies for Innovation in Training and Occupational Education	
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SEPS 789	Instructional Technology in Education and Training	
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Research Core 6

FOUN 612	Applied Research Methods in Education	
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SEPS 636	Problems in Occupational and Technical Studies	
or SEPS 698	Thesis in Occupational Education	

Professional Electives 15

(select five) *

SEPS 760	Trends and Issues in Occupational Education	
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SEPS 761	Foundations of Adult Education and Training	
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SEPS 765	Trends and Issues of Economic and Workforce Development	
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SEPS 787	Career and Technical Education Curriculum	
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STEM 720	STEM Educational Foundations	
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STEM 730	Introduction to Technology	
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Total Hours		33
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Footnotes

* or electives approved by advisor.

Doctor of Philosophy - Education – Occupational and Technical Studies Concentration

Mickey Kosloski, Graduate Program Director

The Ph.D. in Education, occupational and technical studies concentration has three emphases: technology education, career and technical education, and human resources - training. The Ph.D. is delivered on campus and through the University's distance learning system. All students must be on the Norfolk campus for two, two-week summer Institute sessions. The focus of the degree is to prepare university faculty, directors/supervisors of career and technical education, and directors of training departments in business, industry, and government.

The curriculum associated with Old Dominion University's Ph.D. in Education, occupational and technical studies concentration is intended to accomplish the following learning outcomes:

- Individuals will apply knowledge, skills, and behaviors in today's complex educational and business environments.
- Every individual who completes this doctoral program, regardless of his/her concentration emphasis, will develop competencies for understanding and using research methods and statistics to make data-based driven decisions.
- The concentration emphasis will offer courses that enable graduates to know and apply their knowledge in today's complex educational, business, or industry environments and emerge as leaders in their chosen careers.

Note for students concerning the Doctor of Philosophy in Education - Occupational and Technical Studies concentration: This program is not intended to lead to teacher certification or school leadership licensure. Teachers are advised to contact their individual school districts as to whether this program may qualify for teacher advancement.

Admission

Students may enroll in this program full- or part-time. The program faculty reviews all applicants as their application packages are completed. The following criteria are used for admittance:

1. graduate grade point average;
2. undergraduate grade point average;
3. Graduate Record Examination;
4. essay, 1500 word; and
5. goodness of fit with program goals, faculty expertise, and supporting references.

Graduate assistantships and fellowships may be available. Contact the graduate program director for information.

Entrance

All applicants to the Doctor of Philosophy degree, occupational and technical studies concentration, must meet University, college and department requirements. In addition, all applicants must:

1. hold a master's degree related to this field or have worked in occupations related to the degree's outcomes;
2. complete the graduate application with necessary fee;
3. submit an essay statement of academic and professional goals with an emphasis on how the Ph.D. in Education concentration in occupational and technical studies will contribute to the achievement of career goals;
4. submit three letters of reference from sources capable of commenting on readiness for advanced graduate study;
5. submit a resume that shows your educational and professional background;
6. submit academic transcripts from all undergraduate and graduate institutions previously attended or currently being attended with a minimum 3.00 graduate grade point average;
7. submit scores from the Graduate Record Examination that have been earned within the past five years;
8. if the applicant's primary language is not English, submit a current score for the Test of English as a Foreign Language (TOEFL) that meets the University's current standard.

Applications for admission are on a rolling basis. Graduate assistantships are awarded in February annually.

Continuance

Students must:

1. have their Ph.D. program approved;
2. successfully complete annual progress reviews;

3. meet faculty and University program expectations;
4. meet professional development and career preparation expectations.

Exit

Students must:

1. complete a minimum of 60 credit hours beyond the master's degree;
2. complete all competencies listed on course syllabi;
3. achieve an overall grade point average of 3.00 with no course having a grade less than a B-;
4. pass the written and oral comprehensive examination;
5. select a dissertation committee;
6. prepare and defend a dissertation prospectus;
7. successfully complete a dissertation with an oral defense; and
8. complete the graduate student University assessment.

Prerequisites

A master's degree in an appropriate field related to this concentration is required for admission to the Ph.D. program. Students who do not have equivalent coursework or appropriate educational experiences must complete the following prerequisite courses:

FOUN 612	Applied Research Methods in Education	3
FOUN 722	Introduction to Applied Statistics and Data Analysis	3
SEPS 785	Curriculum Development in Occupational Education and Training	3
SEPS 788	Instructional Strategies for Innovation in Training and Occupational Education	3
SEPS 789	Instructional Technology in Education and Training	3
Total Hours		15

Curriculum (60 credits minimum)

Students in the occupational and technical studies concentration complete courses in research, core courses in occupational and technical studies concentration, and an emphasis in either career and technical education, human resources-training, or technology education, and 6 credit hours of electives.

Research Core		12
SEPS 835	Research Design for Occupational and Technical Studies	
FOUN 812	Research Design and Analysis	
TLCI 814	Qualitative Research Design in Education	
FOUN 822	Applied Linear Models in Educational Research	
or FOUN 823	Analysis of Variance Applied to Educational Research	
Concentration Core		18
Must be taken with one emphasis area-Technology Education, Career and Technical Education, or Human Resources-Training		
SEPS 860	Trends and Issues in Occupational Education	
SEPS 862	Administration and Management of Education and Training Programs	
SEPS 865	Trends and Issues of Economic and Workforce Development	
SEPS 885	Curriculum Development in Occupational Education and Training	
SEPS 888	Instructional Strategies for Innovation in Training and Occupational Education	
SEPS 889	Instructional Technology in Education and Training	
Select one of the following Emphasis Areas		12
Technology Education Emphasis		

SEPS 840	Readings in Occupational and Technical Studies	
STEM 830	Introduction to Technology	
STEM 831	Technical Systems	
STEM 832	Program Development for Technology Education	
Career and Technical Education Emphasis		
ELS 626	Instructional Supervision, Staff Development, and Assessment	
SEPS 840	Readings in Occupational and Technical Studies	
SEPS 868	Internship	
SEPS 887	Career and Technical Education Curriculum	
Human Resources - Training Emphasis		
IDT 846	Foundations of Distance Education	
SEPS 840	Readings in Occupational and Technical Studies	
SEPS 850	Trends and Issues in Training: Modeling and Simulation	
SEPS 861	Foundations of Adult Education and Training	
Electives		6
Electives are selected in consultation with the advisor. They should be planned and included in the student's program of study.		
Capstone Courses		12-15
FOUN 881	Dissertation Seminar (if needed)	
SEPS 899	Dissertation in Occupational Education	
Total Hours		60-63

Endorsement Program in Industrial Cooperative Training

The endorsement program in industrial cooperative training is designed to prepare a licensed teacher to be endorsed to teach industrial cooperative training in the public schools.

Admission

Students may enroll in this teaching endorsement program as a non-degree student. If an M.S. degree is sought, some graduate level courses may be applied toward professional technical studies in this component of the degree. Admission should be sought into the M.S. program in occupational and technical studies with a concentration in career and technical education teaching. Graduate students can complete up to 12 graduate hours with a non-degree application. Students should contact the program coordinator to discuss admissions options. Prior to entering this program, students must have or qualify for a Virginia Collegiate Professional or Postgraduate Professional License. Secondly, they must be interviewed and accepted by the program coordinator.

Continuance and Exit

Students must:

- complete the following courses:

SEPS 401/501	Foundations of Career and Technical Education	3
SEPS 788	Instructional Strategies for Innovation in Training and Occupational Education	3
SEPS 408/508	Advanced Classroom Issues and Practices in Career and Technical Education	3
SEPS 450/550	Assessment, Evaluation and Improvement	3
SEPS 400	Instructional Systems Development	3
SEPS 503	Methods in Career and Technical Education	3

2. earn a 2.75 cumulative grade point average, if licensure is at the undergraduate level, and a 3.00 cumulative grade point average, if licensure is at the graduate level; and

3. document at least 4000 clock hours of acceptable employment in a trade, technical, or industrial education subject area completed within the past five years.

Twelve hours of 500/600 level courses may be applied toward the Master of Science in occupational and technical studies, career and technical education teaching concentration.

