

Department of Technology Systems

Graduate Program Guide

Master of Science in Information and Cybersecurity Technology
Master of Science in Technology Management
Master of Science in Occupational Safety
Ph.D. in Technology Management (Consortium)
Graduate Certificates

East Carolina University

Department of Technology Systems

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NOTE: This document is a general departmental guide designed to assist graduate students in completing their certificate and degree requirements. Although the faculty are available for assistance, graduate students are responsible for knowing what is required of them and for their timely progress through their academic program. Graduate students are encouraged to read and become familiar with the ECU Graduate Catalog and the Graduate School's website at <https://gradschool.ecu.edu/>. This document is not intended to replace the Graduate Catalog and other official ECU documents. In the event of a conflict between statements contained in this handbook - University policies and procedures shall prevail.

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1. THE EAST CAROLINA CREED



The East Carolina Creed

In the pursuit of educational excellence, responsible stewardship, and intellectual freedom, the community of scholars at East Carolina University is committed to learning at the highest level. Founded in the tradition of service and leadership, members of our academic society exemplify high standards of professional and personal conduct at all times.

As an East Carolinian...

I will carry out personal and academic integrity.

I will respect and appreciate the diversity of our people, ideas, and opinions.

I will be thoughtful and responsible in my words and actions.

I will engage in purposeful citizenship by serving as a positive role model.

Adherence to these moral principles is the obligation of every East Carolinian on and off campus. In doing so, our individual freedom to learn and a pledge to serve will be preserved.

2. DEPARTMENT CHAIR'S WELCOME MESSAGE

Welcome to the Department of Technology Systems at East Carolina University. We are excited that you have chosen to continue your graduate education here at ECU. Rest assured, that we will work with you every step of the way to achieve your academic goals. We hope that you find this Handbook helpful in guiding you through the processes need to successfully complete your degree or certificate program.

The staff, and faculty of the Department are available to address your questions and concerns. Please feel comfortable in seeking assistance or advice as needed. We are here to help you advance your technology careers, learn new skills, and foster scholarship in our profession.

My best wishes for your continued success.

Dr. Tijjani (TJ) Mohammed
Department Chair

3. DEPARTMENT CONTACT INFORMATION

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MS in Occupational Safety (MSOS) Dr. Dylan Hardison hardisond18@ecu.edu (252) 328-9716	Ph.D. in Technology Management Dr. Tijjani (TJ) Mohammed mohammedt@ecu.edu (252) 328-9640
MSICT Concentration Coordinators & MSTM Focus Area (FA) Coordinators	
MSICT – Critical Infrastructure Dr. Erol Ozan ozang@ecu.edu (252) 328-9667	MSICT - Network Technology Management Dr. John Pickard pickardj@ecu.edu (252) 328-9646
MSICT - Cybersecurity Dr. Peng Li lipeng@ecu.edu (252) 328-9669	MSTM - Quality (FA) Dr. Merwan Mehta mehtam@ecu.edu (252) 328-9721
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4. DEPARTMENT FACULTY & GRADUATE APPOINTMENTS

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Dr. Jimmy Linn	linnj@ecu.edu	252-737-1038	SZ214	Graduate Faculty
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Dr. Ciprian Popoviciu	Popoviciucc18@ecu.edu	252-737-4973	C116	Associate Graduate Faculty
Dr. Sharon Rouse	rouses17@ecu.edu	252-737-1265	SZ208	Graduate Faculty
Dr. Page Varnell	varnellk18@ecu.edu	252-737-5228	C121	Associate Graduate Faculty
Dr. Biwu Yang	yangb@ecu.edu	252-328-9690	Slay 106	Graduate Faculty

5. HELPFUL LINKS FOR GRADUATE STUDENTS

ECU – Home Page

<http://www.ecu.edu/>

Department of Technology Systems – Home Page

<https://cet.ecu.edu/techsystems/>

Department of Technology Systems –Thesis and Practicum Forms

<https://cet.ecu.edu/techsystems/graduate-programs/graduate-program-forms/>

ECU – Graduate School

<https://gradschool.ecu.edu/>

East Carolina University – Catalog

<http://catalog.ecu.edu/>

ECU – Academic Calendars

<http://www.ecu.edu/cs-acad/fsonline/senate/fscalend.cfm?RenderForPrint=1%27A=0>

ECU – Center for Counseling and Student Development

<https://counselingcenter.ecu.edu/>

ECU – Writing Center

<https://writing.ecu.edu/uwc/>

ECU – Information Technology & Computing Services (ITCS)

<https://itcs.ecu.edu/>

ECU – Financial Aid

<https://financialaid.ecu.edu/>

East Carolina University – Identification

<https://1card.ecu.edu/>

6. DEPARTMENT OF TECHNOLOGY SYSTEMS

The Department of Technology Systems is a national leader in offering graduate, technology related degrees online. As a result, students can be advised, complete courses, collaborate on projects, conduct research, and complete the degree via the Internet. Students typically spend 10-15 hours per week in preparing for and participating in each course. Most of the students in the program are working professionals who are pursuing the degree for career advancement. Average completion time for our master's programs is approximately 24 months assuming two courses are taken per semester. Courses are scheduled in a sequence over the fall, spring, and summer semesters to allow program entry in any semester.

6.1. Mission Statement

The Department of Technology Systems supports the mission of the College of Engineering and Technology and East Carolina University by creating a strong workforce for North Carolina, by preparing technologically competent graduates, and by supporting a globally competitive broad-based economy for North Carolina's future through the application of technology in research and industry outreach

6.2. Vision

The Department of Technology Systems aspires to a global leadership role in education by developing and delivering creative and responsive degree programs and by developing leading edge applied research capabilities.

6.3. Value Statement

The Department of Technology Systems promotes high standards in all aspects of academic, research, and service activities. Our values mirror ECU's core values and we remain committed to their implementation and maintenance.

- **Respect:** We respect ourselves, others, and our differences. This value is at the heart of our community.
- **Authenticity:** We promote honesty and integrity, and we complete the objectives that we proclaim as our own.
- **Accountability:** We are committed to achieving our mission and providing a high-quality education for our students in Technology Systems. We ensure that our curricula are relevant and promote the skills required for students to compete globally and meet government and industry needs.
- **Teamwork:** We are one university, one college, and one department. We promote collaboration between the programs in the department, college, and university, and we seek to exploit our natural synergies.
- **Commitment to Service:** We remain committed to serving our students, state, and region. We recognize potential, actively pursue opportunity, and seek to achieve positive transformation in our environment.

6.4. Graduate Programs

The Department of Technology Systems offers graduate programs leading to a Graduate Certificate, a Master of Science, and a consortium-based Doctor of Philosophy (PhD). The Department is a leading proponent of collaborative network-based learning and offers many of its graduate programs online. Graduate students are expected to be proficient in use of a personal computer and have access to high-speed internet service. The department offers the following graduate degrees and certificate programs.

Master of Science (MS) in Technology Management. The Master of Science in Technology Management is designed to serve the needs of students who possess a baccalaureate degree in industrial technology, technology management, applied engineering, engineering technology and degrees from other similar technology-oriented disciplines. The emphasis of the program is on application to practice, and creative problem-solving in technology driven industry and business. Students may select one of three options to complete the MSTM degree: non-thesis option, practicum option or thesis option. Students can structure the degree based on personal interest in:

- Manufacturing Systems
- Quality Systems, or
- Industrial Distribution and Logistics.

Master of Science (MS) in Information and Cybersecurity Technology with areas of in:

- Network Technology Management
- Critical Infrastructure
- Cybersecurity

Master of Science (MS) in Occupational Safety. The MS in occupational safety builds upon expertise in foundational regulatory and technical aspects of occupational safety and is a standalone degree program.

Graduate certificates offered through the Department include:

- Network Management Professional
- Cybersecurity Professional
- Lean Six-Sigma Black-Belt (LSSBB)

Doctor of Philosophy (PhD) in Technology Management. The Doctor of Philosophy in Technology Management program is designed to prepare students for positions of leadership in the public and private sectors of society. At the conclusion of the program, graduates will have developed skills in research procedures, will have acquired expertise in instructional processes, and will be able to provide service to the industrial and educational community. The major areas of specialization include:

- Construction Management
- Digital Communications
- Human Resource Development (HRD) and Industrial Training
- Manufacturing Systems
- Quality Systems

The program maintains most of the traditional requirement's characteristic of advanced graduate study but is unique in using the resources of a consortium of four universities linked together by alternative communication systems. Consortium Institutions include Bowling Green State University; University of Central Missouri; East Carolina University; and Indiana State University. These member universities have programs staffed by faculty having expertise in many areas of technology. Additionally, laboratories with specialized equipment are available that provide opportunities for research and study. Each university brings to the consortium a unique philosophical quality and extensive library holdings that add depth and quality to the program. More information about this PhD program can be found at:

<https://indianastate.edu/academics/academic-program-finder/technology-management-phd-online>

7. GENERAL GRADUATE INFORMATION

7.1. Graduate Program Admission Overview

Applicants must meet the admission requirements of the Graduate School. Acceptance into a master's degree program in the Department of Technology Systems is based on satisfactory undergraduate grades and letters of reference. Completion of an undergraduate degree in a field related to the desired concentration or significant related technical experience are required for admission. The following represents the minimum standards for regular admission into the ECU Graduate School as a degree seeking student. Specific programs in the Department may have established higher or additional academic standards for their program(s); these additional requirements are highlighted in each graduate program's section where applicable. To qualify for regular admission to a degree program, an applicant must:

- 1) Hold a baccalaureate degree from a regionally accredited institution or from an approved foreign college/university. International Students must have their transcript evaluated by an outside accrediting board designated by ECU's Graduate School
- 2) Have a minimum overall GPA of 2.7 based on a 4.0 scale or a minimum graduate GPA of 3.0 in a completed graduate degree program.

Students with limited technical expertise or a non-related baccalaureate degree are evaluated on a case-by-case basis by each program. In some cases, remedial undergraduate courses or additional graduate courses may be required to complement the graduate program. For more information on graduate admissions, students should go to: <https://gradschool.ecu.edu/admissions/>

7.2. Graduation

The student is eligible to graduate when all credits and requirements for their respective program have been fulfilled. Students apply to graduate through Banner Self Service one semester prior to the semester of graduation. Prior to graduation, each student should verify that Degree Works lists the appropriate department, degree program, and any appropriate concentrations. Missing information must be corrected at least one semester prior to graduation.

