



University of Idaho

Department of Nuclear Engineering
and Industrial Management

**GRADUATE STUDENT HANDBOOK
TECHNOLOGY MANAGEMENT
ENGINEERING MANAGEMENT**

Degrees Offered

Master of Science - Technology Management (M.S.)

Master of Engineering – Engineering Management (M.Engr.)

This information supplements general information in the current University of Idaho catalog. A summary of university requirements for graduate degrees can be found at uidaho.edu and uidaho.edu/cogs.

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INTRODUCTION

This handbook describes the policies, rules, and procedures of the Technology Management (TM) and Engineering Management (EM) programs at the University of Idaho. The [College of Graduate Studies](#) website provides the rules and policies governing graduate programs and offers a multitude of resources designed to encourage a successful graduate experience.

Any waivers or revisions concerning the policies and requirements set forth in this handbook must be approved by the Nuclear Engineering and Industrial Management (NEIM) Department Chair and in some cases the College of Graduate Studies. However, it should be emphasized that the TM and EM graduate programs are flexible and can be adapted to the students' needs when appropriate.

If you have questions concerning the policies and procedures outlined in this handbook, please contact one of the people listed below.

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Technology Management

uidaho.edu/engr/departments/neim/degrees/technology-management

Engineering Management

uidaho.edu/engr/departments/neim/degrees/engineering-management

Educational Philosophy of the Programs

A graduate degree is more than additional course work. Adjusting from undergraduate to graduate work involves a transition in the way you approach your studies. Graduate education is a transition period from being a student to that of an advanced professional. It is a time for the graduate student to grow intellectually and personally, create new knowledge, learn to work independently, and gain experience in performing applied research and development. Graduate studies provide the opportunity to broaden the individual's knowledge base, to obtain a depth of understanding in a chosen field and to prepare oneself for an increasingly competitive job market. The faculty and staff value your success and are available to assist in your growth and development as technology or engineering manager and as a professional.

The faculty at the University of Idaho believe in an interdisciplinary approach to graduate education and the collaboration that it brings sets a good example for the real world in which our graduates work and grow.

Graduate Student Code of Research and Scholarly Conduct

The University of Idaho expects students to engage in academic activity with high standards of honesty and integrity. The academic enterprise is dependent upon such behavior. These values are central to the educational process and are also cornerstone values for citizenship and professional conduct after you leave the University. Graduate students are responsible for learning about appropriate standards for ethical research and scholarly conduct and for following all university policies related to ethical research and scholarly conduct.

The University of Idaho has specific academic honesty expectations described in the [Student Code of Conduct](#). These are minimum standards that are generally applied across the University. However, professors may more specifically define standards for their courses through information described in the course syllabus or other documents. You must learn the expectations of each instructor since learning environments do vary both in content and teaching style. Sometimes the issues of academic integrity are obvious but other times you may struggle with issues that appear to be less clear. Talk with your instructor if you have a concern about what is expected of you. The Code of Conduct can be found at uidaho.edu/student-affairs/dean-of-students/student-conduct/student-code-of-conduct.

Learning Outcomes

In alignment with the University of Idaho [Learning Outcomes](#), the faculty of the Technology Management and Engineering Management programs have developed outcomes for the masters students. Learning outcomes both direct and assess programs and allow for continuous improvement. As such, the outcomes and assessments can change from year to year in order to maintain a high standard of teaching and learning.

The outcomes for the programs are listed in Appendix C.

Communication

Communication is key to success as a graduate student. Communication includes VandalMail, Canvas, meeting with the Major professor or Advisor, knowing deadlines, etc.

Other Expectations

Students are expected to know and comply with U of I rules and regulations including College of Graduate Studies (CoGS), University Research Office, and their program. In addition, students are expected to make academic progress each semester. **An annual Graduate Progress Report is required for all graduate students.**

ADMISSION

Admission to the [College of Graduate Studies](#) (CoGS) is open to any student who holds a baccalaureate degree and who presents a scholastic record indicating probable success in graduate work. The [General Catalog](#) and Graduate Admission website lists the University's GPA admission requirements.

Admission to the Programs

Admission to the **Technology Management** master's degree is open to any student who is admissible to the College of Graduate Studies and who holds a bachelor's degree in a technical field or a bachelor's degree and 3 years of experience in a technology related work environment.