Marketing Teacher Education with Initial Licensure

Michael F. Kosloski, Program Coordinator

The post-baccalaureate endorsement in marketing education is designed to prepare a person who has a baccalaureate degree to be a marketing education teacher-coordinator. Participants who successfully complete this program will qualify to apply for a Virginia teaching license to teach marketing education.

Admission

For those students seeking licensure only, they must first apply to ODU as non-degree seeking. Students subsequently complete undergraduate or graduate level courses that meet Virginia licensure requirements. For students simultaneously seeking a graduate degree, they should apply for the graduate program and may take up to 12 credit hours that may be used toward both the M.S. and post-baccalaureate programs. Students should schedule an interview with the program coordinator for program admissions as well as to discuss course evaluation and options.

Continuation and Exit

Students must:

- complete the following courses:

SEPS 297	Observation and Participation	1
SEPS 400/500	Instructional Systems Development	3
SEPS 401/501	Foundations of Career and Technical Education	3
SEPS 402/502	Instructional Methods in Occupational Studies	3
SEPS 408/508	Advanced Classroom Issues and Practices in Career and Technical Education	3
SEPS 450/550	Assessment, Evaluation and Improvement	3
SEPS 485	Student Teaching	12
READ 680	Reading to Learn Across the Curriculum	3
or SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	
Total Hours		31
- earn a 2.75 cumulative grade point average if licensure is at the undergraduate level and a 3.00 cumulative grade point average if licensure is at the graduate level;
- document at least 4000 clock hours of marketing-related work experience completed within the past five years or complete a directed field experience (SEPS 405);
- earn credit in any marketing- related content courses required by the Virginia Department of Education that have not yet been met. Such courses are identified in a transcript evaluation of all prior college-level work. Students with an undergraduate degree in marketing is considered to have met all content requirements. Experiential credit may be considered for individual courses on a case-by-case basis.
- complete a university graduate student assessment if enrolled in the M.S. degree program.

Twelve hours of 500/600 level courses may be applied toward the Master of Science in occupational and technical studies, career and technical education teaching concentration.

Technology Education with Initial Licensure

Mickey Kosloski, Graduate Program Director

The post-baccalaureate endorsement in technology education is designed to prepare a person who has a baccalaureate degree to be a technology education teacher. Participants who successfully complete this program will qualify to apply for a Virginia teaching license to teach technology education.

Admission

For those students seeking licensure only, they must first apply to ODU as non-degree seeking. Students subsequently complete undergraduate or graduate level courses that meet Virginia licensure requirements. For students simultaneously seeking a graduate degree, they should apply for the graduate program and may take up to 12 credit hours that may be used toward both the M.S. and post-baccalaureate programs. Students should schedule an interview with the program coordinator for program admissions as well as to discuss course evaluation and options.

Continuance and Exit

Students must:

1. complete the following courses:

FOUN 612	Applied Research Methods in Education	3
READ 680	Reading to Learn Across the Curriculum	3
SEPS 586	Middle School Student Teaching for Technical Education	6
SEPS 596	Topics in Career and Technical Education	1-3
SEPS 636	Problems in Occupational and Technical Studies	3
SEPS 788	Instructional Strategies for Innovation in Training and Occupational Education	3
SEPS 789	Instructional Technology in Education and Training	3
TLED 608	Foundations of Education and Instructional Assessment	3
SPED 613	Human Growth and Development	3
STEM 231	Materials and Processes Technology	3
STEM 320	Manufacturing and Construction Technology	3
STEM 350	Communication Technology Processes	3
STEM 351	Communication Technology	3
STEM 730	Introduction to Technology	3
Total Hours		43-45

2. earn a 2.75 cumulative grade point average on undergraduate level courses and a 3.00 cumulative grade point average at the graduate level,
3. earn passing scores on Virginia Licensure Test before the teacher internship (see advisor or Teacher Education Services); and
4. complete the graduate student University assessment.

Complete this licensure program and other departmental requirements will allow the candidate to earn the Master of Science in occupational and technical studies, career and technical education teaching concentration.

Education Specialist - Educational Leadership - Occupational and Technical Studies Concentration

Mickey Kozlowski, Graduate Program Director

The Department of STEM Education and Professional Studies jointly offers the education specialist (Ed.S.) with the Department of Educational Foundations and Leadership. The program offers a cohesive sequence of academic studies designed to help graduates deal effectively with administrative problems encountered in urban schools and agencies. This program does not lead to K-12 school leadership licensure.

Admission

To be admitted to the Ed.S. program, an applicant must:

1. Hold a master's degree in career and technical education or related field;
2. Have a successful experience as an administrator or teacher;
3. Hold a teaching license or equivalent; and
4. Have taken ELS 600 or its equivalent as a prerequisite.

Students seeking this degree need to apply through the Ed.S. program in the Department of Educational Leadership and Counseling.

Entrance

Students must:

1. meet all University requirements,
2. provide two letters of recommendation;
3. hold a master's degree from an accredited institution (minimum 3.25 graduate grade point average),
4. provide a one-page essay explaining why he/she should be admitted to the program; and
5. have an acceptable score on the GRE or Miller Analogies Test.

Continuance

Students must meet all University requirements and maintain a 3.00 or higher grade point average.

Exit

Students must successfully complete:

1. a written comprehensive examination,
2. the required course of study,
3. have a 3.00 grade point average or above, and
4. complete a university graduate student assessment.

Curriculum (33 credits)

Requirements for the Ed.S. with a specialty in occupational and technical studies include 30-33 semester hours (18 hours must be completed in 800-level courses in ELS), as follows:

Prerequisites*

ELS 610	School Community Relations and Politics	3
ELS 621	Curriculum Development and Assessment	3
ELS 657	Public School Law	3
Total Hours		9

Educational Leadership

18

ELS 753	Educational Finance and Budgeting
ELS 854	Human Resource Development and Evaluation
ELS 871	Educational Systems Planning and Futures
ELS 876	Leadership for Social Justice
ELS 878	Leadership for Teaching and Learning
ELS 879	Field Research in School Administration and Supervision

Occupational & Technical Studies

15

SEPS 860	Trends and Issues in Occupational Education
SEPS 862	Administration and Management of Education and Training Programs

SEPS 885	Curriculum Development in Occupational Education and Training	
SEPS 888	Instructional Strategies for Innovation in Training and Occupational Education	
SEPS 889	Instructional Technology in Education and Training**	
Total Hours		33
*	ELS 610, ELS 621, and ELS 657 are prerequisites for the principalship endorsement.	
**	And/or other courses approved by the candidate's advisor.	

Library Science and Information Studies

4101 Educational Building
Hampton Boulevard
Department of STEM and Professional Studies
757-683-4305

Sue Kimmel, Graduate Program Director

General Description of the Library and Information Studies Program

The purpose of the Master of Library and Information Studies is to prepare students with the theoretical knowledge and practical skills that will enable them to become highly proficient librarians, media specialists, and information authorities. This includes, but is not limited to, professional positions in academic libraries, public libraries, school libraries, and special libraries such as health sciences, law, or business libraries as well as positions for information specialists in health environments, museums, businesses, government and other agencies.

Graduates of the program will be prepared to manage libraries, select and organize library collections, and interact with library patrons to determine and fulfill information and media needs. Further, librarianship has become a technology-based career and the proposed program reflects this focus. Through specific skills taught in the courses contained in the program of study, individuals will engage in the collection, organization, retrieval, preservation, management, and dissemination of information resources to enrich cultures within society. Thus, MLIS graduates will also be trained to perform tasks such as analyzing patron information requests, assisting in finding information sources including print, audio-video, and virtual information, and teaching information literacy skills.

We offer a concentration in school Librarianship leading to endorsement for licensed teachers. Other students are advised through a plan of study completed with an advisor and filed with the program director in the semester when 12th credit hour is completed. Coursework may focus on a type of library: academic, public, or special or area of library and information work such as youth services or evaluation & assessment.

Coursework for the MLIS is offered asynchronously and online with one face to face requirement: attendance at the Summer Institute held on campus in Norfolk, VA. Coursework is project-based and students are expected to spend time in a library for most courses. All students complete an internship.

Old Dominion University's Master of Library and Information Studies has been granted candidacy status by the Committee on Accreditation of the American Library Association. Candidacy status is an indication that ODU's Master's in Library and Information Studies has voluntarily committed to participate in the ALA accreditation process and is actively seeking accreditation. Pre-candidacy does not indicate that the program is accredited nor does it guarantee eventual accreditation of the program by ALA.