Enrollment is required for the semester of graduation unless graduation occurs during one of the summer terms. The student must fill out an "Application for Graduation" form from the Registrar's Office no later than the beginning of the semester of graduation. The completed form should be taken to the Cashier's Office, where a diploma fee must be paid, and then returned to the Registrar's Office. Prior to the completion of the form, the student should meet with their Graduate Faculty Advisor to ensure that all requirements for graduation will be met by the end of the semester.

7.3. Proctors for Distance Education & Online Learning

The Department of Technology Systems strives to provide education that is state of the art – in theory, application, and technology. This often includes implementing tools that allow for online assignments and assessment mechanisms. All students are expected to abide by the ECU Student Code of Conduct and

additionally there are some academic activities when a proctor may be required. ECU recommends the use of proctors for examinations in the distance education or online modalities. To ensure the integrity of exams and other academic activities, this is also true for on-campus students who are completing tests online and on-campus tests in classrooms. It is the responsibility of this Department to:

- 1) Ensure that all students are aware of the proctoring policies of the UNC system by including this statement in student handbooks.
- 2) Ensure that faculty members are educated on the UNC policies and procedures.
- 3) Encourage faculty that wish to use the UNC proctoring system to ensure students are notified of the procedures in the syllabus.
- 4) Encourage faculty to utilize an electronic learning management system (e.g., Blackboard, Moodle) course site and include the information on the UNC proctoring system and course-specific specifications about proctoring.
- 5) Encourage faculty members to consider the complexities of proctoring when designing the syllabus to ensure that students have ample time to arrange for and complete the course activity.
- 6) Require all students to sign an Academic Integrity Pledge to demonstrate a commitment to academic honesty and completing work individually.
- 7) Request feedback from students routinely about the use of the UNC proctoring system via course evaluations and other feedback mechanisms.
- 8) Ensure that students are aware they may submit concerns regarding the use of the UNC proctoring system to the course instructor, or the Department Chair at any time. ECU Testing Center and proctoring resources can be found at: <https://testingcenter.ecu.edu/>

NOTE: Each instructor of record may decide if they do or do not want to use proctors for a given assessment.

7.4. Email Communication

Upon enrollment at ECU, all students are given an ECU email account. The primary method of communication among faculty, departmental staff, and students is email. Most of the important information emanating from the department and the university will come via email, particularly related to departmental activities and events, courses, academic requirements and paperwork, funding opportunities, job openings, and if they have a graduate assistantship (GA), from their faculty supervisors. Therefore, it is imperative that graduate students check their ECU e-mail account regularly, at least twice daily is recommended. Information about how to use the email system is available both through the IT help desk and at <http://www.ecu.edu/email>.

7.5. Graduate Faculty Advisors

Upon admission to a graduate program of study in the Department of Technology Systems, each graduate student will be notified as to who their Graduate Faculty Advisor (GFA) will be for their program of study. The graduate student's program, concentration, or certificate coordinator will serve as the student's GFA unless otherwise designated by the Program Coordinator. GFA's are all members of the ECU Graduate Faculty and are available to assist the student in completing their respective degree or certificate programs. For students taking the thesis or practicum options, the GFA will advise the student through the thesis/practicum process.

to include assisting the student in identifying an appropriate thesis/practicum chair. Generally, this advisory process involves:

- An initial online or face-to-face conference with the GFA to review and sign off on the student's Plan of Study for their specific program; the student should initiate this conference.
- Contact with the GFA at least once per semester; preferably during the online registration period.
- Continued regular contact with the GFA, even if the student is not taking coursework during a given semester.

GFA's are Appointments should be made with the GFA whenever the student has a need for this type of assistance.

Graduate Faculty Advisors:

1. available to assist students in selecting graduation options, scheduling, and sequencing courses, assisting with problems in scheduling, and providing referrals to other university resources.
2. provide guidance for program planning for the entire program at the time of initial advisement. A Graduate Program Plan of Study (POS) approved by the GFA should be in each student's file; the student should have a copy for his/her own use; GFA's should sign off on any POS changes made.
3. review the POS when his/her advisee is within twelve hours of graduation. Care should be taken to make sure that courses listed on the POS are congruent with courses taken to fulfill program requirements.
4. assist the student with initial thesis/practicum guidance and assist student in identifying an appropriate thesis/practicum chair.
5. available for advising and reviewing schedules for their graduate students prior to registration.

Note: In the absence of a GFA, the program coordinator assumes the role of GFA for the graduate student until either a replacement is identified or the designated GFA returns.

Each graduate student, new or continuing, is responsible for assuring that they are:

1. completing degree requirements.
2. keeping informed about dates and processes for on-line registration.
3. taking actions on removing Incompletes.
4. making applications for graduation, taking comprehensive exam when required, or completed thesis/practicum.
5. for those students on a thesis/practicum option, working with their GFA to identify an appropriate thesis/practicum chair.
6. maintaining a current copy of the POS and making sure that course requirements are met.
7. checking with their GFA to determine needed courses or changes to POS.
8. checking with Registrar at least six weeks prior to graduation; if any problems are found, the GFA and/or Program Coordinator should be notified immediately.

9. keeping one's GFA informed about changes and/or decisions relating to pursuit of the degree. If the graduate student becomes inactive for a semester or more, he/she is expected to notify their GFA about his/her status.

8. ACADEMIC INTEGRITY

8.1. Academic Integrity

The Department of Technology Systems will not tolerate violations of academic integrity; violations will be pursued fully. East Carolina University has a clearly stated policy on academic integrity at http://catalog.ecu.edu/content.php?catoid=15&navoid=1502&hl=%22integrity%22&returnto=search#Academic_Integrity. The text is provided verbatim below:

Academic integrity is a cornerstone value of the intellectual community at ECU and is expected of every student. Academically violating the Honor Code consists of the following: cheating - the giving or receiving of any unauthorized aid or assistance or the giving or receiving of unfair advantage on any form of academic work; plagiarism - copying the language, structure, ideas, and/or thoughts of another and adopting those as one's original work; falsification - statement of untruth, either verbal or written, regarding any circumstances relating to academic work; and attempting any act which if completed would constitute an academic integrity violation as defined above. No student may drop the involved course or withdraw from school prior to resolving an academic integrity charge.

While academic dishonesty actions are taking place against a student, the graduate student may not withdraw from the University, drop a course in which academic dishonesty is suspected, take a comprehensive or final examination for a degree, or submit a practicum report, thesis, or dissertation to the Graduate School. Academic Integrity is expected of every East Carolina University student. A student or group of students knowing of circumstances in which an academic violation may have occurred is encouraged to bring this to the attention of the responsible faculty member, their program director, or department chairperson. Failure to do is an honor code violation. Academic integrity violations may result in a grade penalty, repetition of work, failure of the course, or removal from the graduate program, and other sanctions.

8.2. Ethics

As a graduate student you are in your first true stage of professional training. Therefore, you are expected to conduct yourself in accordance with the ethical standards established by the profession. This applies to your academic conduct, your clinical practice, and research. Students are responsible to know and practice the Code of Conduct and appropriate ethical standards of their specialty area. Unethical conduct may result in removal from the graduate program.

9. MASTER OF SCIENCE IN TECHNOLOGY MANAGEMENT

The Master of Science (MS) in Technology Management (MSTM) is designed to serve the needs of students who possess a baccalaureate degree in industrial technology, technology management, applied engineering, engineering technology and other similar technology-oriented disciplines. The emphasis of the MSTM degree program is on technology management, application to practice, and creative problem solving in technology driven industry and business. Students are required to apply theory to practice through analytical projects and research involving industry problems and applications. The program of study includes course work composed of 15 s.h. core courses and 15 to 18 s.h. of approved elective courses. Students may select one of the three options: non-thesis, practicum, or thesis. The minimum degree requirement is 33 s.h. for the non-thesis option and 30 s.h. for practicum and thesis options.

9.1. Specific Admissions Requirements:

- A baccalaureate degree from a regionally accredited institution.
- Minimum overall GPA of 3.0 on a 4.0 scale on all undergraduate work.

9.2. Program of Study

For the Master of Science (MS) in Technology Management (MSTM) there is a minimum degree requirement of 30-33 semester hours of credit. Additionally, the MSTM program requires student to follow one of three options outlined below:

1. Common core - 15 semester hours

- ITEC 6000 - Statistical Applications in Industry
- ITEC 6011 – Technological Ethics, Diversity, and Leadership
- ITEC 6060 - Research Methods in Technology
- ITEC 6200 - Technology Project Management
- ITEC 6406 - Capital Project and Cost Analysis for Technology

2. Options - 15-18 s.h.

MSTM Focus Areas: Students should select courses to help them meet their professional interests from the following:

- MANUFACTURING: ITEC 6003, 6005, and 6407
- QUALITY: ITEC 6110, 6112, and 6005
- DISTRIBUTION AND LOGISTICS: Select 3 from IDIS 6515, 6525, 6535, and 6545

Course Work Option (18 s.h.) - Working closely with his/her advisor, the student will create a plan of study by selecting electives to address specific interests. Students will also be required to take a comprehensive exam to demonstrate mastery of course work. The comprehensive exam can only be taken after completion of 24 s.h. or more of total course work. The comprehensive exam is taken based

on student's specific Focus Area. With this option, students choose a specific focus area with courses from the program's approved electives list (18 s.h.).

Students are eligible to take the Comprehensive Examination upon completion of all the required core coursework or with approval by their Concentration Coordinator. Non-thesis track students are required to pass a comprehensive exam that should only be taken after completion of 24 s.h. or more of total course work. Students are offered two attempts to pass where upon or their enrollment will be terminated. The comprehensive exam can be taken within the student's specific focus area. Students should review the section on [completing the comprehensive examination](#) for more details on the process and the committee structure.

The comprehensive exam is a written exam. It tests the student's breadth of knowledge in the areas of both core and concentration courses; it also features a research write-up. The comprehensive exam is offered in the fall and spring semesters. Students will be notified of the date of an upcoming comprehensive exam. Students who want to take the exam must notify the Office of Graduate Studies in the Department no later than two weeks prior to the upcoming comprehensive exam. The possible results of the comprehensive exam are pass and fail. Students must pass the exam to complete their degree. Students who fail the first attempt will be allowed a second attempt at a later semester.

Practicum option (15 s.h.)

- ITEC 6100 (3 s.h.) - Practicum in Industrial Technology
- Choose courses from the approved electives list (12 s.h.)