The Technology Management degree offers both a thesis and non-thesis option. Each is listed as M.S. Students need to specify thesis or non-thesis during the application process. After admission, students work with their advisor to determine which is the best fit for the students' goals and changes can be made by the student to their option early in the program if necessary.

Admission to the **Engineering Management** master's degree is open to any student who is admissible to the College of Graduate Studies and who has a bachelor's degree from an ABET accredited engineering, engineering technology, or computer sciences program or equivalent accreditation in the country from where the student received their bachelor's degree, or a bachelor's degree in industrial technology, physical sciences (physics, chemistry, environmental science etc.) or related fields with a mathematical background equivalent to at least one semester of calculus. The admission eligibility requirements are in compliance with the standards of American Society for Engineering Management (ASEM).

The Engineering Management degree offers a non-thesis degree with two options, a capstone exam or a master's project.

International Student Admission

Much of the core coursework and many of the electives are delivered by distance education methods (i.e., web based) only. Due to the delivery methods of the courses, it is difficult or not possible for international students to meet the enrollment requirements of a student visa. International students may be admitted to the degree program if they will be completing the coursework from their home country and will not be seeking a student visa to the United States.

Proof of English Proficiency (TOEFL)

For [Graduate Admission](#) purposes, all students must meet Academic and Language Requirements.

A waiver for this requirement is automatically granted to applicants whose education is from countries where English is the official/native language. The most common and widely accepted test is the TOEFL

[\(Test of English as a Foreign Language\)](#). More information is available on the Graduate Admissions website.

NON-THESIS DEGREE REQUIREMENTS & PROCEDURES

M.S. Technology Management

Thirty credits are required for the M.S. (non-thesis) in Technology Management. Students who take an exam for the exit/capstone requirement need to earn 31 credits.

- At least 18 credits must be at the 500 level.
- Up to 12 credits may be at the 400 level.
- An overall GPA of 3.0 is required for graduation. Each semester, students must earn at least a 3.0 GPA to remain in good standing.
- For further details, review College of Graduate Studies requirements.

Details on the master's study plan including age of credits and transfer credits can be found on the College of Graduate Studies website under Steps to Degree, Masters Study Plan and Degree Audit at uidaho.edu/cogs and in the catalog.

Program

Students interested in the program are encouraged to contact an advisor in advance of the first registration for a tentative evaluation of educational preparation. Deficiencies in undergraduate course preparation for the graduate program will be identified.

Major Professor

The student, advisor, and potential Major Professor should discuss and formalize the nomination of the Major Professor **before the student has completed three classes**. The nominated Major Professor, in conjunction with the student, must submit the [Appointment of Major Professor and/or Committee Form](#) to the [College of Graduate Studies](#).

Committee

A supervisory committee is not required.

Study Plan

The Study Plan should be prepared **by the time three classes are completed**. The Major Professor, NEIM Chair, and College of Graduate Studies approve the study plan submitted by the student through myUI. The Major Professor needs to be posted on the student's profile on myUI before the plan can be approved. Students are encouraged to create a draft prior to this and consult with Major Professor/Advisor. See Curriculum Guide in Appendix D for course information.

Exit Requirement

A capstone that demonstrates mastery and application of the subject matter must be completed. Students should meet with their Major Professor to discuss options for the capstone. A paper submitted for publication, an exam, research project and other scholarly activities may be considered for this requirement. Passing the Certified Technical Manager (CTM) exam conducted by ATMAE or a well-recognized exam like Project Management Professional (PMP) exam can be considered for the exam. Students are encouraged, but not required, to do a presentation to faculty and other students that

shows the work completed and conclusions. After the capstone is completed, the non-thesis report form is completed by the Major Professor and submitted to the College of Graduate Studies.

Application to Graduate

Students apply to graduate through myUI. See Registrar's calendar and university catalog for dates and other details at uidaho.edu/registrar.

Information

Further information on university and general regulations may be obtained from the University of Idaho [College Of Graduate Studies](#) and the [Office of the Registrar](#).

THESIS DEGREE REQUIREMENTS & PROCEDURES

M.S. Technology Management

Thirty credits are required for the M.S. (thesis) degree in Technology Management.

