

# TECHNOLOGY AND INNOVATION, M.S., EDUCATION CONCENTRATION

The Master of Science in Technology and Innovation degree program has been created for students from a variety of backgrounds, including education; business and industry; science and technology; and entrepreneurship. The program has two concentrations from which to choose— education and enterprise. The courses in the program are designed to develop and engage students in creativity, design thinking, innovation, ingenuity, problem solving, critical thinking, decision making, research, curiosity, scholarship, leadership, and professionalism. The thinking processes of professionals such as designers, engineers and entrepreneurs are the foundation of the Technology and Innovation core courses. These thinking processes are universal and enduring concepts and are widely considered important tools for success in a world submerged in technology. Experiences in this program provide students with insight as to how their own thinking processes affect them in both their personal and professional lives, and how those thinking processes can be modified to meet the circumstances. Teachers, employees and business leaders alike will learn to think about their own thinking. The Technology and Innovation program is structured to be flexible enough to allow students to customize their graduate studies to a significant degree. This flexibility enables students in the program to make choices, including which option works best to complete the program, the topic to explore through a thesis or research and development technical project, or the variety of courses from which to choose to address one's areas of interest or professional development needs.

## Admission Requirements

Applicants must possess a baccalaureate degree. Students holding a variety of baccalaureate degrees can benefit from the completion of the Master of Science in Technology and Innovation. Admission to the program is granted after a favorable review of application materials. A minimum undergraduate cumulative average of 3.0 is required. Applicants with less than a 3.0 GPA are required to submit test scores from either the Miller Analogies Test (MAT) or the Graduate Record Examination (GRE) that are determined to be acceptable by the department. Probationary admission may be granted at the discretion of the department. See the *Admission Requirements* section for additional application information. Selected graduate courses may be credited toward both graduate-level certificates or teaching endorsements and the master's degree in technology and innovation. See the department chairperson or graduate program coordinator for further information.

## Degree Requirements

Each student is required to complete all four courses in the technology and innovation core and either the education core or the enterprise core (depending on the degree concentration selected), and the identified expectations of one of the three degree-completion options.

- Option 1 - the Thesis Option. A thesis (EDTE 699 Thesis:) must be satisfactorily completed as part of a minimum of 30 s.h. of approved graduate study.
- Option 2 - the Applied Research Option. Requires satisfactory completion of EDTE 698 Research and Development Technical Project as part of 33 s.h. of approved graduate study.

- Option 3 involves the completion of 36 s.h. of graduate study by taking five approved elective courses which have been selected based on their fit to the professional development needs of the student.

Technology and innovation and other approved courses in related disciplines are elected to complete the semester-hour requirements. The graduate program coordinator serves as the advisor for all graduate students pursuing a master's degree. Master's degree candidates who elect the thesis option will select, in consultation with the graduate coordinator, a thesis advisor from the Department of Applied Engineering, Safety and Technology. The thesis advisor will work with at least two other members of a student's thesis committee. These other committee members must consist of at least one other graduate-level faculty member of the Department of Applied Engineering, Safety and Technology. The third member must come from outside of the department and can be a recognized expert in a given field.

## DEGREE CANDIDACY

The student will apply for admission to degree candidacy after completing six to 15 s.h. of graduate-degree credits. Graduate faculty will evaluate the student's performance and provide a written recommendation regarding the individual as a degree candidate. At the time of admission to degree candidacy, the student will consult with the graduate program coordinator to review and update his or her program of studies for completing the degree requirements.

## Major in Technology and Innovation - MS

Code	Title	Hours
Depending on the completion option you choose, your total credits needed for degree completion will vary. Thesis option=30 credits. RD Report option=33 credits. Elective option=36 credits.		
TECHNOLOGY INNOVATION PROGRAM COMMON CORE		12
EDTE 603	Fostering Creativity by Design	
EDTE 604	Engineering Principles and Concepts for the Non-Engineer	
EDTE 605	Applying Critical Thinking and Decision Making	
EDTE 646	Writing the Professional Paper	
DEGREE COMPLETION OPTIONS - Choose 1 of the following:		9-15
THESIS OPTION - 30 CREDITS - See Appendix 1		
RESEARCH DEVELOPMENT TECHNICAL PROJECT - 33 CREDITS - See Appendix 2		
TECHNOLOGY INNOVATION ELECTIVES - 36 CREDITS - See Appendix 3		
Concentration in Education - See separate block		
<b>Total Hours</b>		<b>21-27</b>

## Appendix 1. THESIS OPTION - 30 CREDITS

Code	Title	Hours
Technology Innovation Thesis		6
EDTE 699	Thesis:	
Technology Innovation Electives - Choose 3 hours from:		3
ACTE 625	Technology and Assessment for Learning	
ACTE 630	Current Technology for Online Instruction	
ACTE 632	Online Learning Environments	
ACTE 633	Learners in Online Classrooms	
ACTE 634	Legal and Ethical Issues in Online Education	