Master of Library and Information Studies

Admission

Students must:

1. Hold a bachelor's degree in any field from a regionally accredited college/university;

11 Department of STEM Education & Professional Studies

2. Have an undergraduate grade point average of at least 3.0;
3. Apply for admission to the graduate school;
4. Submit a current resume;
5. Submit a writing sample addressing a prompt supplied by Admissions

Under certain circumstances, applicants who do not fully meet the requirements for regular admission to the program may be admitted on a provisional basis or may be required to take the GRE or the Miller Analogies Test.

DEADLINES FOR ADMISSIONS

New students are admitted twice each year and may begin in fall, spring, or summer semester.

Deadline for Summer/Fall admissions is April 1.

Deadline for Spring admissions is Nov. 1.

Continuance

Students must:

1. Maintain a grade point average of 3.00;
2. Complete the Responsible Conduct of Research (RCR) modules during the first twelve graduate credit hours at Old Dominion University. For more information review the instructions at: <https://www.odu.edu/impact/responsible-conduct-of-training> (<https://www.odu.edu/impact/responsible-conduct-of-training/>); and
3. Any courses in which the student has made below a "B-" must be repeated or, if applicable, substituted.

Exit

Students must:

1. have a 3.00 grade point average;
2. No courses in which the student has made below a "B-" will be accepted for the degree.
3. have an exit interview;
4. have completed all course and credit hour requirements;
5. submit an application for graduation; and
6. have successfully completed a portfolio review.

Program Requirements

Internship

All students will be expected to complete an internship (LIBS 668) in a library or information setting as a capstone course where they will have the opportunity to apply, develop, and demonstrate the competencies acquired in core courses and electives.

Annual Summer Institute

Although the program is online, students are required to attend an annual summer institute on the Norfolk campus. This institute allows students to demonstrate the types of learning commonly experienced at professional conferences.

Electronic Portfolio

Submission of an electronic portfolio (E-portfolio) will serve as the comprehensive exam in the program. Students are expected to develop an E-portfolio that represents their mastery of standards, examples of projects completed in the program, and a focus on their individual strengths and beliefs about the profession including a resume and statement of philosophy.

Students will begin work on the E-portfolio in their first course, with coaching and peer-review throughout the program; they will be expected to successfully present the portfolio before graduation. Students who do not successfully present the E-portfolio will be provided detailed feedback and expected to re-submit.

Required Courses (15 credits)

LIBS 608	Foundations of Libraries and Information
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15

LIBS 674	Library Management and Leadership
LIBS 658	Knowledge Resources: Planning, Selecting & Managing Collections
LIBS 677	Knowledge Organization and Access
LIBS 668	Internship in Libraries and Information Workplaces *
Additional Coursework (15 credits selected for plan of study) 15	
LIBS 602	Production of Instructional Materials
LIBS 603	Online Resources for Teaching
LIBS 612	Research Methods in Library and Information Studies
LIBS 642	Children's Literature Across the Curriculum, PK-8
LIBS 644	Literature and Media for Young Adults
LIBS 647	Reading and Literature for Adults
LIBS 654	Information Literacy Instruction
LIBS 655	Methods and Strategies for the School Library
LIBS 656	User Services and Programming
LIBS 676	Library Media Services and the Curriculum
LIBS 680	Culturally Responsive Librarianship
LIBS 681	Assessment and Evaluation in Library and Information Science
Total Hours	30

* Taken after the completion of all Library Science courses.

Master of Library and Information Studies with Concentration in School Librarianship (for Licensed Teachers)

This degree and concentration are intended for licensed teachers seeking to add a School Library Endorsement to their Teaching License. Students interested in school librarianship who do not have a teaching license will be advised through the Master of Library and Information Studies degree and may have additional coursework and requirements.

Admission

Students must:

1. Hold a bachelor's degree in any field from a regionally accredited college/university;
2. Have an undergraduate grade point average of at least 3.0;
3. Apply for admission to the Office of Graduate Admissions;
4. Submit a current resume;
5. Submit a writing sample addressing a prompt supplied by admissions;
6. Hold the Virginia Collegiate Professional License or an equivalent license from another state.

Under certain circumstances, applicants who do not fully meet the requirements for regular admission to the program may be admitted on a provisional basis or may be required to take the GRE or the Miller Analogies Test.

Continuance

Students must:

1. maintain a grade point average of 3.00;
2. have a criminal background check completed prior to placement in the teacher candidate internship. For more information please review the policy in the Teacher Education Services website: <http://www.odu.edu/tes> (<http://www.odu.edu/tes/>).
3. complete the Responsible Conduct of Research (RCR) modules during the first twelve graduate credit hours at Old Dominion University. For more information review the instructions at: <https://www.odu.edu/>

impact/responsible-conduct-of-training, (<https://www.odu.edu/impact/responsible-conduct-of-training/>)

4. earn at least a "B-" in courses; any courses in which the student has made below a "B-" must be repeated or, if applicable, substituted.

Exit

Students must:

1. have a 3.00 grade point average;
2. earn at least a B- in courses. No courses in which the student has made below a "B-" will be accepted for the degree.
3. complete all course and credit hour requirements;
4. submit an application for graduation; and
5. have successfully completed a portfolio review.

No courses in the academic major or professional education in which the student has made below a "B-" will be accepted for licensure requirements in the Darden College of Education.

Program of Study - 30 Credit Hours

Library Studies 15	
LIBS 608	Foundations of Libraries and Information
LIBS 674	Library Management and Leadership
LIBS 658	Knowledge Resources: Planning, Selecting & Managing Collections
LIBS 677	Knowledge Organization and Access
LIBS 669	Internship in School Libraries
School Library Endorsement 9	
LIBS 602	Production of Instructional Materials
LIBS 676	Library Media Services and the Curriculum
Literature (Select One; Alternate may be an elective choice)	
LIBS 642	Children's Literature Across the Curriculum, PK-8
LIBS 644	Literature and Media for Young Adults
Electives (Choose Two) 6	
LIBS 603	Online Resources for Teaching
LIBS 612	Research Methods in Library and Information Studies
LIBS 647	Reading and Literature for Adults
LIBS 654	Information Literacy Instruction
LIBS 655	Methods and Strategies for the School Library
LIBS 656	User Services and Programming
LIBS 680	Culturally Responsive Librarianship
LIBS 681	Assessment and Evaluation in Library and Information Science
Total Hours	30

* LIBS 668 is taken after completion of all Library Science courses.

Graduate Certificate In School Library Practice

Dr. Elizabeth Burns - School Library Program Director

The Library and Information Studies Program offers a School Library Practice Certificate assists those individuals already holding an MLIS degree (or equivalent) and interested in school librarianship meet licensure requirements.

The School Library Practice Certificate consists of four courses, 12 semester hours, that address the competencies required for school library media licensure. Students who complete the certificate coursework will have the knowledge and skills to fulfill the roles and responsibilities of teacher,

instructional partner, information specialist, program manager, and leader in a school setting.

Admission and Continuance

Students seeking admission to the certificate program must meet and maintain program requirements

- Submission of a graduate transcript demonstrating earned a MLIS degree (or equivalent) with minimum 3.0 GPA
- Submission of written essay with application
- Students must maintain a minimum grade of B- in all LIBS coursework

Requirements

Curriculum		12
LIBS 602	Production of Instructional Materials	
LIBS 642	Children's Literature Across the Curriculum, PK-8	
or LIBS 644	Literature and Media for Young Adults	
LIBS 655	Methods and Strategies for the School Library	
LIBS 676	Library Media Services and the Curriculum	
Total Hours		12

Courses are all taught asynchronously online

**This certificate facilitates the transition to working in a school library setting. This is not a state-approved endorsement program. Individuals will be responsible for submitting transcripts/proof of certificate to state department of education for licensure. Licensure requirements vary from state to state.*

INSTRUCTIONAL DESIGN AND TECHNOLOGY Courses

IDT 575. Web Development for Educators. 3 Credits.

Provides both a conceptual framework and hands-on experience in the design and development of online web resources for educators. The course introduces the student to the various uses and features of online tools and technologies, investigates online learning strategies, and explores best practices in the use of the web to enhance learning. Topics include fundamentals of web authoring: screen design, use of web page creation tools, and functional use of HTML and derivatives. Prerequisites: graduate standing.