The practicum option in the MSTM provides students with an opportunity to engage in applied industry-based projects in Technology Management. They may choose to pursue their own independent industry-based practicum. Students desiring to pursue practicum work should declare their intent to do so in the first semester. The process of taking the practicum option is as follows.

- 1) Students work with their GFA and Program Coordinator to identify a Practicum Committee Chair.
- 2) Form a Practicum Committee (minimum of one additional Practicum Committee Members); the remaining Practicum Committee Members must be approved by the Practicum Committee Chair.
- 3) Download the [Pre-Practicum Research Approval Form](#), obtain all the required signatures and forward to the Director of Graduate Studies. Practicum Committee Chair is responsible for ensuring Practicum Committee Members agreement to serve on committee and Director of Graduate Studies verifies eligibility of the committee members.
- 4) Select a practicum topic and a target organization/industry where the project will take place by identifying an industry-based project approved by the Practicum Committee Chair, and obtaining a written confirmation using the form and forward to the Director of Graduate Studies
- 5) Register for ITEC 6100- Practicum in Industrial Technology.
- 6) Develop and present a practicum proposal to the Practicum Committee for approval. Complete the [Practicum Proposal Approval Form](#) and forward to the Director of Graduate Studies.
- 7) Complete and document the practicum project.
- 8) Defend the practicum project report to the committee:
 1. Submit the report to the Practicum Committee Chair for review

2. Schedule an oral practicum defense. The possible results of the defense would be:
 - **Pass with no revisions:** The practicum is accepted without further review by the committee.
 - **Pass with minor revisions:** The practicum requires minor revisions/corrections and needs to be reviewed by the Practicum Committee Chair within a time defined by the committee chair.
 - **Pass with major revisions:** Part of the practicum content requires major revisions/corrections and needs to be reviewed by the Practicum Committee within a time defined by the committee.
 - **Fail:** The quality of the practicum is not acceptable. The practicum must be rewritten and possibly involved additional research as outlined by the Practicum Committee. Students must undergo a second oral defense. Students may switch to another option or drop-out from the program if the second attempt fails.
3. Complete the [Practicum Signature Form](#) and include in the practicum report.

Completing the Practicum. The Practicum provides an alternative to the thesis or comprehensive examination option. During the Practicum semesters, the student: (1) gains hands-on experience in applied research; or (2) designs and implements a proposed solution. The practicum culminates in the completion of a Final Practicum Report and Practicum Oral Defense.

Practicum Committee. The Practicum Committee follows similar procedures as those described for a Thesis Committee. Practicum Proposals are generally no longer than 20 pages and include a description of the research problem, literature review, hypotheses, and methodology (including the research site, subjects, and data-gathering method with instrument(s) appended, and data analysis plan. Where appropriate, a letter of agreement from the administrator of the research site(s) must be appended to the proposal.

Practicum Oral Defense. The Practicum Oral Defense follows similar procedures as those outlined for a Thesis defense. After the final version of the Final Practicum Report (with any corrections required by the Practicum Committee) is approved by the Practicum Committee Chair, two copies of the report should be made, each signed by the Practicum Committee members and the Department Chair. One copy should be delivered to the Practicum Committee Chair and one copy the other to the Department's Director of Graduate Studies. Both copies of the Final Practicum Report must be delivered by the last day of classes that semester.

Thesis option (15 s.h.) - The student will conduct thesis research and present a seminar based on the thesis. The thesis proposal and the subsequent thesis must be approved by the student's advisor and a committee composed of three technology systems faculty members. Students desiring to pursue the thesis option should consult their faculty advisor and identify a thesis advisor and topic in the first semester.

- ITEC 7000 (6 s.h.) - Thesis
- Choose courses from the approved electives list (9 s.h.)

Students desiring to pursue this option should consult faculty and identify a thesis topic and advisor in the first semester. The process of taking the thesis option is as follows.

1. Work with their GFA and Program Coordinator to identify a Thesis Committee Chair.
2. Form a Thesis Committee (minimum of two additional Thesis Committee members); the remaining Thesis Committee members must be approved by the Thesis Committee Chair and the Director of Graduate Studies; at least two Committee Members must be graduate faculty within TSYS.
3. Obtain all the required signatures on the [Pre-Thesis Research Approval Form](#) and forward to the Director of Graduate Studies. The Thesis Committee Chair is responsible for ensuring Thesis Committee Members agreement to serve on the committee and the Director of Graduate Studies verifies eligibility of the Thesis Committee Members.
4. Register for ITEC 7000 Thesis.
5. Develop and present a thesis proposal to the Thesis Committee for approval. Complete the [Approval of Thesis Proposal Form](#) and forward to the Director of Graduate Studies.
6. Conduct research activities:
 - Keep Thesis Committee Members advised on progress toward research agenda.
 - Complete thesis draft and submit to committee for review.
7. Defend the thesis to the Thesis Committee:
 - Based on the timeline specified by Graduate School, submit the final draft of thesis to committee for review.
 - Schedule an oral thesis defense. The possible results of the defense would be:
 - **Pass with no revisions:** The thesis is accepted without further review by the committee.
 - **Pass with minor revisions:** The thesis requires minor revisions/corrections and needs to be reviewed by the Thesis Committee Chair within a time defined by the committee chair.
 - **Pass with major revisions:** Part of the thesis content requires major revisions/corrections and needs to be reviewed by the Thesis Committee within a time defined by the committee.
 - **Fail:** The quality of the thesis is not acceptable. The thesis must be rewritten and possibly involved additional research as outlined by the Thesis Committee. Students must undergo a second oral defense. Students may switch to another option or drop-out from the program if the second attempt fails.
8. Complete the [Thesis Signature Form](#) and include in the thesis.

3. Approved electives list for the MSTM Program

(Choose electives according to selected option.)

- IDIS 6515 - Logistical Security and Safety Management
- IDIS 6525 - Transportation Logistics Management
- IDIS 6535 - Supply Chain Logistics Management
- IDIS 6545 - Global Logistics Management
- ITEC 6003 - Production Planning and Inventory Management

- ITEC 6005 - Lean Enterprise
- ITEC 6110 - Quality Planning and Analysis
- ITEC 6112 - Design of Experiments for Products and Processes
- ITEC 6407 - Computer Integrated Manufacturing and Automation
- ITEC 6903 - Special Topics in Technology
- SAFT 6250 - Occupational Ergonomics
- SAFT 6402 - Applied Safety Management

10. MASTER OF SCIENCE IN INFORMATION AND CYBERSECURITY TECHNOLOGY

The MS in Information and Cybersecurity Technology (MSICT) is designed to serve the needs of students who possess baccalaureate degrees in networking technology-oriented disciplines. Students take a common set of courses and select one of three concentrations: network technology management, critical infrastructure, or cybersecurity. The program emphasizes advanced applications in computer networking such as network infrastructure management, networked systems design, network security, and technical problem solving in technology-driven organizations.

10.1. Specific Admissions Requirements:

- A baccalaureate degree from a regionally accredited institution.
- Minimum overall GPA of 2.7 on a 4.0 scale on all undergraduate work.

10.2. Program of Study

A minimum of 30-33 semester hours is required as follows:

1. Common core - 12 semester hours

- ITEC 6000 - Statistical Applications in Industry (3 s.h.)
- ITEC 6060 - Research Methods in Technology (3 s.h.)
- ITEC 6200 - Technology Project Management (3 s.h.)
- ICTN 6250 - Information Technology Compliance and Security Management (3 s.h.)

2. Concentration (Choose one) - 12 semester hours

Concentration in Network Technology Management

The MSICT with a concentration in network technology management provides advanced study in the implementation and management of information technology. The program provides hardware and software experiences in advanced technologies used in the design, implementation, administration, monitoring, optimization, and maintenance of data communication and computer networking systems in industry. The concentration in Network Technology Management requires 12 s.h. in the following courses:

- ICTN 6875 – Automation Solutions for Enterprise Networks (3 s.h.)
- ICTN 6879 – Enterprise Security Architecture (3 s.h.)
- ICTN 6880 - Advanced Topics in Enterprise Network Design (3 s.h.)
- ICTN 6885 – Information Technology Management (3 s.h.)

Concentration in Cybersecurity

The MSICT with a concentration in cybersecurity prepares students to design, deploy, manage, and apply techniques of securing and protecting the integrity and availability of information systems and infrastructures. This concentration provides knowledge to build career opportunities in occupations such as: Security Architect, Security Analyst, Information Security Officer, Cybersecurity Administrator, Chief Information Security Officer, Information Technology Specialist, and Technology Integration Specialist. Concentration prerequisite: CompTIA Security+ certification, Cisco CCNA certification, RedHat RHCSA certification, or equivalent undergraduate course work. The concentration in Cybersecurity requires 12 s.h. in the following courses:

- ICTN 6872 – Advanced Cybersecurity Technologies (3 s.h.)
- ICTN 6874 – Cybersecurity Operations and Risk Management (3 s.h.)
- ICTN 6876 – Cyber Defense (3 s.h.)
- ICTN 6879 – Enterprise Security Architecture (3 s.h.)

Concentration in Critical Infrastructure

The MSICT with a concentration in critical infrastructure concentration provides advanced study in the cybersecurity technologies, standards, and methods that are geared towards the specific needs of critical infrastructure systems. The concentration centers around the topics involving threat and risk assessment, risk mitigation, resource investment, preparedness planning, and disaster management. The program prepares personnel at all levels in organizations involved in operating critical infrastructures, in delivering services and responding to emergencies related to critical infrastructures. The concentration covers the 16 critical infrastructure sectors identified by the U.S. Government, whose assets, systems, and networks, whether physical or virtual, are considered vital to the National security and interests. This concentration program covers applications, technologies, and industry best practices focusing on strengthening and maintaining secure, functioning, and resilient information systems supporting critical infrastructures. The concentration in Information Security requires 12 s.h. in the following courses:

- ICTN6890 - Critical Infrastructure Security and Resiliency (3 s.h.)
- ICTN6893 - Cybersecurity Perspectives for Critical Infrastructure (3 s.h.)
- ICTN6895 - IT Risk Analysis and Management for Critical Infrastructure (3 s.h.)
- ICTN6897 - Embedded Systems and IoT Security (3 s.h.)

3. Option (Choose one) – 6-9 semester hours**Thesis option - 6 semester hours**

- ICTN 7000 – Thesis (6 s.h.)

Thesis option in the MSICT provides students with an opportunity to conduct research in a specific problem in Information and Cybersecurity Technology (ICT). The process of taking the thesis option is as follows.