- At least 18 credits must be at the 500 level.
- Up to 12 credits may be at the 400 level.
- An overall GPA of 3.0 is required for graduation. Each semester, students must earn at least a 3.0 GPA to remain in good standing.
- For further details, review College of Graduate Studies requirements.

Details on the master's study plan including age of credits and transfer credits can be found on the College of Graduate Studies website under Steps to Degree, Masters Study Plan and Degree Audit at uidaho.edu/cogs and in the catalog.

Program

Students interested in the program are encouraged to contact an advisor in advance of the first registration for a tentative evaluation of educational preparation. Deficiencies in undergraduate course preparation for the graduate program will be identified.

Major Professor

The student, advisor and potential Major Professor should discuss and formalize the nomination of the Major Professor **before the student has completed three classes**. The nominated Major Professor in conjunction with the student must submit the [Appointment of Major Professor and/or Committee Form](#) to the [College of Graduate Studies](#).

Committee

The Committee is discussed by the student and the Major Professor in consultation with the Program Lead. The committee must include:

- ✓ Major Professor (serves as chair of the committee)
- ✓ One member from NEIM
- ✓ One member from another department, university or from NEIM

The Chair is a U of I Graduate Faculty. At least one other member is required to be U of I graduate faculty. A member from another institution may be approved if graduate faculty at that institution and if the department determines that he or she is appropriate for the student's committee. At least fifty percent (50%) of the committee members must be members of the U of I graduate faculty. See the CoGS website for more details.

Study Plan

The Study Plan should be prepared **by the time three classes are completed**. The major professor, NEIM Chair and College of Graduate Studies approve the study plan submitted by the student through myUI. The Major Professor needs to be posted on the student's profile on myUI before the plan can be approved. Students are encouraged to create a draft prior to this. See Curriculum Guide in Appendix D for course information.

Thesis Proposal Meeting

The meeting includes an oral presentation of a written thesis proposal and/or progress report to the committee. Committee members will sign and date the front page of the proposal, indicating acceptance. The proposal at a minimum need to address research objectives, timeline and issues and challenges. Any waiver to the need for a proposal meeting must be approved by the NEIM chair.

The proposal meeting is not open to the public.

Application to Graduate

Students apply to graduate through myUI. See Registrar's calendar and university catalog for dates and other details at uidaho.edu/registrar.

Request to Proceed with Final Defense

After detailed consultations with the Major Professor, the student provides each committee member with a copy of the thesis that will be defended. It is recommended that the committee be given three-four weeks to review the thesis.

The student schedules the defense meeting with the committee members and then collects each member's signature on the Request to Proceed with Final Defense Form. The student submits the signed form to the College of Graduate Studies at least one business day prior to the defense meeting. It is recommended that the form be in the College of Graduate Studies Dean's Office at least one week prior to the defense date. A formatting check of the thesis needs to be completed through the CoGS Electronic Thesis and Dissertation (ETD) system at least once before the defense. The entire committee is required to participate in the thesis defense. Refer to the College of Graduate Studies website for deadlines and other information.

Thesis Defense

The defense consists of 20-30 minutes of presentation with professional scholarly slides in a public setting. After the candidate's presentation, the audience members can ask the candidate questions. Following that, the major professor will facilitate questioning of the candidate by the committee in a closed session to determine the outcome of the defense. Upon completion of the deliberation, the candidate will meet with their committee in a private session to learn the committee's decisions on

further research or edits needed. If the defense is not acceptable to the majority of the committee, a new defense is scheduled by the student after the changes are made.

It is imperative that students follow the CoGS guidelines and instructions set forth for Thesis Defense. The student who is defending the thesis arranges for a videoconference connection that includes all members on the student's committee. The student provides an abstract, copy of the thesis, date/time/location of the defense to the NEIM Chair no later than 10 business days before the defense. The NEIM Chair or their representative will provide this to the faculty, students, and other audience members. Any exceptions to these requirements need to be approved by the NEIM Chair.

Further information on university and general regulations, including required forms and Graduate Handbook for Theses and Dissertations, is available from the University of Idaho, College of Graduate Studies, and the Registrar.

Pre-Defense Formatting Check and Submission of Final Thesis

Complete instructions for formatting and submission can be found in the [Thesis and Dissertation Handbook](#). Students are required to submit the thesis for a formatting check prior to the defense. It is important to follow the instructions to the letter. Electronic Thesis Submission rules can be found on the CoGS website.