IDT 617. Foundations of Instructional Technology. 3 Credits.

Required introductory overview to the field of instructional technology. Topics include a history of the field, basic instructional design, generally accepted theoretical practices and major formats of instructional media. Emphasis is given to instructional technology trends as applied to various industries, including K-12, military, industry training, and others.

IDT 630. Foundations of Human Performance Technology. 3 Credits.

This course will introduce students to the field of Human Performance Technology (HPT). Students will explore what HPT is, why instructional designers should know about it, how performance improvements can be measured, and most critically, how it can be applied in real environments to solve real problems. Students will gain practice in thinking systematically about performance, and they will enhance their value as instructional design professionals by being able to offer solutions to organizational needs that go beyond traditional instruction.

IDT 647. Online Learning. 3 Credits.

This course is an applied survey on online instruction, including relevant online learning theory and design considerations, as well as tools and principles, with an emphasis on K-12 education. Topics include theories and principles of online learning, effectively identifying, locating, evaluating, preparing, and using educational technology as instructional resources in an online environment.

IDT 725. Human Performance Assessment. 3 Credits.

This course focuses on the theory, design, and evaluation of measurement instruments used to assess individual knowledge, performance, and attitudes. Topics include fundamentals of measurement, reliability, validity, and instrument selection, construction, and use. Students will develop and evaluate instruments for instructional and research purposes. Prerequisite: FOUN 722 or equivalent.

IDT 730. Principles and Practices of Human Performance Technology. 3 Credits.

This course explores both the principles and practices of human performance technology, with roughly equal emphasis on both. Students will learn what HPT is, how it's applied in practice, and how and why instructional designers need to know about it. Particular emphasis is given to determining whether or not problems are best amenable to instructional solutions.

IDT 735. Noninstructional Interventions. 3 Credits.

This project-based course examines several different non-instructional interventions that can be used to promote performance improvement. Major methodologies common in the field will be explored as a class, and students will also be required to familiarize themselves with other methodologies of their choice. Emphasis will be on the following interventions: job analysis/work design, performance development, human resource development, organizational communication, organizational design and financial systems.

IDT 737. Consulting Skills for Instructional Designers. 3 Credits.

This project-based course is designed to develop and enhance the ability of instructional designers to work as partners and consultants to clients and superiors. The focus is on consulting skills per se, and not any particular content. All students will be required to do an individual consulting project, supervised by the instructor.

IDT 739. Needs Analysis and Assessment. 3 Credits.

This project-based class will focus on the process of doing a needs analysis and assessment, from start to finish. Although theoretical considerations regarding needs analyses will be explored, the emphasis is on actually conducting the analysis. Students will work in teams under the supervision of the instructor to conduct a needs analysis for an external client.

IDT 746. Foundations of Distance Education. 3 Credits.

An analysis of the trends, issues, and theories of distance education in education, business, and military applications. Students will examine various distance education systems, policies and lessons from different perspectives.

IDT 749. Instructional Systems Design. 3 Credits.

Students will gain hands-on experience applying a theoretical understanding of instructional design and development to actual projects. Students will learn and use the Instructional Systems Design Process from initial learner profile analysis to design and development through to evaluation. Students will work individually and in teams to gain experience similar to real-world instructional design situations. Students will master the fundamental practices upon which the instructional design process is based.

IDT 751. Computer-Based Multi-Media Design. 3 Credits.

This course covers the theory, design, and evaluation of computer-based multimedia instruction. Students will demonstrate a thorough understanding of instructional theory and design strategies for computer-based drills, tutorials, hypermedia, simulations, games, tools, open-ended learning environments, tests, and web-based instruction. Class projects will center on the design and development of instruction utilizing at least two of these methodologies. Prerequisites: IDT 749 and IDT 849.

IDT 752. Diffusion and Adoption of Instructional Technology Innovations. 3 Credits.

This course will explore theories, research, and strategies related to the diffusion and adoption of instructional technology innovations in education and training. The course will explore why and how individuals, groups, and organizations adopt or fail to adopt an innovation or change.

IDT 755. Theory and Design of Instructional Simulation. 3 Credits.

This course focuses on learning theory, design and evaluation of instructional simulations and simulators. Topics include history, instructional design, validation, and integration of instructional simulations.

IDT 756. Instructional Gaming: Theories and Practice. 3 Credits.

Provides both a conceptual framework and experience in the design and development of instructional games. The course introduces the student to the history, research, theory, and practice of instructional games. Topics include discussions of relevant learning theories associated with instructional gaming, analysis and design of games and current research in instructional gaming.

IDT 760. Cognition and Instructional Design. 3 Credits.

Students will be introduced to the theoretical frameworks that form the basis of instructional systems theory and design. Focus will be on learning theories, instructional psychology, and instructional system theory. Recent developments in cognition, learning and instruction for educators will also be considered. Topics include perspectives of behaviorism, social-historical constructivism, cognitive science, situated cognition, and cultural influences on cognition.

IDT 761. Applied Instructional Design Tools. 3 Credits.

Problem-based course in which students gain experience applying knowledge from IDT 749/IDT 849 to real-world instructional and instructional technology problems. Project work is individual, paired, and in teams. Students demonstrate mastery of the instructional design and development process through production of tools, technologies, media or materials that successfully resolve an instructional problem. Focus is on rapid prototyping model. Prerequisites: IDT 749 or IDT 849.

IDT 763. Instructional Design Theory. 3 Credits.

Students will investigate traditional and contemporary instructional design theories and models. Behavioral, cognitive, generative, problem-based learning, and constructivist theories as well as cognitive hierarchies will be examined, compared, contrasted and applied to various instructional situations.

IDT 764. Theories and Research. 3 Credits.

This course is a study of the application of perceptual and learning principles to the design of instructional media for use in educational and training applications. The focus is on the development and application of heuristics from the research literature. We will examine verbal and iconic signs as well as visual imagery, and their role in the instructional and learning processes.

IDT 773. Advanced Instructional Design Techniques. 3 Credits.

Exploration and application of techniques, tools and competencies characteristic of expert designers. Topics may include: instructional strategies, use of design software, program design, advanced analysis techniques, motivation design, rapid prototyping, reducing design cycle time, and designing instruction for diverse learner populations. Prerequisites: IDT 749/IDT 849.

IDT 775. Designing Online Instruction. 3 Credits.

An applied survey of online instruction, including relevant theory and design considerations. Topics include efficacy of online learning, design considerations when using course management systems and similar online learning technologies, research and future directions.

IDT 795. Topics in Instructional Design and Technology. 1-3 Credits.

Provides opportunities for master's and doctoral students to explore topics related to instructional design.

IDT 801. Instructional Design and Technology Seminar. 3 Credits.

Introduces new Ph.D. students to the field of instructional design and technology and provides orientation to doctoral level study. The course includes reading, critiquing and analyzing empirical research, theories, and real-world instructional problems. Potential student research agendas consistent with faculty or programmatic research foci will be explored. Academic and technological expectations will be communicated and practiced.

IDT 810. Trends and Issues in Instructional Design and Technology. 3 Credits.

Exploration and discussion of trends and issues of current and historical significance to instructional design. Readings will include contributions of key scholars, past and present, in instructional design and related fields. Includes analysis of trends and issues to track and predict their impact on the future of the field. Prerequisite: 9 hours IDT coursework.

IDT 825. Human Performance Assessment. 3 Credits.

This course focuses on the theory, design, and evaluation of measurement instruments used to assess individual knowledge, performance, and attitudes. Topics include fundamentals of measurement, reliability, validity, and instrument selection, construction, and use. Students will develop and evaluate instruments for instructional and research purposes. Prerequisite: FOUN 722 or equivalent.

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IDT 837. Consulting Skills for Instructional Designers. 3 Credits.

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IDT 875. Designing Online Instruction. 3 Credits.

An applied survey of online instruction, including relevant theory and design considerations. Topics include efficacy of online learning, design considerations when using course management systems and similar online learning technologies, research and future directions.

IDT 879. Research Residency in Instructional Design and Technology. 3 Credits.