1. Work with their GFA and Program Coordinator to identify a Thesis Committee Chair.
2. Form a Thesis Committee (minimum of two additional Thesis Committee members); the remaining Thesis Committee members must be approved by the Thesis Committee Chair and the Director of Graduate Studies; at least two Committee Members must be graduate faculty within TSYS.
3. Obtain all the required signatures on the [Pre-Thesis Research Approval Form](#) and forward to the Director of Graduate Studies. The Thesis Committee Chair is responsible for ensuring Thesis Committee Members agreement to serve on the committee and Director of Graduate Studies verifies eligibility of the Thesis Committee Members.
4. Register for ICTN 7000 Thesis.
5. Develop and present a thesis proposal to the Thesis Committee for approval. Complete the [Approval of Thesis Proposal Form](#) and forward to the Director of Graduate Studies.
6. Conduct research activities:
 - Keep Thesis Committee members advised on progress toward research agenda.
 - Complete thesis draft and submit to committee for review.
7. Defend the thesis to the Thesis Committee:
 - Based on the timeline specified by Graduate School, submit the final draft of thesis to committee for review.
 - Schedule an oral thesis defense. The possible results of the defense would be:
 - **Pass with no revisions:** The thesis is accepted without further review by the committee.
 - **Pass with minor revisions:** The thesis requires minor revisions/corrections and needs to be reviewed by the Thesis Committee Chair within a time defined by the committee chair.
 - **Pass with major revisions:** Part of the thesis content requires major revisions/corrections and needs to be reviewed by the Thesis Committee within a time defined by the committee.
 - **Fail:** The quality of the thesis is not acceptable. The thesis must be rewritten and possibly involved additional research as outlined by the Thesis Committee. Students must undergo a second oral defense. Students may switch to another option or drop-out from the program if the second attempt fails.
8. Complete the [Thesis Signature Form](#) and include in the thesis.

Practicum option - 6 semester hours

- ICTN 6900 – Practicum (6 s.h.)

Practicum option in the MSICT provides students with an opportunity to engage in applied industry-based projects in Information and Cybersecurity Technology (ICT). The process of taking the practicum option is as follows.

- 1) Students work with their GFA and Program Coordinator to identify a Practicum Committee Chair.

- 2) Form a Practicum Committee (minimum of two additional Practicum Committee Members); the remaining Practicum Committee Members must be approved by the Practicum Committee Chair and the Director of Graduate Studies.
- 3) Download the [Pre-Practicum Research Approval Form](#), obtain all the required signatures and forward to the Director of Graduate Studies. Practicum Committee Chair is responsible for ensuring Practicum Committee Members agreement to serve on committee and Director of Graduate Studies verifies eligibility of the committee members.
- 4) Select a practicum topic and a target organization/industry where the project will take place by identifying an industry-based project approved by the Practicum Committee Chair, and obtaining a written confirmation using the form and forward to the Director of Graduate Studies
- 5) Register for ICTN 6900 Practicum.
- 6) Develop and present a practicum proposal to the Practicum Committee for approval. Complete the [Practicum Proposal Approval Form](#) and forward to the Director of Graduate Studies.
- 7) Complete and document the practicum project.
- 8) Defend the practicum project report to the committee:
 1. Submit the report to the supervisor for review.
 2. Schedule an oral practicum defense. The possible results of the defense would be:
 - **Pass with no revisions:** The practicum is accepted without further review by the committee.
 - **Pass with minor revisions:** The practicum requires minor revisions/corrections and needs to be reviewed by the Practicum Committee Chair within a time defined by the committee chair.
 - **Pass with major revisions:** Part of the practicum content requires major revisions/corrections and needs to be reviewed by the Practicum Committee within a time defined by the committee.
 - **Fail:** The quality of the practicum is not acceptable. The practicum must be rewritten and possibly involved additional research as outlined by the Practicum Committee. Students must undergo a second oral defense. Students may switch to another option or drop-out from the program if the second attempt fails.
 3. Complete the [Practicum Signature Form](#) and include in the practicum report.

Completing the Practicum. The Practicum provides an alternative to the thesis or comprehensive examination option. During the Practicum semesters, the student: (1) gains hands-on experience in applied research; or (2) designs and implements a proposed solution. The practicum culminates in the completion of a Final Practicum Report and Practicum Oral Defense.

Practicum Committee. The Practicum Committee follows similar procedures as those described for a Thesis Committee. Practicum Proposals are generally no longer than 20 pages and include a description of the research problem, literature review, hypotheses, and methodology (including the research site, subjects, and data-gathering method with

instrument(s) appended, and data analysis plan. Where appropriate, a letter of agreement from the administrator of the research site(s) must be appended to the proposal.

Final Practicum Report. The Final Practicum Report (excluding cover page, table of contents, acknowledgments, references, and tables) should be at least 20 pages and not more than 40 pages. The Final Practicum Report should contain all the elements detailed above for the practicum proposal and should be prepared according to APA or other established format guidelines approved by the Practicum Committee.

Practicum Oral Defense. The Practicum Oral Defense follows similar procedures as those outlined for a thesis defense. After the final version of the Final Practicum Report (with any corrections required by the Practicum Committee) is approved by the Practicum Committee Chair, two copies of the report should be made, each signed by the Practicum Committee members and the Department Chair. One copy should be delivered to the Practicum Committee Chair and one copy the other to the Director of Graduate Studies. Both copies of the Final Practicum Report must be delivered by the last day of classes that semester.

Comprehensive Assessment option - 9 semester hours

The comprehensive assessment option requires the student to take two approved ICTN course electives and the ICTN6990 - Comprehensive Program Assessment course for a total of (9 s.h.). For approved program electives, students can select from the currently listed courses from any of the MSICT program concentration courses beyond their declared concentration. The special topic courses are also available based on the consent of the instructor.

- ICTN 6990 – Comprehensive Program Assessment (3 s.h.)

The student's advisor, the Program Coordinator, and the Director of Graduate Studies must approve the electives and student's course of study.

11. MASTER OF SCIENCE IN OCCUPATIONAL SAFETY

The Master of Science in Occupational Safety (MSOS) prepares graduates for leadership positions in occupational safety and related fields. An academic experience in the design and management of enterprise-wide safety systems is provided. The focus of this Program is in the core discipline of occupational safety (OS). Foundational principles and overarching academic goals of the MSOS program include ensuring effective communications skills, the ability to think critically and problem solving, and to develop applied research skills. The coursework includes analysis of occupational safety and health problems, accompanying problem-solving and decision-making techniques, and the application of established principles of accident prevention, control, and reduction in occupational settings.

11.1. Specific Admissions Requirements

- A baccalaureate degree from a regionally accredited institution.
- Minimum overall GPA of 2.7 on a 4.0 scale on all undergraduate work.
- An appropriate score on either the GRE or board certifications such as CSP, CIH, or CPE.

11.2. Program of Study

Minimum degree requirement is 36-39 semester hours as follows:

1. Foundational/transitional courses – semester hours

- SAFT 6001 - Regulatory Aspects of Occupational and Environmental Safety (3 s.h.)
- SAFT 6002 - Technical Aspects and Field Audits in Occupational Safety (3 s.h.)

2. Required courses - 21 semester hours

- SAFT 6040 - Critical Thinking and Research Methods in Occupational Safety (3 s.h.)
- SAFT 6250 - Occupational Ergonomics (3 s.h.)
- SAFT 6290 - Fire Protection and Prevention and Emergency Management (3 s.h.)
- SAFT 6310 - Risk Management and Workers' Compensation (3 s.h.)
- SAFT 6402 - Applied Safety Management (3 s.h.)
- SAFT 6410 - Systems Safety and Risk Analysis (3 s.h.)
- SAFT 6805 - Occupational Safety Monitoring and Control (3 s.h.)

3. Options (Choose one) - 9-12 semester hours

The program offers two options: Practicum option and Thesis option. Students enrolled in the program may choose either one of the options, based on their qualification and approval of the program's admission committee or the program coordinator.

Practicum option - 9 semester hours (View a [Plan of Study for the Practicum](#) option)

- SAFT 6995 - Practicum in Occupational Safety (3 s.h.)
- Approved electives (6 s.h.)

Thesis option - 12 semester hours (View a [Plan of Study for the thesis](#) option)

- BIOS 7021 - Biostatistics for Health Professionals I (3 s.h.)
or
ITEC 6000 - Statistical Applications in Industry (3 s.h.)
 - SAFT 7000 - Thesis (6 s.h.)
 - Approved elective (3 s.h.)
9. **Approved Electives** – Elective courses from CMGT, ITEC, PSYC, SAFT or other areas are selected as approved by the program coordinator. Students who are deficient in the foundational regulatory and technical aspects of occupational safety may be required to take additional courses. Program prerequisites include chemistry with lab and statistics. MS in Occupational Safety provides a research focus by allowing students to take six credit hours of SAFT 7000 as electives. This allows students to pursue independent industry-based research. Students desiring to pursue this option should consult faculty and identify a thesis topic and advisor in the first semester. Further Guidance in developing thesis research can be found in the *Practitioner's Guidebook for Developing Successful Research Proposals in Science, Engineering and Technology* by J. Barry DuVall and Te-Shun Chou at: https://myweb.ecu.edu/duvalli/Proposal_e-book_2015_v10.pdf The process of taking the thesis option is as follows.
1. Work with their GFA to identify a Thesis Committee Chair.
 2. Form a Thesis Committee (minimum 2 additional committee members); the remaining committee members must be approved by the Thesis Committee Chair and the Director of Graduate Studies; at least two committee members must be graduate faculty within TSYS.
 3. Obtain all the required signatures on the [Pre-Thesis Research Approval Form](#) and forward to the Director of Graduate Studies. The Committee Chair is responsible for ensuring committee members agreement to serve on committee and Director of Graduate Studies verifies eligibility of the committee members.
 4. Register for SAFT 7000 Thesis.
 5. Develop and present a thesis proposal to the Thesis Committee for approval. Complete the [Approval of Thesis Proposal Form](#) and forward to the Director of Graduate Studies.
 6. Conduct research activities:
 - Keep Thesis Committee advised on progress toward research agenda.
 - Complete thesis draft and submit to Thesis Committee for review.
 7. Defend the thesis to the committee:
 - Based on the timeline specified by Graduate School, submit the final draft of thesis to committee for review.
 - Schedule an oral thesis defense. The possible results of the defense would be:
 - **Pass with no revisions:** The thesis is accepted without further review by the committee.
 - **Pass with minor revisions:** The thesis requires minor revisions/corrections and needs to be reviewed by the committee chair within a time defined by the committee chair.