ACTE 635	Instructional and Curricular Design for Online, Blended and Customized Instruction
ACTE 651	Science Curriculum and Reform
ACTE 655	Integrative STEM Education
ART 526	Trends Art Ed:
ART 584	Intro Studio Art:
COMM 610	Seminar in Organizational Comm
CSCI 501	Coding for Educators
ECHD 614	Advanced Curriculum in ECHD
EDFN 520	Instructional Technology in Elem Ed
EDFN 530	Instructional Technology, Design and Assessment
EDLD 610	Theory and Organizatnl Behavr
EDLD 614	School Community Relations
EDLD 620	School Law and Public Policy
EDLD 667	Leadership Seminar 1
EDLD 668	Leadership Seminar 2
EDLD 669	Leadership Seminar 3
EDTE 586	Topics in Industry & Tech
EDTE 587	Topics in Industry & Tech
EDTE 588	Sp Topics in Industry & Tech
EDTE 589	Sp Topics in Industry & Tech
EDTE 690	Integrvtve Lrning Exprntl Strgy
EDTE 691	Independent Study
EDUC 575	Current Trends in Education
EDUC 580	Methods for Teaching English Language Learners
EDUC 651	Math in the School Program
EDUC 661	Science in the School Program
EMGT 601	Principles & Practices of Emergency Management
EMGT 605	Social Dimensions of Disaster
EMGT 607	Emergency Mental Health and Trauma
EMGT 615	Emergency Preparedness for Industry
EMGT 619	Emergency Management Planning
EMGT 629	Topics: (Topics: Business Continuity)
ENTR 510	ENTR Promotions & Branding
ENTR 511	Entre: Networking & Sales
ENTR 540	Entrepreneurship Capstone
GFED 670	Psychology of the Gifted
GFED 674	Program for the Gifted
GFED 675	Evaluating Instruct. Effectiveness: App for the Gifted
GFED 676	Teaching Gifted Learners Instructional Strategies
AENG 515	Adv Prob:
AENG 525	Adv Prob:
AENG 535	Adv Prob:
AENG 586	Special Topics:
AENG 587	Special Topics:
AENG 588	Special Topics:
AENG 589	Special Topics:
MATH 622	21st Century Math
SOWK 501	Principles and Philosophies of Social Work
SOWK 505	Understanding Social Work Practices w Diverse Pops
SOWK 510	Human Behavior in the Social Environment I

SOWK 511	Human Behavior in the Social Environment II
SOWK 515	Social Welfare Policy
SOWK 619	Global Perspectives in SOWK
SPED 600	Introduction to Exceptional Education
SPED 601	Psyc of Stdnts w/ Disabilities
SPED 651	Advocacy and Leadership in Special Education
SPED 671	Behavior Management
WSSD 551	Coaching of Sport
WSSD 601	Organization and Administration of Sport Programs
WSSD 602	Sport in American Culture
WSSD 604	Event Management
WSSD 610	Women in Sport
WSSD 615	Campus Recreation Program
WSSD 622	Sport Finance
Any WSSD 686-689 course(s)	
WSSD 691	Ind Std:

## Appendix 2. RESEARCH & DEVELOPMENT TECHNICAL PROJECT - 33 CREDITS

Code	Title	Hours
Research Development Report		6
EDTE 698	Research and Development Technical Project	
Technology Innovation Electives - Choose 6 hours from:		6
ACTE 625	Technology and Assessment for Learning	
ACTE 630	Current Technology for Online Instruction	
ACTE 632	Online Learning Environments	
ACTE 633	Learners in Online Classrooms	
ACTE 634	Legal and Ethical Issues in Online Education	
ACTE 635	Instructional and Curricular Design for Online, Blended and Customized Instruction	
ACTE 651	Science Curriculum and Reform	
ACTE 655	Integrative STEM Education	
ART 526	Trends Art Ed:	
ART 584	Intro Studio Art:	
COMM 610	Seminar in Organizational Comm	
CSCI 501	Coding for Educators	
ECHD 614	Advanced Curriculum in ECHD	
EDFN 520	Instructional Technology in Elem Ed	
EDFN 530	Instructional Technology, Design and Assessment	
EDLD 610	Theory and Organizatnl Behavr	
EDLD 614	School Community Relations	
EDLD 620	School Law and Public Policy	
EDLD 667	Leadership Seminar 1	
EDLD 668	Leadership Seminar 2	
EDLD 669	Leadership Seminar 3	
EDTE 586	Topics in Industry & Tech	
EDTE 587	Topics in Industry & Tech	
EDTE 588	Sp Topics in Industry & Tech	
EDTE 589	Sp Topics in Industry & Tech	
EDTE 590		
EDTE 592		
EDTE 690	Integrvtve Lrning Exprntl Strgy	