An introduction to conducting instructional technology research. Students will work in consultation with their advisor to develop a proposal for a study related to instructional technology as part of their research residency that will be submitted for presentation at a nationally refereed conference or to a refereed journal.

IDT 895. Topics in Instructional Design and Technology. 3 Credits.

Provides opportunities for master's and doctoral students to explore topics related to instructional design.

IDT 898. Research Residency II. 1-3 Credits.

A mentored research project by the student's advisor. Students work independently with their advisor to complete the research residency project. This course focuses on obtaining appropriate human subjects approval, collecting and analyzing data, and preparing a manuscript suitable for presentation or publication in nationally refereed journal or conference. Course may be repeated as needed, but only 3 hours may be counted toward degree requirements. Prerequisites: IDT 879.

LIBRARY SCIENCE Courses**LIBS 602. Production of Instructional Materials. 3 Credits.**

Develops skills in preparing, evaluating, and presenting instructional materials and the use of those materials to promote higher-level thinking and enhance the learning environment. Includes elements of design, multimedia materials, and development of in-service activities. Hands-on practice in media production and dissemination.

LIBS 603. Online Resources for Teaching. 3 Credits.

Students will gain experience locating, evaluating, collecting, arranging, and disseminating content resources available as open educational resources to support learning and teaching. Issues surrounding open educational resources including copyright, licensing, access, and quality will be addressed. A primary focus will be on developing digital textbooks that may include websites, databases, current awareness experts, and digital field trips to support the delivery of instruction.

LIBS 605. Selection and Utilization of Non-Book Media. 3 Credits.

Emphasizes selection, purchase and utilization of non-book materials (e.g., periodicals, computers, CD-ROM, DVD, LANs, wireless networks, PDAs, e-books, retrieval systems, video conferencing, DL, online services, telecommunications, presentation systems). Included are staff development, systems management, information policies, networks, and the impact of professional associations on non-book resources. Prerequisites: LIBS 675.

LIBS 608. Foundations of Libraries and Information. 3 Credits.

This course provides social, cultural, and historical perspectives on libraries and librarianship. The purpose, functions and processes of libraries and information are explored. Current types of libraries and information agencies are explored. Legal, ethical, advocacy, and economic policies, trends and positions are addressed.

LIBS 612. Research Methods in Library and Information Studies. 3 Credits.

This course will introduce students to theoretical and applied research design, methodologies, and evaluation of research in library and information science (LIS). The course will include a review of existing research, allowing students to evaluate and assess the potential value of literature and research findings through critical analysis. Basic qualitative and quantitative research protocols will be learned through this class. Pre- or corequisite: LIBS 608.

LIBS 642. Children's Literature Across the Curriculum, PK-8. 3 Credits.

Students examine, evaluate, discuss, and use literature and related nonprint materials for children and young adolescents and explore strategies for using trade books across the curriculum and for introducing children to literature. Materials for adolescents and adults with limited reading abilities are also covered. Prerequisites: graduate standing.

LIBS 644. Literature and Media for Young Adults. 3 Credits.

An exploration of the selection of literature and media for young adults (ages 12 - 18). Includes current trends and research in teens' social, physical and cultural development, teen interests and needs, and multiple literacies. Focus is on multiple formats, diverse learners, and strategies to promote reading for information, pleasure and lifelong learning. Prerequisite: Graduate standing.

LIBS 647. Reading and Literature for Adults. 3 Credits.

Survey of trends and selection tools in literature and reading for adult library patrons including popular fiction and non-fiction genres in multiple formats and across life stages in adulthood. Strategies will include reader's advisory, book clubs, and other programming to meet the diverse needs and interests of adult readers.

LIBS 648. Reading, Evaluating, and Selecting Graphic Novels. 3 Credits.

This course explores the use, selection and evaluation of literature and media that use sequential art to tell stories in a visual format: comics, webcomics, graphic novels, and more. The course will include the history of the sequential art format; an exploration of reading through a variety of graphics, text and media; and a survey of current and historical titles for all ages. Students will explore resources for selecting and evaluating materials in graphic format as well as specific applications for graphic materials in classrooms and libraries.

LIBS 654. Information Literacy Instruction. 3 Credits.

Students will develop expertise in the delivery of in-person and online information literacy and research instruction in library and information contexts through an exploration of various information literacy models, standards, and theories. Students will gain practical experience in planning, implementing, and assessing library instruction and digital learning objects through a variety of delivery methods.

LIBS 655. Methods and Strategies for the School Library. 1-3 Credits.

Participants will draw from research-based theory of pedagogical best practice to discuss, model and apply practical applications to content topics. Content focuses on strategies to implement effective classroom management for the library learning environment, engage library learners and assess their performance, and build collaborative relationships that integrates library and content instruction into practice.

LIBS 656. User Services and Programming. 3 Credits.

An overview of the planning, evaluation, and administration of programs and services designed to meet the needs and interests of individuals and groups in libraries and other information spaces.

LIBS 658. Knowledge Resources: Planning, Selecting & Managing Collections. 3 Credits.

Examines the concepts and issues related to the lifecycle of recorded knowledge and information including emerging technologies. Addresses fundamentals of planning, selecting, analyzing, managing, and developing collections and technology resources for diverse communities. Pre- or corequisite: LIBS 608.

LIBS 668. Internship in Libraries and Information Workplaces. 1-9 Credits.

Students will work in a library or related workplace, fully participating in the day-to-day operations including administrative tasks, instruction, and/or other programming and services. Students taking this course for school library endorsement may have additional requirements/prerequisites. Prerequisites: LIBS 608, LIBS 658, LIBS 677, and LIBS 674.

LIBS 669. Internship in School Libraries. 3-6 Credits.

Students will work in a school library setting, participating fully in the administrative tasks, collaborative planning with teaching peers, and preparation and delivery of instructional lessons. This course is for students who are already licensed teachers or who are seeking initial licensure in school librarianship. Prerequisites: LIBS 602, LIBS 608, LIBS 642, LIBS 644, LIBS 658, LIBS 674, LIBS 676, OR LIBS 677.

LIBS 674. Library Management and Leadership. 3 Credits.

An examination of the critical issues concerning the leadership and management of a library. Students will explore the issues involved in building library programs to include considerations of physical space, budgetary decisions, and personnel. Pre- or corequisite: LIBS 608.

LIBS 675. Administration, Management, and Evaluation of Libraries. 3 Credits.

Entry-level course dealing with the planning, organization, and management of the school library media center. Includes professionalism and ethics in librarianship, facilities planning to impact student learning, and management of human resources. Prerequisites: graduate standing.

LIBS 676. Library Media Services and the Curriculum. 3 Credits.

Emphasis is on library services/ programs and the curriculum of the school. Includes techniques for curriculum design and development, information skills instruction, instructional partnerships, advocacy, implementation of an integrated library-media instructional program and public relations programs. Pre- or corequisite: LIBS 602 and LIBS 608.

LIBS 677. Knowledge Organization and Access. 3 Credits.

Describes the fundamentals whereby library materials are uniformly described and made available through recognized cataloging, processing, organizing and accessing of materials. In this course, students will develop the ability to apply and adapt the principles of classifying and cataloging, and will understand how these fundamental skills fit into the broader area of technical processing and how they support the principles of services in the library. Pre- or corequisite: LIBS 608.

LIBS 678. Selection, Evaluation and Utilization of Materials NK-12. 4 Credits.

Emphasis is on reading and evaluating current materials for children and young adults, researching reading/viewing/ listening preferences, analyzing studies dealing with literature/media, and selecting materials. Also includes collection analysis and development. Prerequisites: graduate standing, LIBS 642, and LIBS 675.

LIBS 679. Theory and Management of Reference and Information Retrieval. 3 Credits.

Students evaluate, select, and use reference sources; explore strategies for teaching reference skills across the curriculum; use curriculum information to evaluate reference collections and prepare bibliographies; and explore issues related to reference services. Utilizes print as well as existing and emerging technologies. Prerequisites: graduate standing and LIBS 675.

LIBS 680. Culturally Responsive Librarianship. 3 Credits.

This course provides thought-provoking background and practical suggestions for engaging with a diverse population. Participants explore their own assumptions about race, class, and culture and learn strategies for creating environments and an open dialog that are culturally inviting to all.