- **Pass with major revisions:** Part of the thesis content requires major revisions/corrections and needs to be reviewed by the committee within a time defined by the committee.
 - **Fail:** The quality of the thesis is not acceptable. The thesis must be rewritten and possibly involved additional research as outlined by the committee. Students must undergo a second oral defense. Students may switch to another option or drop-out from the program if the second attempt fails.
8. Complete the [Thesis Signature Form](#) and include in the thesis.

12. ACCELERATED BACHELOR OF SCIENCE TO MASTER OF SCIENCE IN INFORMATION AND CYBERSECURITY TECHNOLOGY

12.1. Overview of Accelerated BS to MS in Information and Cybersecurity Technology

The Accelerated from a BSICT to a MSICT is initiated while on-campus undergraduates are completing the Bachelor of Science. For this program, graduate student course work begins in the students' fourth year of undergraduate study and can be completed with one academic year of study beyond the bachelor's degree. Eligible students who are accepted into the program may count a maximum of 12 credit hours of graduate coursework towards completion of both the BS and MS degrees. Students are formally admitted to the master's program after all requirements for the undergraduate degree are completed.

Undergraduate information computer technology on-campus students may apply for the accelerated program after completion of a minimum of 80 eligible undergraduate credit hours, and students can begin taking graduate courses after completion of a minimum of 95 eligible undergraduate credit hours. The minimum GPA at the time of admission and entry to the program is a 3.3 major GPA and a 3.0 overall GPA. Students are formally admitted to the master's program after all requirements for the undergraduate degree are completed.

12.2. Program and Application Process

This graduate program has a large selection of options for students to choose from, including summer offerings for student electing to begin the accelerated program in the summer. Students are encouraged to work with their graduate faculty advisor to identify courses that match not only their program and concentration requirements, but also to round out their undergraduate degree program. Undergraduate students accepted into the accelerated program take the following courses:

- ITEC 6000 - Statistical Applications in Technology Management
- ITEC 6060 – Research Methods in Technology
- Two 6000-level ICTN/ITEC courses approved by program coordinator.

Per the Graduate Catalog, undergraduate students are not allowed to take graduate courses without advanced permission - in the form of admission to the 6-hour rule, an accelerated program, or the simultaneous undergraduate/non-degree graduate student enrollment. These options are all stated in the Graduate Catalog. Only the accelerated program allows for double counting: graduate courses may count in the undergraduate degree and still count in the graduate degree as well. The graduate courses taken under the 6-hour rule, or the non-degree option do not count in the undergraduate degree. Only one of these three options may be used.

Students interested in an accelerated program should meet with the Program Coordinator to discuss opportunity and implications. Students typically begin this process in their sophomore or Junior year of UG

study. If the Program Coordinator feels the student is a good candidate, they complete the electronic [Request to Pursue an Accelerated UG/GR Degree](#) form on behalf of the student. On the form, the Program Coordinator identifies which approved graduate courses may double count towards both the undergraduate and graduate degree requirements (max of 12 credits). The form is electronically routed to Registrar's Office for review and confirmation of eligibility, then routed to the Graduate School. Once form is received by Graduate School, a special attribute code is placed on the students Banner record and the approved request form is saved to the students Banner record.

Students who are granted permission to participate in an accelerated program may begin taking graduate level courses while an undergraduate student. Permission to participate in GR courses does not constitute admission into the Graduate program. Student must maintain a 3.00 cumulative GPA to remain eligible for participation. Program representative will register students for graduate level coursework due to level restrictions.

Students granted permission to participate in an Accelerated UG/GR program who have a cumulative GPA less than 3.00 at the time of UG graduation will be placed on **academic probation** in their first semester in the master's program and will be subject to dismissal from the program if they do not achieve a graduate level GPA of 3.0 in courses related to their program of study after 9 s.h. of graduate credit attempted.

For students intending to participate in the Accelerated Bachelor/Master of Science in Information Cybersecurity Technology:

- 1) The student is accepted to ECU and declares the major of a BS in Information and Computer Technology.
- 2) The student works with the undergraduate advisor to create a draft Degree Works plan with up to 12 semester hours of elective placeholders taken after 95 semester hours have been completed that apply to the undergraduate degree. Graduate courses taken may only count toward the undergraduate degree as approved electives. These elective courses will be selected in the next step.
- 3) The student meets with graduate advisor to enter graduate courses into the draft Degree Works plan consistent with MSICT requirements and the accelerated program. Up to 12 semester hours of graduate courses may be taken as an undergraduate. The graduate advisor emails the undergraduate advisor when the draft plan is complete and consistent with all the course requirements for the MSICT.
- 4) The undergraduate advisor reviews the draft plan and ensures that:
 - The semester that student must apply to the accelerated graduate program is noted in the plan.
 - The semester for application for undergraduate graduation is noted in the plan. This semester should be no later than the semester the student applies to the graduate program.
 - The plan meets the College of Engineering and Technology Degree Works Plans Best Practices.
- 5) The undergraduate advisor approves (locks) the plan.
- 6) Future changes to the plan can be made by the student and approved by only the undergraduate advisor if:
 - the scheduled graduate courses do not change.
 - the semesters of the scheduled graduate courses do not change.

- the undergraduate graduation semester does not change.
- 95 semester hours that apply to the undergraduate degree will be completed before any graduate courses are taken.

If the graduate courses or semesters are to be changed, they must be approved by the graduate advisor, and this approval must be documented in an email from the graduate advisor to the undergraduate advisor.

- 7) As soon as the student has completed 80 semester hours toward the undergraduate degree, the student applies to the graduate school for the accelerated program. If the student has not yet applied for undergraduate graduation, the student does so at this time so that the Degree Works plan audit will be activated for both degrees.
- 8) If the student is not accepted into the graduate program, the student works with the undergraduate advisor to revise the Degree Works plan to remove all graduate courses.

13. ACCELERATED BACHELOR OF SCIENCE TO MASTER OF SCIENCE TECHNOLOGY MANAGEMENT

13.1. Overview of Accelerated Programs

These accelerated degree programs are intended for outstanding undergraduate students and can be initiated while students are completing their bachelor's degree. Students in the following B.S. degree programs are eligible:

- BS-Design:
 - Bachelor of Science in Design - Architectural Technology Concentration
 - Bachelor of Science in Design - Mechanical Technology Concentration
- BS-IDIS: Bachelor of Science in Industrial Distribution and Logistics
- BS-IET: Bachelor of Science in Industrial Engineering Technology
- BS-IT: Bachelor of Science in Industrial Technology
 - Bachelor of Science in Industrial Technology - Industrial Management Concentration
 - Bachelor of Science in Industrial Technology - Industrial Engineering Technology Concentration
 - Bachelor of Science in Industrial Technology – (BS-IT Design Mechanical concentrations; BS-IT Design Architectural Concentrations, BS-IT Industrial Distribution and Logistics Concentrations)

Graduate student course work will begin in the students' senior year of undergraduate study and be completed in one academic year of study beyond the bachelor's degree. Up to 12 semester credit hours of graduate courses may be counted towards completion of both the undergraduate degree and the master's degree. Students will work with a faculty advisor in their junior year to prepare a plan of study for completing the accelerated program, which shall be included as part of the application package. Students are formally admitted to the master's program after all requirements for the undergraduate degree are completed. No GRE is required for qualified candidates applying for these accelerated programs.

Interested students need to be recommended by a graduate faculty member, who has worked with the student to create a plan of study that includes a listing of the graduate courses to be counted towards the accelerated program. The plan of study should include the projected date of completion of the undergraduate degree requirements and the semester of graduate assistantship eligibility, if applicable. The student shall also include a personal statement elaborating on their motivation to pursue a specific interest in technology management graduate education and the accelerated program. Students are encouraged to work with the program coordinator and graduate faculty advisor for preparing this plan of study. Students admitted into the accelerated degree program must earn a B or higher in all graduate coursework to remain in the program.

13.2. Accelerated BS in Industrial Distribution and Logistics/MS in Technology Management

OVERVIEW: The Accelerated Bachelor of Science in Industrial Distribution and Logistics/Master of Science in Technology Management program is initiated while undergraduates are completing the bachelor's degree. For this program, graduate student course work begins in the students' fourth year of undergraduate study and

can be completed with one academic year of study beyond the bachelor's degree. Eligible students accepted into this program may use up to 12 semester hours of graduate coursework towards completion of both the bachelor's and the master's degree.

REQUIREMENTS: The required minimum GPA at the time of admission to the program is 3.5 in the major and 3.0 overall. Undergraduate design students may apply for the accelerated program in their junior year after completion of a minimum of 80 eligible undergraduate semester hours and may begin taking graduate courses in their senior year after completion of a minimum of 90 eligible undergraduate semester hours. Students are formally admitted to the master's program after all requirements for the undergraduate degree are completed.

Students interested in an accelerated program should meet with the Program Coordinator to discuss opportunity and implications. Students typically begin this process in their sophomore or Junior year of UG study. If the Program Coordinator feels the student is a good candidate, they complete the electronic [Request to Pursue an Accelerated UG/GR Degree](#) form on behalf of the student. On the form, the Program Coordinator identifies which approved graduate courses may double count towards both the undergraduate and graduate degree requirements (max of 12 credits). The form is electronically routed to Registrar's Office for review and confirmation of eligibility, then routed to the Graduate School. Once form is received by Graduate School, a special attribute code is placed on the students Banner record and the approved request form is saved to the students Banner record.

Students who are granted permission to participate in an accelerated program may begin taking graduate level courses while an undergraduate student. Permission to participate in GR courses does not constitute admission into the Graduate program. Student must maintain a 3.00 cumulative GPA to remain eligible for participation. Program representative will register students for graduate level coursework due to level restrictions.

Students should apply for undergraduate graduation one semester prior to completing the undergraduate degree requirements and should apply for formal admission into the graduate program by the advertised application deadline for the desired term of admission. Students self-identify on their graduate application that they are part of a pre-approved accelerated program.

The GRE or other graduate admission exam requirements may be waived for students that meet the accelerated program's advanced standing requirements. Students should double check with their Program Coordinator to confirm whether they grant this waiver. Students granted permission to participate in an Accelerated UG/GR program who maintain a cumulative GPA of 3.00 or better at the time of undergraduate graduation will matriculate into the master's program in **good academic standing**. Approved graduate courses completed as part of the accelerated program with a grade of B or higher as an undergraduate student will be counted as transfer credits in the master's program.