Failure to submit in the correct format or by the deadlines may result in the need to register again and pay for additional credits.

NON-THESIS DEGREE REQUIREMENTS & PROCEDURES

M.Engr. Engineering Management

Thirty credits are required for the M.S. (non-thesis) in Engineering Management. Students who take the exam option need to earn 31 credits.

- At least 18 credits must be at the 500 level.
- Up to 12 credits may be at the 400 level.
- An overall GPA of 3.0 is required for graduation. Each semester, students must earn at least a 3.0 GPA to remain in good standing.
- For further details, review College of Graduate Studies requirements.

Details on the master's study plan including age of credits and transfer credits can be found on the College of Graduate Studies website under Steps to Degree, Masters Study Plan and Degree Audit at uidaho.edu/cogs and in the catalog.

Program

Students interested in the program are encouraged to contact an advisor in advance of the first registration for a tentative evaluation of educational preparation. Deficiencies in undergraduate course preparation for the graduate program will be identified.

Major Professor

The student, advisor, and potential Major Professor should discuss and formalize the nomination of the Major Professor **before the student has completed three classes**. The nominated Major Professor, in conjunction with the student, must submit the [Appointment of Major Professor and/or Committee Form](#) to the [College of Graduate Studies](#).

Committee

A supervisory committee is not required.

Study Plan

The Study Plan should be prepared **by the time three classes are completed**. The Major Professor, NEIM chair, and College of Graduate Studies approve the study plan submitted by the student through myUI. The Major Professor needs to be posted on the student's profile on myUI before the plan can be approved. Students are encouraged to create a draft prior to this. See Curriculum Guide in Appendix E for course information.

Exit Requirement

A Capstone that demonstrates mastery and application of the subject matter must be completed. Students should meet with their Major Professor to discuss options for the capstone. The options for completing the exit requirement are detailed in the Curriculum Guide in Appendix E. After the capstone is completed, the non-thesis report form is completed by the Major Professor and submitted to the College of Graduate Studies.

Application to Graduate

Students apply to graduate through myUI. See Registrar's calendar and university catalog for dates and other details at uidaho.edu/registrar.

Information

Further information on university and general regulations may be obtained from the University of Idaho [College Of Graduate Studies](#) and the [Office of the Registrar](#).

GRADUATE ACADEMIC CERTIFICATES

University of Idaho offers graduate level academic certificates that can be added to, or completed in conjunction with, a master's degree. Students in the TM program are encouraged to review the requirements for the Nuclear Criticality Safety, Nuclear Technology Management, Emergency Planning and Management, and Critical Infrastructure Resilience. Note that the TM master's program when coupled with Nuclear Technology Management graduate certificate is endorsed by the International Atomic Energy Agency (IAEA). Course information regarding different academic certificates is listed in Appendix F. Details on the regulations for certificates, as well as other certificate options, are available in the general catalog, located on the Registrar's Office website.

APPENDIX A CORE GRADUATE FACULTY

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Amin Mirkouei, Ph.D., P.E.

Engineering Technology, Mechanical Engineering, Biological Engineering, Environmental Science, Nuclear Engineering, Engineering Management, Technology Management

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Specializations: Sustainable design and manufacturing, operations research, energy systems modeling, life cycle assessment, real-time data analytics, bioenergy production processes, advanced & smart manufacturing logistics and supply chain planning, project management, network optimization & cyber-physical systems

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Engineering Management Director, Technology Management, Engineering Technology

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Specializations: industrial and systems engineering, engineering economic and decision modeling, workplace safety management

Alex Vakanski, Ph.D., P.E.

Engineering Technology, Mechanical Engineering, Computer Science, Engineering Management, Technology Management, Nuclear Engineering

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Specializations: Robotics, learning from demonstration, vision-based control, machines learning and artificial intelligence, image processing and computer vision

APPENDIX B

FORMS, HANDBOOKS AND LINKS

Admissions – Graduate	uidaho.edu/graduate-studies/admissions
Canvas	canvas.uidaho.edu
College of Graduate Studies - CoGS	uidaho.edu/graduate-studies
Dates and Deadlines – Registrar’s	uidaho.edu/registrar
Engineering Outreach - EO	uidaho.edu/engineering/engineering-outreach
General Catalog	uidaho.edu/registrar
Graduate Forms, Guides & Handbooks	uidaho.edu/graduate-studies
Student Portal - myUI	my.uidaho.edu
Vandal Accounts	vandalsetup.uidaho.edu

APPENDIX C

LEARNING OUTCOMES

Technology Management

- Use data-driven management and leadership capabilities to solve problems in a complex technical environment.
- Through independent learning and collaborative study, attain and use knowledge in finance, statistics, technology, and business to enable business performance improvement across multiple functional areas of an organization.
- Integrate technical and business knowledge, organization insights and communication skills to become a proficient technical manager and leader of projects, operations, organizations and people.