LIBS 681. Assessment and Evaluation in Library and Information Science. 3 Credits.

Students will explore assessment and evaluation related to library and information contexts with particular attention to historical and current theories and values, relevant standards, and current initiatives and measures. Students will design an evaluation of a current library service or resource that is connected to library goals and objectives with a presentation to effectively communicate data to various stakeholders. Prerequisite: LIBS 608.

LIBS 690. Seminar in Academic Libraries. 3 Credits.

Academic libraries are dynamic organizations, working to meet the needs of their users and stakeholders while supporting parent higher education institutions. This course examines the functions of the academic library within the higher education environment. A wide variety of topics are covered in this survey of the field, including a focus on the historical background, current trends, and future directions in academic librarianship.

LIBS 691. Seminar in Public Libraries. 3 Credits.

Students will gain an understanding of public libraries in the United States and their role within their communities. Topics covered include a historical background of public libraries, overviews of current trends, and future directions in public libraries. This course also explores public services, the roles and expectations of public librarianship as a career.

LIBS 695. Topics in Library and Information Studies. 1-3 Credits.

This course provides opportunities for graduate students to explore current topics, trends and issues related to libraries and information studies.

LIBS 697. Independent Study in Library Science. 1-3 Credits.

This course is an independent study of special topics in Library Science. Prerequisites: Instructor approval required.

LIBS 998. Master's Graduate Credit. 1 Credit.

This course is a pass/fail course for master's students in their final semester. It may be taken to fulfill the registration requirement necessary for graduation. All master's students are required to be registered for at least one graduate credit hour in the semester of their graduation.

MATH PEDAGOGY Courses

MAPD 601. Number and Operations for PK-8 Mathematics Specialists. 3 Credits.

This course will meet the requirements of students in the Master of Science in Education: PK-8 Mathematics Specialist Endorsement Program, and cannot be used for credit toward any degree offered by the Department of Mathematics and Statistics. The course introduces students to a number of topics in PK-8 mathematics and related pedagogical methods. Acknowledging that learning with understanding occurs through a process of establishing a solid knowledge base upon which to build, students will explore the many and varied ways in which PK-8 students may develop number sense. The focus will be upon the development of best practices for teaching mathematics. This requires that the student have knowledge of the content, use a variety of pedagogical approaches, and be able to select and utilize appropriate manipulatives and technological resources that will foster PK-8 student understanding.

MAPD 602. Geometry and Measurement for PK-8 Mathematics Specialists. 3 Credits.

This course will meet the requirements of students in the Master of Science in Education: PK-8 Mathematics Specialist Endorsement Program, and cannot be used for credit toward any degree offered by the Department of Mathematics and Statistics. The course introduces students to a number of topics in PK-8 mathematics and related pedagogical methods. Following a "concrete-to-abstract" developmental learning approach, students will explore the mathematical concepts of measurement and geometry in grades PK-8. Emphasis will be placed upon measurement and geometry content knowledge as well as the pedagogical knowledge specific to mathematics teaching and learning. Students will also learn to use appropriate technology.

MAPD 603. Rational Numbers and Proportional Reasoning for PK-8 Mathematics Specialists. 3 Credits.

This course will meet the requirements of students in the Master of Science in Education: PK-8 Mathematics Specialist Endorsement Program, and cannot be used for credit toward any degree offered by the Department of Mathematics and Statistics. The course introduces students to a number of topics in PK-8 mathematics and related pedagogical methods. It is designed to engage participants in constructing relational understanding between theoretical development of mathematics and students' learning of mathematics in the content strands of rational numbers and proportional reasoning. Students will learn how to select and use manipulatives to connect the concrete phase of mathematical learning to the abstract, symbolic phase. Various technologies will be integrated throughout the course as tools to enhance teaching and student understanding.

MAPD 604. Probability and Statistics for PK-8 Mathematics Specialists. 3 Credits.

This course will meet the requirements of students in the Master of Science in Education: PK-8 Mathematics Specialist Endorsement Program, and cannot be used for credit toward any degree offered by the Department of Mathematics and Statistics. The course introduces students to a number of topics in PK-8 mathematics and related pedagogical methods. It will focus on the content and processes that support the PK-8 students' learning of probability and statistics. Instruction will cover data collection, display, and analysis as well as the development of a fundamental understanding of probabilistic structures. These structures will be related to real world problem solving and hands-on activities. Technology will be integrated throughout the course to illustrate mathematical concepts, facilitate students exploration, and to make and test hypotheses.

MAPD 605. Algebra and Functions for PK-8 Mathematics Specialists. 3 Credits.

This course will meet the requirements of students in the Master of Science in Education: PK-8 Mathematics Specialist Endorsement Program, and cannot be used for credit toward any degree offered by the Department of Mathematics and Statistics. The course introduces students to a number of topics in PK-8 mathematics and related pedagogical methods. It will focus on topics that are encountered by middle and high school students as they move from the particular and concrete thinking of school arithmetic to the abstract thinking associated with algebra. The main themes covered include algebraic reasoning, generalization, and justification together with patterns and functions. Various technologies will be integrated within the course content and used as tools to enhance students' understanding of the concepts of algebra.

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS EDUCATION Courses

STEM 533. Developing Instructional Strategies PreK-6: Mathematics. 3 Credits.

Following a theory into practice philosophy, students explore, develop, and use instructional strategies, materials, technologies, and activities to promote children's development of attitudes, behaviors, and concepts in mathematics in grades PreK-6 in support of NCTM national instructional standards and the Virginia Standards of Learning. Prerequisites: TLED 617.

STEM 534. Developing Instructional Strategies PreK-6: Science. 3 Credits.

Following a theory into practice philosophy, students explore, develop, and use instructional strategies, materials, technologies, and activities to promote children's development of attitudes, behaviors, and concepts in science in grades PreK-6 in support of AAAS national instructional standards and the Virginia Standards of Learning.

STEM 553. Developing Instructional Strategies for Teaching in the Middle/High School: Mathematics. 3 Credits.

Following a theory/research-into-practice philosophy, students explore, develop, and use instructional strategies, materials, technologies, and activities to promote the development of attitudes, behaviors, and concepts in mathematics, grades 6-12, in support of national instructional standards and the Virginia Standards of Learning; 35 hours of teaching practicum required. Corequisite: TLED 583. Prerequisites: TLED 617 or TLED 677, passing scores on the Praxis Core examination or equivalent SAT scores as established by VA Board of Education, a criminal background check, acceptance into teacher education, grade requirement in the specific content area and professional education core, minimum major and overall GPA of at least 2.75; additional prerequisite for MCTP students is TLED 608.

STEM 554. Developing Instructional Strategies for Teaching in the Middle/High School: Science. 3 Credits.

Following a theory/research-into-practice philosophy, students explore, develop, and use instructional strategies, materials, technologies, and activities to promote the development of attitudes, behaviors, and concepts in science, grades 6-12, informed by national instructional standards and the Virginia Standards of Learning; 35 hours of teaching practicum required. Prerequisites: TLED 617, or TLED 677, passing scores on the Praxis Core examination or equivalent SAT scores as established by VA Board of Education, a criminal background check, acceptance into teacher education, grade requirement in the specific content area and professional education core, minimum major and overall GPA of at least 2.75; additional prerequisite for MCTP students is TLED 608.

STEM 595. Topics. 1-3 Credits.

The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule.

STEM 651. Differentiation of Mathematics Instruction for Diverse Student Populations. 3 Credits.

Adapting the mathematics teaching and learning practices to accommodate diverse populations will be explored. The essential knowledge and understanding needed by mathematics specialists to assist classroom teachers in effectively utilizing differentiated instruction will be highlighted.

STEM 654. Science in the Elementary/Middle School. 3 Credits.

Current developments and educational research are applied to instructional methodology with an emphasis on hands-on activities in the school science curriculum.

STEM 655. Culturally Responsive Classroom. 3 Credits.

This course will focus on the following elements of effective teaching practice: understanding discipline specific content and methods, employing best-practice strategies to teach discipline specific skills and concepts, assessing student learning, legal and safety issues, use of technology, issues of diversity, engagement with the community, and strategies for continuing to grow as a teacher and learner.

STEM 660. Action Research for Mathematics Specialists. 3 Credits.