Students granted permission to participate in an Accelerated UG/GR program who have a cumulative GPA less than 3.00 at the time of UG graduation will be placed on **academic probation** in their first semester in the master's program and will be subject to dismissal from the program if they do not achieve a graduate level GPA of 3.0 in courses related to their program of study after 9 s.h. of graduate credit attempted.

PROGRAM: Students admitted to the accelerated program must earn a B or higher in all graduate coursework to remain in the program. Undergraduate accelerated program students earning a grade of C in any graduate course can count that course toward the bachelor's degree but will no longer be eligible to take additional graduate courses and will be dropped from the accelerated program. Undergraduate students accepted into the accelerated program may count (12) semester hours from the following graduate courses towards completion of both the bachelor's and master's degrees:

- ITEC 6000 - Statistical Applications in Technology Management (for ITEC 3200)
- ITEC 6011 - Technological Ethics, Diversity, and Leadership (for ITEC 4293)
- ITEC 6110 - Quality Planning and Analysis (for ITEC 4300)
- ITEC 6200 - Technology Project Management (ITEC 3300)
- ITEC 6406 - Capital Project and Cost Analysis for Technology (for ITEC 3800)

APPLICATIONS: Students applying to the Accelerated BS in Industrial Distribution and Logistics/MS in Technology Management program will go through the regular graduate application process with the following exceptions:

- On the online graduate application form students will indicate that they are applying to an "Accelerated program".
- A supplemental form will be completed with a faculty advisor listing the graduate courses to be counted towards both degrees, the intended date of completion of the undergraduate degree requirements, and the intended semester of assistantship eligibility.
- Personal statement should address applicant's specific interest in technology management graduate education and the accelerated program.

13.3. Accelerated BS in Industrial Engineering Technology/MS in Technology Management

OVERVIEW: The Accelerated Bachelor of Science in Industrial Engineering Technology/Master of Science in Technology Management program is initiated while undergraduates are completing the bachelor's degree. For this program, graduate student course work begins in the students' fourth year of undergraduate study and can be completed with one academic year of study beyond the bachelor's degree. Eligible students accepted into this program may count (12) semester hours of graduate coursework towards completion of both the bachelor's and the master's degree.

REQUIREMENTS: The required minimum GPA at the time of admission to the program is 3.5 in the majors and 3.0 overall. Undergraduate design students may apply for the accelerated program in their junior year after completion of a minimum of 80 eligible undergraduate semester hours and may begin taking graduate courses in their senior year after completion of a minimum of 90 eligible undergraduate semester hours. Students are formally admitted to the master's program after all requirements for the undergraduate degree are completed.

PROGRAM: Students admitted to the accelerated program must earn a B or higher in all graduate coursework to remain in the program. Undergraduate accelerated program students earning a grade of C in any graduate course can count that course toward the bachelor's degree but will no longer be eligible to take additional graduate courses and will be dropped from the accelerated program. Undergraduate students accepted into

the accelerated program may count (12) semester hours from the following graduate courses towards completion of both the bachelor's and master's degrees:

- ITEC 6000 - Statistical Applications in Technology Management - Statistical Applications in Technology Management (for ITEC 3200)
- ITEC 6005 - Lean Enterprise (for IENG 4023)
- ITEC 6011 - Technological Ethics, Diversity, and Leadership - Technological Ethics, Diversity, and Leadership (for ITEC 4293)
- ITEC 6110 - Quality Planning and Analysis - Quality Planning and Analysis (for ITEC 4300)
- ITEC 6200 - Technology Project Management - Technology Project Management (for ITEC 3300)
- ITEC 6406 - Capital Project and Cost Analysis for Technology - Capital Project and Cost Analysis for Technology (for ITEC 3800)

APPLICATIONS: Students applying to the Accelerated BS in Industrial Engineering Technology/MS in Technology Management program will go through the regular graduate application process with the following exceptions:

- On the online graduate application form students will indicate that they are applying to an "Accelerated program".
- A supplemental form will be completed with a faculty advisor listing the graduate courses to be counted towards both degrees, the intended date of completion of the undergraduate degree requirements, and the intended semester of assistantship eligibility.
- Personal statement should address applicant's specific interest in technology management graduate education and the accelerated program.

13.4. Accelerated BS in Industrial Technology/MS in Technology Management

OVERVIEW: The Accelerated Bachelor of Science in Industrial Technology/Master of Science in Technology Management program is initiated while undergraduates are completing the bachelor's degree. For this program, graduate student course work begins in the students' fourth year of undergraduate study and can be completed with one academic year of study beyond the bachelor's degree. Eligible students accepted into this program may count (12) semester hours of graduate coursework towards completion of both the bachelor's and the master's degree.

REQUIREMENTS: The required minimum GPA at the time of admission to the program is 3.5 in the majors and 3.0 overall. Undergraduate design students may apply for the accelerated program in their junior year after completion of a minimum of 80 eligible undergraduate semester hours and may begin taking graduate courses in their senior year after completion of a minimum of 90 eligible undergraduate semester hours. Students are formally admitted to the master's program after all requirements for the undergraduate degree are completed.

PROGRAM: Students admitted to the accelerated program must earn a B or higher in all graduate coursework to remain in the program. Undergraduate accelerated program students earning a grade of C in any graduate course can count that course toward the bachelor's degree but will no longer be eligible to take additional graduate courses and will be dropped from the accelerated program. Undergraduate students accepted into

the accelerated program may count (12) semester hours from the following graduate courses towards completion of both the bachelor's and master's degrees:

- ITEC 6000 - Statistical Applications in Technology Management - Statistical Applications in Technology Management (for ITEC 3200)
- ITEC 6005 - Lean Enterprise (for IENG 4023)
- ITEC 6011 - Technological Ethics, Diversity, and Leadership - Technological Ethics, Diversity, and Leadership (for ITEC 4293)
- ITEC 6110 - Quality Planning and Analysis - Quality Planning and Analysis (for ITEC 4300)
- ITEC 6200 - Technology Project Management - Technology Project Management (for ITEC 3300)
- ITEC 6406 - Capital Project and Cost Analysis for Technology - Capital Project and Cost Analysis for Technology (for ITEC 3800)

APPLICATIONS: Students applying to the Accelerated BS in Industrial Technology/MS in Technology Management program will go through the regular graduate application process with the following exceptions:

- On the online graduate application form students will indicate that they are applying to an "Accelerated program".
- A supplemental form will be completed with a faculty advisor listing the graduate courses to be counted towards both degrees, the intended date of completion of the undergraduate degree requirements, and the intended semester of assistantship eligibility.
- Personal statement should address applicant's specific interest in technology management graduate education and the accelerated program.

14. PH.D. IN TECHNOLOGY MANAGEMENT

East Carolina University is one of five universities collaborating to provide an online PhD program in technology management. The degree is awarded through Indiana State University and is designed to prepare scholars for leadership positions in education, industry, government, and business. The program consists of a minimum of 90 semester hours beyond the baccalaureate. Students are required to successfully complete preliminary and comprehensive examinations, design and conduct original research, and defend a doctoral dissertation. An individualized program of study and applied research internship is also required.

The program involves five areas of required study: technical core (15 s.h.), research core (27 s.h.), technical specialization (30 s.h.), internship (6 s.h.), and cognates (12 s.h.). Additional courses may be required to address deficiencies. ITEC 7050 is a prerequisite to all distance learning programs. Design of each candidate's program of study is dependent on their goals and background experiences. Five technical specializations are currently available:

- Digital Communications Systems
- Construction Management
- Manufacturing Systems
- Quality Systems
- Human Resource Development

ECU provides the lead on specializations in digital communication and manufacturing systems. Students identify a "home university" based on their technical specialization and/or geographic location. Students seeking further information regarding this degree program are encouraged to visit the program site at: <http://www.indstate.edu/technology/consortphd>

15. GRADUATE CERTIFICATES

Graduate Certificates provide students with advanced training in high-demand, technology intensive fields. These programs are structured to achieve this objective through 12-15 semester hours of advanced course work. The certificate programs are online based and permit students to be advised, complete courses, collaborate on projects, conduct research, and complete the degree via the Internet. Students typically spend 10-15 hours per week in preparing for and participating in each course. Most of the students in the certificate programs are working professionals who are pursuing the degree for career advancement. Courses are scheduled to allow completion of the certificate program in approximately 18 months or less in a sequence over the fall, spring, and summer semesters to allow program entry in any semester.

15.1. Specific Admissions Requirements

- A baccalaureate degree from a regionally accredited institution.
- Minimum overall GPA of 2.5 on a 4.0 scale on all undergraduate work.

15.2. Graduate Certificate - Network Management Professional

The Network Management Professional (NMP) certificate program prepares graduates for employment in the computer networking industry. The skills developed in the course work leads to successful careers as network administrator, data communication manager, communication specialist, and similar positions. The program is structured to achieve this objective through 12 semester hours of advanced course work. Our state-of-the-art remote access labs provide hands-on experiences in the design, deployment, and management intra/internet client/server networks. Students are required to have high-speed Internet connection. Required courses:

- ICTN 6875 - Automation Solutions for Enterprise Networks (3 s.h.)
- ICTN 6880 - Advanced Topics in Enterprise Network Design (3 s.h.)
- ICTN 6885 - Information Technology Management (3 s.h.)
- ITEC 6060 - Research Methods in Technology (3 s.h.)

15.3. Graduate Certificate - Cybersecurity Professional

The Cybersecurity Professional certificate program prepares graduates for employment in various levels of information technology field. The skills included in the course work are required to be successful in positions such as cybersecurity specialist, network security analyst, and information security manager. The program is structured to achieve this objective through 12 semester hours of advanced course work. Students are required to have high-speed internet connection. Hands-on experiences using industrial standard software are provided through our virtual laboratory. Required courses:

- ICTN 6872 – Advanced Cybersecurity Technologies (3 s.h.)
- ICTN 6874 – Cybersecurity Operations and Risk Management (3 s.h.)
- ICTN 6876 – Cyber Defense (3 s.h.)
- ITEC 6060 – Research Methods in Technology (3 s.h.)