EDTE 691	Independent Study
EDUC 575	Current Trends in Education
EDUC 580	Methods for Teaching English Language Learners
EDUC 651	Math in the School Program
EDUC 661	Science in the School Program
EMGT 601	Principles & Practices of Emergency Management
EMGT 605	Social Dimensions of Disaster
EMGT 607	Emergency Mental Health and Trauma
EMGT 615	Emergency Preparedness for Industry
EMGT 619	Emergency Management Planning
EMGT 629	Topics: (Topics: Business Continuity)
ENTR 510	ENTR Promotions & Branding
ENTR 511	Entre: Networking & Sales
ENTR 540	Entrepreneurship Capstone
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GFED 675	Evaluating Instruct. Effectiveness: App for the Gifted
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AENG 515	Adv Prob:
AENG 525	Adv Prob:
AENG 535	Adv Prob:
AENG 586	Special Topics:
AENG 587	Special Topics:
AENG 588	Special Topics:
AENG 589	Special Topics:
MATH 622	21st Century Math
SOWK 501	Principles and Philosophies of Social Work
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SPED 651	Advocacy and Leadership in Special Education
SPED 671	Behavior Management
WSSD 551	Coaching of Sport
WSSD 601	Organization and Administration of Sport Programs
WSSD 602	Sport in American Culture
WSSD 604	Event Management
WSSD 610	Women in Sport
WSSD 615	Campus Recreation Program
WSSD 622	Sport Finance
WSSD 686-689	
WSSD 691	Ind Stdy:

### Appendix 3. TECHNOLOGY & INNOVATION ELECTIVES - 36 CREDITS

Code	Title	Hours
Technology Innovation Electives - Choose 15 hours from:		15
ACTE 625	Technology and Assessment for Learning	
ACTE 630	Current Technology for Online Instruction	
ACTE 632	Online Learning Environments	
ACTE 633	Learners in Online Classrooms	
ACTE 634	Legal and Ethical Issues in Online Education	
ACTE 635	Instructional and Curricular Design for Online, Blended and Customized Instruction	
ACTE 651	Science Curriculum and Reform	
ACTE 655	Integrative STEM Education	
ART 526	Trends Art Ed:	
ART 584	Intro Studio Art:	
COMM 610	Seminar in Organizational Comm	
CSCI 501	Coding for Educators	
ECHD 614	Advanced Curriculum in ECHD	
EDFN 520	Instructional Technology in Elem Ed	
EDFN 530	Instructional Technology, Design and Assessment	
EDLD 610	Theory and Organizatnl Behav	
EDLD 614	School Community Relations	
EDLD 620	School Law and Public Policy	
EDLD 667	Leadership Seminar 1	
EDLD 668	Leadership Seminar 2	
EDLD 669	Leadership Seminar 3	
EDTE 586	Topics in Industry & Tech	
EDTE 587	Topics in Industry & Tech	
EDTE 588	Sp Topics in Industry & Tech	
EDTE 589	Sp Topics in Industry & Tech	
EDTE 590		
EDTE 592		
EDTE 690	Integrvtve Lrning Exprntl Strgy	
EDTE 691	Independent Study	
EDUC 575	Current Trends in Education	
EDUC 580	Methods for Teaching English Language Learners	
EDUC 651	Math in the School Program	
EDUC 661	Science in the School Program	
EMGT 601	Principles & Practices of Emergency Management	
EMGT 605	Social Dimensions of Disaster	
EMGT 607	Emergency Mental Health and Trauma	
EMGT 615	Emergency Preparedness for Industry	
EMGT 619	Emergency Management Planning	
EMGT 629	Topics: (Topics: Business Continuity)	
ENTR 510	ENTR Promotions & Branding	
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GFED 670	Psychology of the Gifted	
GFED 674	Program for the Gifted	
GFED 675	Evaluating Instruct. Effectiveness: App for the Gifted	
GFED 676	Teaching Gifted Learners Instructional Strategies	

AENG 515	Adv Prob:
AENG 525	Adv Prob:
AENG 535	Adv Prob:
AENG 586	Special Topics:
AENG 587	Special Topics:
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MATH 622	21st Century Math
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SOWK 515	Social Welfare Policy
SOWK 619	Global Perspectives in SOWK
SPED 600	Introduction to Exceptional Education
SPED 601	Psyc of Stdnts w/ Disabilities
SPED 651	Advocacy and Leadership in Special Education
SPED 671	Behavior Management
WSSD 551	Coaching of Sport
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WSSD 602	Sport in American Culture
WSSD 604	Event Management
WSSD 610	Women in Sport
WSSD 615	Campus Recreation Program
WSSD 622	Sport Finance
WSSD 686-689	
WSSD 691	Ind Stdy:

## Concentration in Education

Code	Title	Hours
EDFN 601	Research Methods	3
Social Foundations - Choose 1 of the following:		3
EDFN 511	Comparative Education	
EDFN 590	Social Foundation of Educ	
EDFN 603	Philosophy of Education	
EDFN 604	Education and Public Policy	
Psychology Area - Choose 1 of the following:		3
PSYC 525	Advanced Child Psychology	
PSYC 526	Advanced Adolescent Psychology	
PSYC 625	Human Growth and Development	
EDFN 545	Advanced Educational Psychology	
Field Experience in Technology Innovation		
Students in the Education Concentration must complete a Field Experience during the duration of their program. Please consult your program coordinator for options.		
Culminating Experience in Technology Innovation		
Culminating Experiences include but are not limited to published articles, curriculum artifacts and professional presentations		
<b>Total Hours</b>		<b>9</b>