Engineering Management

- Students will have demonstrated their ability to use process improvement approaches to improve operational excellence.
- Students will have demonstrated their mastery of Engineering Management through successfully passing EM 5990 or EM 5960.
- Students will have demonstrated that they understand the functions of engineering management including planning, organization, leading and controlling.

APPENDIX D

TECHNOLOGY MANAGEMENT CURRICULUM GUIDE

Non-Thesis Credits	Thesis Credits	Requirement
3	3	ACCT 5820 Enterprise Accounting or TM/EM 504 Advanced Engineering Economic Analysis
3	3	TM 5100 Engineering and Technology Management Fundamentals
3	3	TM 5200 Leadership and Conflict Resolution in a Technological Environment
3	3	<ul style="list-style-type: none"> ○ STAT 4190 Intro to SAS/R Programming ○ STAT 4220 Survey Sampling Methods ○ STAT 4310 Statistical Analysis ○ Other 4000 or 5000 level Statistics course approved by Major Professor and NEIM department chair
3	3	<ul style="list-style-type: none"> ○ INDT 4480 Project and Program Management ○ EM 5600 Project Risk Management ○ EM 5800 Technical Project Management ○ 4000 or 5000 level Project Management or Process Improvement course approved by Major Professor and NEIM department chair
12	9	Focus area electives
3*	6	Research – Non-thesis option <ul style="list-style-type: none"> ○ TM 5990 Non-thesis Master’s Research *Students who opt to take the CTM exam instead of the non-thesis project enroll in 1 credit of TM 596 Capstone integration and an additional focus area elective bringing the total required credits to 31. Research – Thesis Option <ul style="list-style-type: none"> ○ TM 5000 Master Research and Thesis

Focus Area Electives

The TM degree offers students the flexibility of selecting courses in a focus area that fits their career and academic goals. Focus areas that fit well within TM are listed below with suggested courses within each. **This is not a comprehensive list of courses or focus areas. Students, in agreement with the Major Professor and NEIM Chair, can customize or develop a focus area and select other courses including courses within the academic certificates.**

CRITICAL INFRASTRUCTURE RESILIENCE AND CYBERSECURITY

Students interested in the Critical Infrastructure Resilience certificate are encouraged to review Appendix F for courses within the certificate. It may be possible to use credits for a certificate and the master's degree.

- CYB 5200 Digital Forensics
- CYB 5360 Advanced Information Assurance Concepts
- CYB 5400 Advanced Networking and Security
- ECE 5440 Supervisory Control and Critical Infrastructure Systems
- INDT 4700 Homeland Security

EMERGENCY PLANNING AND MANAGEMENT

Students interested in the Emergency Planning and Management certificate are encouraged to review Appendix F for courses within the certificate. It may be possible to use credits for a certificate and the master's degree.

- INDT 4700 Homeland Security
- INDT 4720 National Incident Management Systems
- TM 5170 Critical Infrastructure Security and Resilience Fundamentals
- TM 5250 Emergency Management and Planning
- TM 5260 Community Emergency Planning
- TM 5280 Accident Investigation
- TM 5290 Risk Assessment
- TM 5330 Chemical Hazards
- TM 5340 Biological Hazards

INDUSTRIAL SAFETY AND HUMAN PERFORMANCE

- ENV5 5790 Intro to Environmental Regulations
- INDT 4620 Industrial Safety
- NE 5130 Nuclear Security Science
- PSYC 5610 Human-Computer Interaction
- PSYC 5620 Advanced Human Factors
- TM 5140 Nuclear Safety
- TM 5160 Nuclear Rules and Regulations
- TM 5190 Industrial Sustainability Analysis
- TM 5170 Critical Infrastructure Security and Resilience Fundamentals
- TM 5280 Accident Investigation
- TM 5290 Risk Assessment
- TM 5330 Chemical Hazards
- TM 5340 Biological Hazards
- TM 5350 Radiation Detection and Shielding