15.4. Graduate Certificate - Lean Six Sigma Black Belt

The Lean Six-Sigma Black-Belt (LSSBB) certificate program prepares graduates for employment in business and industry in a variety of jobs related to quality and process improvement. The skills developed in the coursework lead to successful careers as a Lean Six-Sigma facilitator, continuous improvement manager, project leader, executive champion, and similar positions. The program is structured to achieve this objective through (15) semester hours of advanced course work. All courses are offered 100% online with no on-campus residency required. High-speed internet access is required. A minimum is (15) semester hours of credit are needed as follows:

- ITEC 6000 - Statistical Application in Technology Management (3 s.h.)
- ITEC 6005 - Lean Enterprise (3 s.h.)
- ITEC 6110 - Quality Planning and Analysis (3 s.h.)
- ITEC 6112 - Design of Experiments for Products and Processes (3 s.h.)
- ITEC 6501 - Enterprise Process Improvement Project (3 s.h.) *

*ITEC 6501 requires an industrial or business process project where certified savings or revenue increase should be shown. Students are responsible for finding and structuring the project.

Students may choose to pursue this certificate jointly with the MS in Technology Management (MSTM) degree. A maximum credit of 12 semester hours of MSTM courses can be used toward the certificate. The courses are scheduled to allow completion of the certificate program within one year.

16. THESIS, PRACTICUM & COMPREHENSIVE OPTIONS

16.1. Program Options

Students can develop a program that meets their needs and interests. These options include a thesis; practicum, or comprehensive examination with approved electives.

- **Thesis Option.** The thesis option is intended primarily for those who are interested in continuing their education in doctoral-level programs. This option gives graduate students the research experience often required to be successful in pursuit of admission to and completion of a Ph.D. program.
- **Practicum Option.** The practicum option allows the graduate student to acquire special skills by coordinating formal course work with an industry mentored practicum in an organizational setting. The practicum experience is typically designed for those graduate students who are currently employed in their industry of study. The content of the practicum is established jointly by the cooperating organization, the practicum committee chair, and the graduate student. A comprehensive practicum final report is required in which the student analyzes and integrates practicum experiences with relevant research and coursework.
- **Comprehensive Examination with Approved Electives Option.** This option consists of elective courses selected undergraduate faculty advisement. The choice of electives is intended to provide the student with a broad interdisciplinary background, complementing the student's own academic training and interests. A comprehensive examination covering material from the concentration or focus area courses is required under this option. NOTE: This option is only available with the MS in Network Technology or MS in Technology Management programs of study.

16.2. Program of Study Changes.

For students in the MS in Network Technology, MS in Occupational Safety, or MS in Technology Management programs, requests for changes to an approved Program of Studies (e.g. changes to courses, electives, concentration, etc.) must be initiated by the student and be supported by the student's Graduate Faculty Advisor, the Program Coordinator and the Director of Graduate Studies; this is accomplished by the student a newly updated and signed Program of Study form approved by the program coordinator and TSYS Graduate Director.

16.3. Changes between Practicum, Thesis and Comprehensive Assessment Options.

As with any change in the student's program of study, once course work has started, the graduate student must initiate a request for change. For students in the MS in Network Technology, or MS in Technology Management programs, the following guidelines are in place regarding option change requests:

1. **Comprehensive Examination Option (MSTM Students Only)** – For those MSTM students who initially select the comprehensive exam option for their Program of Study, they can take the comprehensive examination only twice. If the student fails to pass on both attempts, then the student will not receive

a degree with that concentration or focus area. Students not opting to take a second attempt at the comprehensive exam may request to change options via the Request for Change process outlined above. Included in that change request the student must indicate what option they wish to change to.

2. **Comprehensive Assessment Option (MSICT Students Only)** – For those MSICT students who initially select the comprehensive assessment option for their Program of Study, they may request to change options via the Request for Change process outlined above. Included in that change request the student must indicate what option they wish to change to.
3. **Practicum Option** – For those students who initially select the practicum option for their Program of Study, they can report out their practicum findings only twice. If the student fails to pass on both attempts, then the student will not receive a degree with that concentration or focus area. Students not opting to take a second attempt may request to change options via the Request for Change process outlined above. Included in that change request the student must indicate what option they wish to change to.
4. **Thesis Option** – For those students who initially select the thesis option for their Program of Study, they can defend their thesis only twice. If the student fails to pass on both attempts, then the student will not receive a degree in that concentration or focus area. Students not opting to take a second attempt at defending their thesis may request to change options via the Request for Change process outlined above. Included in that change request the student must indicate what option they wish to change to.

For students in the MS in Occupational Safety program, the following guidelines are in place regarding option change requests:

1. **Practicum Option** – For those students who initially select the practicum option for their Program of Study, they can report out their practicum findings only twice. If the student fails to pass on both attempts, then the student will be considered to have failed that degree completion requirement. Students not opting to take a second attempt at defending their thesis may request to change options via the Request for Change process outlined above. Included in that change request the student must indicate that they are requesting to change to the thesis option.
2. **Thesis Option** – For those students who initially select the thesis option for their Program of Study, they can defend their thesis only twice. If the student fails to pass on both attempts, then the student will be considered to have failed that degree completion requirement. Students not opting to take a second attempt at defending their thesis may request to change options via the Request for Change process outlined above. Included in that change request the student must indicate that they are requesting to change to the practicum option.

16.4. Grading of Practicum, Thesis, and Comprehensive Assessment Courses.

Each of the master's programs in the department have thesis and practicum options requiring anywhere from 3 to 6 credits of a given thesis or practicum course. The thesis and practicum courses in these programs include: ITEC7000; ITCN7000; SAFT7000; ICTN6900; ITEC6100; and SAFT6995. Upon completion of any thesis or practicum course a grade of 'S' or 'U' will be given. For the MSICT program, it has the comprehensive assessment option that includes completion of ICTN6990. The following grades are assessed for these courses:

- **S** (Satisfactory progress) is a special grade reserved for thesis and dissertation research, internships, practica, and similar courses. The grades in these courses are not included in meeting the cumulative grade point average of 3.0 required for graduation.
- **U** (Unsatisfactory progress) is a special grade reserved for thesis and dissertation research, internships, practica, and similar courses. The grades in these courses are not included in meeting the cumulative grade point average of 3.0 required for graduation.

Students receive course credit hours when a grade of 'S' is indicated; on the other hand, students do not receive course credit hours when a grade of 'U' is indicated. Since most practicum and thesis courses can be taken for varying levels of credit at any one-time (1 to 6 credits normally) students must accumulate the minimum number of 'S' satisfactory progress credits to meet their program's requirements. Currently, all three master's programs in the department require a minimum of 3-6 semester hours of the designated practicum course [ITEC6100; ICTN6900; SAFT6995] with a grade of 'S' indicating satisfactory progress to complete that portion of the program.

The three Masters' programs in the department currently require six semester hours of the designated thesis course [ITEC7000; ICTN7000; SAFT7000] with a grade of 'S' indicating satisfactory progress to complete that portion of the program; The MS in Occupational Safety and the MS in Technology Management both require a minimum of 6 semester hours in ITEC7000 or SAFT7000 with a grade of 'S' indicating satisfactory progress to complete that portion of the program. Only the MSICT allows for the comprehensive assessment option that requires six elective credits and completion of ICTN6990 with a grade of 'S' indicating satisfactory assessment.

In the case where a student receives a 'U' for their thesis, practicum or comprehensive assessment course, no credit will be given toward completing that portion of their program. Students receiving three grades of 'U' indicating unsatisfactory progress, regardless of the number of credits taken for each of the three courses, will be recommend for dismissal from the program.

16.5. Timeline for Thesis or Practicum Completion.

After their proposal has been accepted by their thesis or practicum committee, students will develop a timeline for completing their thesis or practicum based on the format shown below. The timeline for either thesis or practicum will be based on the final date for submission of thesis that is pre-established by the graduate school; that date can be found on the ECU graduate school website at: <https://gradschool.ecu.edu/thesis-dissertation/>

- Final date for submission of thesis to graduate school: XX/XX/XXXX (Grad Sch. Thesis Due Date)
- Date for chair and committee signoff on thesis: 2 business days prior to (Grad Sch. Thesis Due Date)
- Date for incorporating input from committee and chair into thesis document: 5 business days prior to (Grad Sch. Thesis Due Date)
- Date for final draft to Committee Chair and Department Chair: 10 business days prior to (Grad Sch. Thesis Due Date)
- Date for oral presentation to Committee: 15 business days prior to (Grad Sch. Thesis Due Date)
- Date for final draft submitted to Committee: 20 business days prior to (Grad Sch. Thesis Due Date)

17. COMPLETING A THESIS

17.1. Thesis Overview

The thesis will be based on independent research as agreed to by the student's Thesis Committee and will follow a format that is compatible with the requirements of the Graduate School. The Thesis Committee must have a minimum of three committee members (a chair and two other faculty members from the department who are members of the graduate faculty). Before the thesis research is started, students must present their Thesis Committee with a written thesis proposal. There is also to be an oral defense of the thesis proposal. The Graduate School must also receive a copy of the [Pre-Thesis Research Approval Form](#).

The writing of a thesis report requires careful planning to effectively execute the completion of a final document in a timely and orderly fashion. There are several steps to completing a thesis report that include producing the proposal, carrying out the research, and writing the thesis report. The thesis is deposited electronically with the graduate school and the department gets a hard copy with binding of the thesis.

17.2. General Guidelines for Writing a Thesis Proposal

As for the thesis, this requirement consists of a student research project and document intended to replicate the technological research process, from its beginning to its end. The thesis is completed in consultation with a minimum of a three-person committee, including a Thesis Committee Chair and at least two Graduate Faculty Members; all must have current standing as Graduate Faculty at ECU. There are no length stipulations for a thesis document. It should, however, be a scholarly product acceptable to the academic community. An example of a thesis document would include the following chapters:

1. **Introduction** - An introductory chapter stating the research problem.
2. **Literature Review and Research Questions/Hypotheses**- A chapter containing a description of the theoretical context for the exploration of the research problem, a synthesis of literature reviewed, and research hypotheses.
3. **Methodology** – A chapter including a description of the research methods (e.g., survey, analysis of secondary data, field research), the sample or data source, the measurement of variables contained in the hypotheses, and the methods of data analysis.
4. **Research Findings** – A chapter detailing the study's research findings with reference to appended tables or other forms of documentation.
5. **Summary and Conclusions** - A chapter providing a summary of the work and a discussion of the implications of the findings for future research.
6. **Final sections of the thesis** typically include references cited; appendices; and other required Graduate School forms.