Action Research is introduced as a means to conduct classroom-based studies in the context of mathematics. The practical nature of research methods that mathematics specialists can use in conjunction with their mathematics instructional program is emphasized. Prerequisites: Departmental approval required.

STEM 661. Mathematics Specialists as Teacher Leaders. 3 Credits.

The critical characteristics and responsibilities of Mathematics Specialists as teacher leaders will be explored. Structuring classroom assistance through peer coaching, mentoring, observations and conferencing will be highlighted to expand the prospective Mathematics Specialists' leadership capacity.

STEM 662. Mathematical Assessment for Data Driven Decisions. 3 Credits.

Selected key differences between assessment for and of learning will be examined as a means to provide rich descriptions of student learning. Designing and using quality assessment systems to inform instructional decisions and guide student learning will serve as a framework for Mathematics Specialists.

STEM 668. Internship for Mathematics Specialist. 3 Credits.

An internship experience that provides mathematics specialists an opportunity to develop the necessary knowledge, skills and dispositions to impact and improve the mathematics program of schools. Requires 150 hours of internship. Prerequisites: MATH 335.

STEM 720. STEM Educational Foundations. 3 Credits.

A multidisciplinary course designed to provide insights about the fundamental concepts and basis for STEM education programs. Standards for the school subjects of science, technology, engineering education and mathematics literacy will be reviewed. Connections between these subjects will be explored.

STEM 721. Science, Technology, Engineering, and Mathematics Connection and Integration. 3 Credits.

A course designed to teach how to plan integrated STEM curriculum and instructional materials. A review of projects that have undertaken STEM integration will be made. Students will learn how to map STEM content and then design STEM integrated curriculum and instructional materials. Prerequisite: STEM 720 or STEM 820.

STEM 730. Introduction to Technology. 3 Credits.

Order and structure the discipline of technology by identifying and analyzing the component parts and examining technical means as critical variables in the affairs of humankind. Based on the Standards for Technological Literacy.

STEM 731. Technical Systems. 3 Credits.

Analyze the technical concepts common and unique to the technical systems of technology.

STEM 732. Program Development for Technology Education. 3 Credits.

Plan and develop effective program in technology related activities. Focus is on identification and development of resources, activities, and materials for classroom programs.

STEM 795. Topics. 1-3 Credits.

STEM 820. STEM Educational Foundations. 3 Credits.

A multidisciplinary course designed to provide insights about the fundamental concepts and basis for STEM education programs. Standards for the school subjects of science, technology, engineering education and mathematics literacy will be reviewed. Connections between these subjects will be explored.

STEM 821. Science, Technology, Engineering, and Mathematics Connection and Integration. 3 Credits.

A course designed to teach how to plan integrated STEM curriculum and instructional materials. A review of projects that have undertaken STEM integration will be made. Students will learn how to map STEM content and then design STEM integrated curriculum and instructional materials. Prerequisite: STEM 720 or STEM 820.

STEM 830. Introduction to Technology. 3 Credits.

Order and structure the discipline of technology by identifying and analyzing the component parts and examining technical means as critical variables in the affairs of humankind. Based on the Standards for Technological Literacy.

STEM 831. Technical Systems. 3 Credits.

Analyze the technical concepts common and unique to the technical systems of technology.

STEM 832. Program Development for Technology Education. 3 Credits.

Plan and develop effective program in technology related activities. Focus is on identification and development of resources, activities, and materials for classroom programs.

STEM 895. Topics. 3 Credits.

STEM EDUCATION AND PROFESSIONAL STUDIES Courses

SEPS 500. Instructional Systems Development. 3 Credits.

Students learn how to design and develop classroom instructional materials including career and technical education and training curricula and programs for youths and adults. Skills in this area include the selection and use of materials, including media and computers and evaluation of pupil performance. Training specialist students learn to develop instructional materials using the instructional systems design process. Career and technical education students learn to plan instruction, to implement competency-based and standards-based education, and to modify and use the Virginia career and technical education curriculum guides.

SEPS 501. Foundations of Career and Technical Education. 3 Credits.

This course is designed to teach career and technical education majors to plan, develop, and administer a comprehensive program of career and technical education for high school students and adults. Students also develop an understanding of the historical and sociological foundations underlying the role, development and organization of public education in the United States.

SEPS 502. Instructional Methods in Occupational Studies. 3 Credits.

Designed to develop a student's ability to use basic instructional techniques and methods applicable to career and technical education, and adults in business, government, and industrial organizations. It involves videotaped micro-teaching demonstrations.

SEPS 503. Methods in Career and Technical Education. 3 Credits.

A practical study and application of recommended methods of teaching career and technical education to high school students. Video-taped micro-teaching demonstrations are included. The course should be taken the semester prior to student teaching.

SEPS 508. Advanced Classroom Issues and Practices in Career and Technical Education. 3 Credits.

An overview of classroom issues and practices for prospective career and technical teachers. The course covers classroom management and safety, communication processes, reading in the content area and child abuse and neglect recognition and intervention. Students learn the legal requirements and alternative teaching strategies for serving students with special needs. Students visit schools for a 30-hour student observation. PRAXIS II completion is a course requirement. Prerequisites: junior standing and passing scores on PRAXIS I or State Board of Education-approved SAT or ACT scores.

SEPS 509. Fashion Forecasting Market Trip. 3 Credits.

This is the study of planning and conducting a fashion buying trip to one of the major fashion markets in the United States like the Las Vegas Magic Trade Show. The students envision themselves as buyers in action and learn how trend forecasting and creative presentations help market fashion products and services to trade customers and consumers.

SEPS 510. The Foreign Fashion Market Trip. 3 Credits.

Students plan and conduct a fashion buying trip to a foreign market in Europe or Asia, and learn how to buy merchandise in the global marketplace. The course requires students to go on the trip as well as attend the pre- and post-trip classes. Prerequisite: SEPS 208.

SEPS 511. Fashion Show Production. 3 Credits.

Students plan and produce a fashion show. They examine each behind-the-scenes step from concept to execution as they organize and stage a show that is profitable, entertaining, and aesthetically pleasing.

SEPS 523. Visual Merchandising and Display. 3 Credits.

This course is designed to introduce students to the best practices and effective strategies in visual merchandising. It will provide the basic framework with which prospective merchandisers plan and construct visual displays that enhance the selling of merchandise and ideas. Prerequisite: permission of the instructor.

SEPS 524. Fashion, Textiles, and Construction Analysis. 3 Credits.

This course explores information related to new technological advances in the textile/apparel industry and determines consumer preferences and concepts of fashion product quality. It includes the development of standards for judging qualities of merchandise. Fabrics are examined to determine the value they provide to the apparel and accessories customer. Prerequisite: permission of the instructor.

SEPS 531. Web-Based Organization for Fashion. 3 Credits.

This course provides the basic communications foundations needed to conceive, plan, develop, implement, and maintain a Web-based organization for fashion. Upon completion, students will understand what is required to plan, launch and maintain a successful online venture, limited only by the willingness of the student to explore these technological advances.

SEPS 535. International Retailing. 3 Credits.

This course examines globalization and the development of an integrated global economy. Primary emphasis is placed on the strategies for successful global business expansion for retailers in international markets.

SEPS 540. Fashion Global Sourcing/Supply Chain Management. 3 Credits.

This course examines the role of global sourcing in the strategic positioning of retailers in the global economy. Emphasis is placed on economic, political, logistical, and ethical factors affecting world trade and global sourcing decisions.

SEPS 550. Assessment, Evaluation and Improvement. 3 Credits.

This course prepares training and educational professionals to plan for and conduct assessments to use in planning instructional programs, evaluate individual learning, monitor student progress, measure program effectiveness and efficiency, and evaluate the return on investments of training courses and programs.

SEPS 584. Student Teaching Mentored. 6-12 Credits.

Classroom placement in school systems for students to apply content and methodologies. The student is mentored by a school mentor and university faculty. This course is for newly hired teachers on provisional contracts. Prerequisites: completion of the approved teacher education program in the major area, departmental approval, and permission of the director of teacher education services; passing scores on PRAXIS I or State Board of Education-approved SAT or ACT scores and passing scores on the appropriate PRAXIS II content examination required.

SEPS 586. Middle School Student Teaching for Technical Education. 6 Credits.