- TM 5520 Industrial Ergonomics

PROJECT MANAGEMENT

- BLAW 4200 Commercial Law
- BUS 5510 Managing Scientific Projects
- BUS 5520 Management of Scientific Innovation
- EM 5600 Project Risk Management
- EM 5800 Technical Project Management
- EM 5820 Advanced Topics in Project Management
- ENGL 5220 Communication for Science Professionals
- ENVS 515 Environmental Lifecycle Assessment
- ENVS 536 Principles of Sustainability
- INDT 4480 Project and Program Management
- OM 4560 Enterprise Quality Management
- ORGS 5500 Organizational Systems and Projects

PROCESS IMPROVEMENT AND INNOVATION

- BUS 552 Management of Scientific Innovation
- EM 5700 Global Product Development
- ENVS 536 Principles of Sustainability
- INDT 4440 Quality Assurance Organization and Management
- INDT 4640 Human Performance Fundamentals
- OM 4560 Enterprise Quality Management
- PSYC 4460 Engineering Psychology
- PSYC 5500 Organizational Systems and Projects
- TM 5190 Industrial Sustainability Analysis
- TM 5290 Risk Assessment

APPENDIX E

ENGINEERING MANAGEMENT CURRICULUM GUIDE

Credits	Requirement
3	ACCT 5820 Enterprise Accounting [♦]
3	EM 5100 Engineering and Technology Management Fundamentals
3	EM 5130 Leading Technical Organizations
3	<ul style="list-style-type: none"> ○ STAT 4070/5070 Experimental Design ○ STAT 4220 Survey Sampling Methods ○ STAT 4310 Statistical Analysis ○ STAT 4520/5520 Mathematical Statistics ○ Other 4000 or 5000 level Statistics course approved by Major Professor and NEIM department chair
3	<ul style="list-style-type: none"> ○ INDT 4480 Project and Program Management ○ EM 5600 Project Risk Management ○ EM 5800 Technical Project Management ○ ME 5040 Operational Excellence 4000 or 5000 level Project Management or Process Improvement course approved by Major Professor and NEIM department chair
6	Quantitative Analysis Electives <ul style="list-style-type: none"> ○ 5000 level science, technology, engineering, or mathematics (STEM) courses with a focus on quantitative content that is relevant to the student's undergraduate background or career field.
9*	Engineering Management Electives <ul style="list-style-type: none"> ○ 5000 level courses with a focus on the design, improvement, installation, and management of integrated technical systems that consist of people, materials, information, equipment, and energy.
Exit Requirement	<ul style="list-style-type: none"> ○ *Option 1: Three credits of EM 5990 Master's non-thesis research. Students who take this option use the EM 5990 as one of the qualitative electives. Degree total: 30 credits ○ Option 2: One credit of EM 5960 Capstone Integration Degree total: 31 credits

[♦] The course requirement is in transition and will be substituted by Advanced Engineering Economic Analysis course.

APPENDIX F

GRADUATE ACADEMIC CERTIFICATES

A grade of B or higher is required in all coursework for academic certificates. Courses at the 3000 level cannot be used for master's degrees. Some courses may have a 5000-level option. Graduate students are encouraged to take the 5000-level option when possible. Review the information in the general catalog (O-10-b) for other regulations.

Critical Infrastructure Resilience Certificate

- TM 5170 Critical Infrastructure Security and Resilience Fundamentals
- Select 6 credits of electives from the following:
 - CS/CYB 5360 Advanced Information Assurance Concepts
 - ECE 4690/5690 Resilient Control of Critical Infrastructure
 - INDT 4700 Homeland Security
 - INDT 4720 National Incident Management Systems
 - NE/TM 5290 Risk Assessment
 - NE/TM 5160 Nuclear Rules and Regulations
- Select 3 credits of electives from the following:
 - CHE 4450/ECE 4770 Digital Process Control
 - CS 4502/5502 Real-Time Operating Systems
 - ECE 3400 Microcontrollers
 - ECE 4430 Distributed Processing and Control Networks
 - ECE 4440/5440 Supervisory Control and Critical Infrastructure Systems
 - ECE 4700/ME 4810 Control Systems
 - INDT 3330 Industrial Electronics and Control Systems
 - NE/TM 5140 Nuclear Safety
- Select 3 credits of electives from the following:
 - CS 4380/5380 Network Security
 - CS 4390/5390 Applied Security Concepts
 - CYB 4200/5200 Digital Forensics

Total Hours 15

Emergency Planning and Management Certificate

- INDT 4720 National Incident Management Systems
- TM 5250 Emergency Management and Planning
- TM 5260 Community Emergency Planning
- Select two courses from the following:
 - INDT 4700 Homeland Security
 - TM 5330 Chemical Hazards
 - TM 5340 Biological Hazards

Total Credits: 15

Nuclear Criticality Safety Certificate

- TM 5120 Foundations of Nuclear Science OR NE 4500 Principles of Nuclear Engineering
- TM 5130 Nuclear Criticality Safety
- TM 5140 Nuclear Safety
- TM 5160 Nuclear Rules and Regulations

Total Credits: 12

Nuclear Technology Management Certificate

Students in this certificate must also be in a master's program in TM. This certificate is endorsed by the International Atomic Energy Agency (IAEA). Students who complete the certificate and the degree may be eligible for an additional certificate from the IAEA.

- INDT 4340 Power Generation and Distribution
- NE 5207/TM 5370 Nuclear Material Storage, Transportation and Disposal
- NE 5280/TM 5380 Management of Nuclear Facilities
- NE 5140/TM 5140 Nuclear Safety
- NE 5160/TM 5160 Nuclear Rules and Regulations
- NE 4500 Principles of Nuclear Engineering

Total Hours 18

APPENDIX G

MS Technology Management and M.Engr Engineering Management Non-Thesis Project Evaluation Form

Student

Date

Evaluator

Evaluator instructions: Please complete the **Project Evaluation Rubric** below. The communication section refers to either written reports or oral presentations.

Project Evaluation Rubric <i>(check one box in each row)</i>			4 Excellent	3 Good	2 Satisfactory	1 Needs Improvement
CONTENT	Research	Historical and modern approaches to problems found and considered.				
	Methods	Analyzes Technology/Management principles.				
	Results and/or Deliverables	Delivered solutions, analysis, and/or deliverables.				
DELIVERY	Organization	Logically ordered for intended purpose with effective transitions between tops, sections, and chapters.				
	Visual Aids	Graphics and/or figures as tools for communicating project concepts.				
	Style	Language and style convey meaning to an audience.				

APPENDIX H

MS Technology Management Thesis Defense Presentation Evaluation Form

Student

Date

Evaluator

Evaluator instructions: Please complete the **Defense Presentation Evaluation Rubric** below and the **Thesis Evaluation Rubric** on the following page.

Project Evaluation Rubric <i>(check one box in each row)</i>			4 Excellent	3 Good	2 Satisfactory	1 Needs Improvement
CONTENT	Research	Historical and modern approaches to problems found and considered.				
	Methods	Analyzes Technology/Management principles.				
	Results and/or Deliverables	Delivered solutions, analysis, and/or deliverables.				
DELIVERY	Organization	Logically ordered for intended purpose with effective transitions between tops, sections, and chapters.				
	Visual Aids	Graphics and/or figures as tools for communicating project concepts.				
	Style	Language and style convey meaning to an audience.				

Thesis Evaluation Rubric
(check one box in each row)

		4 Excellent	3 Good	2 Satisfactory	1 Needs Improvement
CONTENT	Originality	Original treatment of, or new perspective on, the topic.			
	Research Approach	Research approach builds on previously published work, combining effective methods with the novel and/or modern approaches.			
	Results	Data collection and assessment results are clear and logical, supporting the goals of the thesis.			
	Scholarship	Content reviews and builds on appropriate prior work.			
	Relevance	The thesis conveys the significance of its contribution.			
FOCUS	Goals	The goals are developed and explicitly stated.			
	Order	The order in which ideas are presented is clear, logical, and effective.			
	Conclusions	The conclusions are supported by the data.			
LANGUAGE	Style	The thesis is clear, concise, consistent, and is easy to read and understand.			
	Mechanics	The writing is absent of grammar and/or spelling errors.			