Classroom placement for student teaching in a middle school technology laboratory. Students apply content and methodology under the supervision of a cooperating teacher and university faculty member. Available for pass/fail grading only. Prerequisites: SEPS 408, SPED 313, TLED 408 and SEPS 450; or SEPS 508, 596, STEM 730, SEPS 788, TLED 608, READ 680 for graduate students; passing scores on PRAXIS I or State Board of Education-approved SAT or ACT scores and passing scores on the appropriate PRAXIS II content examination are required.

SEPS 595. Topics in Occupational Education. 1-3 Credits.

The department offers selected topics designed to permit small groups of qualified students to work in subjects of mutual interest which, due to their specialized nature, may not be offered regularly. Prerequisite: permission of the instructor.

SEPS 596. Topics in Career and Technical Education. 1-3 Credits.

The department offers selected topics designed to permit small groups of qualified students to work in subjects of mutual interest which, due to their specialized nature, may not be offered regularly. Prerequisite: permission of the instructor.

SEPS 597. Independent Study in Occupational Education. 1-6 Credits.

Independent study. Prerequisite: permission of the instructor.

SEPS 636. Problems in Occupational and Technical Studies. 3 Credits.

Taken the last semester of graduate work. Practice in the use of statistical and analytical techniques in solving problems in occupational and technical studies related to secondary, community college, and training environments. Prerequisites: FOUN 612.

SEPS 695. Topics in Occupational Education. 1-3 Credits.

The department offers selected topics designed to permit groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly.

SEPS 696. Topics in Occupational Education. 1-3 Credits.

The department offers selected topics designed to permit groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly.

SEPS 697. Independent Study in Occupational Education. 1-3 Credits.

Individual study under the supervision of a graduate faculty member. Prerequisites: permission of the instructor.

SEPS 698. Thesis in Occupational Education. 3-6 Credits.

Research and writing of the master's thesis and scheduled conferences with the candidate's advisor. Prerequisite: permission of the advisor.

SEPS 740. Readings in Occupational and Technical Studies. 3 Credits.

A guided review of the literature to determine the history, development, and issues of occupational and technical education, including specialization in technology education, career and technical education specialties, and human resources training.

SEPS 750. Trends and Issues in Training: Modeling and Simulation. 3 Credits.

This course is designed to explore the issues and trends in developing and implementing technology-based training with emphasis on modeling and simulation.

SEPS 760. Trends and Issues in Occupational Education. 3 Credits.

This course prepares training and educational professionals to plan for and conduct assessments to use in planning research findings and issues related to tech prep and other articulated programs being established in secondary schools, community colleges, and four-year institutions. Prerequisites: junior standing.

SEPS 761. Foundations of Adult Education and Training. 3 Credits.

This course is a study of adult education and training in many settings including the community college, business, industry, labor, government, the military, and social service agencies of many types. An attempt will be made to assess the important trends or directions such activities are taking, including the needs of non-traditional learners and education and labor.

SEPS 762. Administration and Management of Education and Training Programs. 3 Credits.

This course deals with organizational policy, human and financial resources, facilities, and the planning process as applied to occupational education and adult training programs.

SEPS 765. Trends and Issues of Economic and Workforce Development. 3 Credits.

An analysis of economic trends and issues that lead to workforce development decisions. Focus is on planning for educational and training programs to meet workforce needs dictated by local and regional economic issues. This course is designed for community college and school system personnel. Prerequisite: student must be accepted into doctoral program or have permission of the instructor.

SEPS 785. Curriculum Development in Occupational Education and Training. 3 Credits.

A course designed to prepare students to design and develop curriculum for occupational education and training courses and programs. Included is a focus on articulation between secondary and post-secondary curriculum.

SEPS 787. Career and Technical Education Curriculum. 3 Credits.

Learn the various curriculum options taught in secondary schools under the auspices of career and technical education. Work from an administrative standpoint to learn the mission and goals of the various subject areas and plan to direct such efforts.

SEPS 788. Instructional Strategies for Innovation in Training and Occupational Education. 3 Credits.

Learning and teaching styles are considered as a basis for developing instructional strategies to maximize occupational and technical education at all levels, including secondary, the community college, and senior institutions. Relevant learning theories and knowledge of self, learner, and the environment are blended to enhance the participants' instructional strategies.

SEPS 789. Instructional Technology in Education and Training. 3 Credits.

A course that provides insights about trends, issues, and the applications of instructional technologies as they may be applied to education and training environments. Topics include selected technical processes and electronic media to solve practical problems in educations and training.

SEPS 790. Practicum in Occupational Education. 3 Credits.

Individually prescribed instruction under the supervision of a graduate faculty member. Study intended to professionally fulfill development of graduate candidates. Prerequisite: permission of the graduate program director.

SEPS 795. Topics in Occupational Education. 1-3 Credits.

The department offers selected topics designed to permit groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly.

SEPS 797. Independent Study in Occupational Education. 1-6 Credits.

Individual study under the supervision of a graduate faculty member. Prerequisite: Permission of the instructor.

SEPS 835. Research Design for Occupational and Technical Studies. 3 Credits.

Analyses of current research and needs in occupational and technical studies. Students analyze the literature and develop a research focus for future graduate studies.

SEPS 840. Readings in Occupational and Technical Studies. 3 Credits.

A guided review of the literature to determine the history, development, and issues of occupational and technical education, including specialization in technology education, career and technical education specialties, and human resources training.

SEPS 850. Trends and Issues in Training; Modeling and Simulation. 3 Credits.

This course is designed to explore the issues and trends in developing and implementing technology-based training with emphasis on modeling and simulation.

SEPS 860. Trends and Issues in Occupational Education. 3 Credits.

Trends in philosophy, workforce needs, curriculum and teaching procedures in occupational and technical education. Analysis of research findings and issues related to tech prep and other articulated programs being established in secondary schools, community colleges, and four-year institutions.

SEPS 861. Foundations of Adult Education and Training. 3 Credits.

This course is a study of adult education and training in many settings including the community college, business, industry, labor, government, the military, and social service agencies of many types. An attempt will be made to assess the important trends or directions such activities are taking, including the needs of non-traditional learners and education and labor.

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SEPS 868. Internship. 3 Credits.

Supervised assignment to an agency operating an occupational education or training program. Prerequisite: permission of the instructor.

SEPS 885. Curriculum Development in Occupational Education and Training. 3 Credits.

A course designed to prepare students to design and develop curriculum for occupational education and training courses and programs. Included is a focus on articulation between secondary and post-secondary curriculum.

SEPS 887. Career and Technical Education Curriculum. 3 Credits.

Learn the various curriculum options taught in secondary schools under the auspices of career and technical education. Work from an administrative standpoint to learn the mission and goals of the various subject areas and plan to direct such efforts.

SEPS 888. Instructional Strategies for Innovation in Training and Occupational Education. 3 Credits.

Learning and teaching styles are considered as a basis for developing instructional strategies to maximize occupational and technical education at all levels, including secondary, the community college, and senior institutions. Relevant learning theories and knowledge of self, learner, and the environment are blended to enhance the participants' instructional strategies.

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SEPS 890. Practicum in Occupational Education. 3 Credits.

Individually prescribed instruction under the supervision of a graduate faculty member. Study intended to professionally fulfill development of graduate candidates. Prerequisites: permission of the graduate program director.

SEPS 895. Topics in Occupational Education. 1-3 Credits.

The department offers selected topics designed to permit groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly.

SEPS 897. Independent Study in Occupational Education. 1-6 Credits.

Individual study under the supervision of a graduate faculty member. Prerequisite: Permission of the instructor.

SEPS 899. Dissertation in Occupational Education. 1-12 Credits.

Work on pre-selected dissertation topics under the direction of dissertation committee chair. Prerequisite: permission of dissertation committee chair.

SEPS 998. Master's Graduate Credit. 1 Credit.

This course is a pass/fail course for master's students in their final semester. It may be taken to fulfill the registration requirement necessary for graduation. All master's students are required to be registered for at least one graduate credit hour in the semester of their graduation.

SEPS 999. Doctoral Graduate Credit. 1 Credit.

This course is a pass/fail course doctoral students may take to maintain active status after successfully passing the candidacy examination. All doctoral students are required to be registered for at least one graduate credit hour every semester until their graduation.