The thesis document and references sections should be prepared according to APA or other approved format style guidelines. The Thesis Committee should be consulted on style and formatting specifics. The thesis also must include a typed electronic Title Page, as prescribed by the Graduate School, and any necessary University

and Medical Center Institutional Review Board or IRB forms (See below and <http://www.ecu.edu/irb/> for IRB forms and instructions).

Thesis Committee Composition

When the graduate student is ready to begin the thesis process, they should consult with the Program Coordinator to identify a Thesis Committee Chair. Further guidance on Thesis Committee Chair requirements can be found in the [ECU Faculty Manual, Part II, Section IV, Graduate School Organization](#). Aside from the Thesis Committee Chair, the student selects two more Thesis Committee Members. One of the additional Thesis Committee Members must be a graduate faculty member in the Department of Technology Systems. The Third Thesis Committee Member must be a Graduate Faculty member at ECU and may come from another department at ECU. Finally, both Thesis Committee Members (department or outside) must have Associate or (full) Graduate Faculty standing with the ECU Graduate School. The Thesis Committee Chair should check with the Director of Graduate Studies to ensure that all Thesis Committee Members qualify.

The Thesis Committee may be composed of more than three Thesis Committee Members if the student desires. These External Thesis Committee members serve as consultants/Ex-Officio members, and therefore do not have to meet the criteria. Upon forming of the Thesis Committee, the student then must complete a [Master's Pre-Thesis Research Approval Form](#), including their tentative working title and the signatures of all committee members, and forward it to the Director of Graduate Studies. The Director of Graduate Studies will verify and record the committee members and insert the completed form in the student's file.

Completing IRB Paperwork (as required). Concurrent to or immediately following the formulation of their Thesis Committee, the student must complete the necessary paperwork required by the University's IRB Office, which grants them permission to proceed with their research (see <http://www.ecu.edu/irb/> for IRB forms and instructions. Note: In most cases, students fill out forms related to exempt research status. This procedure is required of all student thesis, regardless

if a student interviews a human subject or not. A copy of the IRB approval must be forwarded to the Director of Graduate Studies and must be included in the Appendix of every student's completed thesis. The Graduate School will not approve any Thesis without an IRB form.

Preparing Thesis Proposal. Working with the Thesis Committee, the student prepares a thesis proposal. There are no length stipulations for the proposal, but they generally include: an introduction providing a clear definition of the technical problem or issue to be investigated; a preliminary literature review; a research methodology including the student's intended research design and overarching research questions; and section describing the significance of the study – the first three chapters of the thesis. Upon approval of the Thesis Committee Chair, the student then is ready for a thesis proposal defense where they make a brief presentation to their Thesis Committee. At least two weeks prior to the scheduled defense, each member of the Thesis Committee should receive a copy of the proposal and a copy should be forwarded to the Director of Graduate Studies.

Thesis Oral Defense. Upon approval of the Thesis Committee Chair and at least two weeks prior to the scheduled defense, each member of the Thesis Committee should receive a copy of the most up-to-date version of the thesis for their review from the student. At least one week prior to the defense, a copy of the

thesis should be forwarded to Director of Graduate Studies. At this time, the Thesis Committee Chair should also announce the time and date of the student's thesis defense to the department and invite the department faculty and graduate students to the defense. The Thesis Defense will be a one-hour session in which the student makes a polished 25-30 minute presentation of their work and then answers questions from the Thesis Committee and the audience regarding their research.

17.3. Graduate Thesis Committee Members

There are several roles beyond that of the Graduate Faculty Advisor (GFA) that support specific graduate activities within the Department; many of those involve membership on various types of graduate level committees. Each of these committee roles should complement and support the completion of program requirements with the goal of leading graduate students toward a successful completion of their respective programs.

ECU requires a minimum of three associate or full graduate faculty (including the Thesis Committee Chair) to serve on a student's thesis committee. Graduate teaching faculty and external members may serve as a fourth member (or more) of the graduate student's advisory committee but cannot replace the required minimum of three. A student's thesis committee may appoint external members; however, the Director of Graduate Studies for the Department is required to inform the Graduate School of the external member and provide a current CV or resume at the time the committee is formed. Graduate student desiring external members to be on their Thesis Committee should work with their Thesis Committee Chair on identifying appropriate external committee members and making necessary notifications. The various committee roles are further outlined in the following sections supporting the requirements for graduate degree programs having thesis and practicum elements to them.

Thesis Committee Chair or Co-Chair: Each student conducting thesis research will have a Thesis Committee consisting of a Thesis Committee Chair and a minimum of two other Thesis Committee Members. The Thesis Committee Chair must be a member of the ECU Graduate faculty and is designated as having full Graduate Faculty status. Two individuals may serve as Thesis Committee Co-Chair's. If Co-Chairs are assigned, they collectively assume the duties of the Thesis Committee Chair. Further guidance on Thesis Committee Chair requirements can be found in the [ECU Faculty Manual, Part II, Section IV, Graduate School Organization](#). Students should work with their GFA to identify an appropriate Thesis Committee Chair; once identified, the Thesis Committee Chair can assist the student in finalizing their committee members. The role of the Thesis Committee Chair includes:

- recommending Thesis Committee members and external members to serve on the Thesis Committee. If changes in the Thesis Committee membership are desired, they must be approved by the Thesis Committee Chair.
- supervising the formulation/writing of the student's thesis proposal.
- scheduling an oral defense of the thesis proposal no earlier than two weeks after the Thesis Committee members have received a copy of the thesis proposal. The oral defense should not be scheduled until:
 - a. the proposal is in a form acceptable to the Thesis Committee Chair; and
 - b. the Thesis Committee Chair feels the student can successfully defend the proposal.
- directing the student in carrying out the approved study and supervise the writing of the thesis.

- scheduling a final oral examination to defend the thesis. The final oral examination should not be scheduled until:
 - a. the thesis has been approved by the Thesis Committee Chair ensuring that it meets minimum the expectations of the proposed work, conformity to style, readability, and accuracy of data presentation and analysis; and
 - b. the Thesis Committee Chair feels the student is prepared to defend the thesis.

Typically, the Thesis Committee Chair will approve the chapters of the proposal (and the thesis) before it is given to the Thesis Committee Members to read. However, each Thesis Committee may decide how closely committee members will monitor and provide feedback on the writing of individual chapters and whether the document is read chapter-by-chapter or in its totality. The Thesis Committee Chair and Thesis Committee should agree on this procedure as soon as possible after the formulation of the entire Thesis Committee.

Thesis Committee Member: Each student conducting thesis research will have a Thesis Committee consisting of a Thesis Committee Chair and a minimum of two other Thesis Committee Members. A Thesis Committee Member must be a member of the ECU Graduate faculty and have the status of either full Graduate Faculty member or Associate Graduate Faculty member. Further guidance on Thesis Committee Member requirements can be found in the [ECU Faculty Manual, Part II, Section IV, Graduate School Organization](#). The role of the Thesis Committee Member includes:

- assisting in the formulation/writing of the student's thesis proposal.
- reviewing the thesis proposal prior to the oral defense and attending the scheduled oral defense of the thesis proposal.
- assisting the student in carrying out the approved study and the writing of the thesis.
- reviewing the final draft of Thesis and attending the scheduled defense.

External Thesis Committee Member: Each student conducting thesis research will have a Thesis Committee consisting of a Thesis Committee Chair and a minimum of two other Thesis Committee Members. Beyond the three required committee members, a student's thesis committee may include External Thesis Committee members. The Director of Graduate Studies for the Department is required to inform the Graduate School of the external thesis committee members and provide a current curriculum vitae or resume for each external member. Graduate students desiring external members to be on their Thesis Committee should work with their Thesis Committee Chair on identifying appropriate external committee members and making necessary notifications. The role of the External Thesis Committee Member includes:

- providing specialized support and guidance to the graduate student and the Thesis Committee.
- assisting in the formulation/writing of the student's thesis proposal.
- reviewing thesis proposal prior to the oral defense and attending the scheduled oral defense of the thesis proposal.
- assisting the student in carrying out the approved study and the writing of the thesis.
- reviewing the final draft of the Thesis and attending the scheduled defense.

17.4. Graduate Thesis Timeline

For graduate students completing a thesis, the final submission date and requirements are set by the Graduate School. Graduate students must upload their thesis electronic document into Vireo by the published deadline for the semester in which they would like to graduate. Typically, the dates are approximately a week prior to the end of each spring, summer, and fall semester. Graduate students should utilize the thesis forms from the same graduate school site. Most of these forms utilize DocuSign to track the electronic signatures of each respondent. Ultimately, it is the graduate student's responsibility to track and maintain progress on the thesis submission process. Graduate students completing the thesis option should work with their thesis committee chair at the beginning of the thesis proposal process to develop an appropriate timeline for completion and timely submission of the final thesis product; this timeline should be completed as a part of their thesis proposal to their thesis committee. The timeline for the thesis should be based on the final date for submission of thesis pre-established by the graduate school at: <https://gradschool.ecu.edu/thesis-dissertation/>. The timeline should include:

- Final date for submission of thesis to graduate school: (Grad School thesis due date)
- Date for Department Chair and Thesis Committee signoff on thesis: 2 business days prior to (Grad School thesis due date)
- Date for incorporating input and changes from Thesis Committee and Department Chair into thesis document: 5 business days prior to (Grad School thesis due date)
- Date for final draft to Thesis Committee and Department Chair: 10 business days prior to (Grad Sch. thesis due date)
- Date for oral presentation to Thesis Committee: 15 business days prior to (Grad Sch. thesis due date)
- Date for draft thesis to be submitted to Thesis Committee: 20 business days prior to (Grad Sch. thesis Due date)

18. COMPLETING A PRACTICUM

18.1. Practicum Overview

Completing a Practicum option provides students with an opportunity to engage in applied industry-based projects. The practicum will be based on an independent project identified by the student as agreed to by the student's Practicum Committee. The Practicum Committee must have a minimum of three committee members (a chair, an on-site supervisor from industry and another faculty member from the department. Before the practicum project is started, the students must present their Practicum Committee with a written practicum proposal and have the [Pre-Practicum Research Approval Form](#) completed and signed. There is also to be a written practicum report to be presented by the student usually in the form of a refereed journal article submission or refereed conference paper that has been approved by the committee. A practicum project requires careful planning on the part of the graduate student to effectively execute the completion of a final document in a timely and orderly fashion.

18.2. Graduate Student Practicum Expectations

Graduate practicums are field experiences that allow a student to observe and document how working professionals perform their job responsibilities by engaging in applied industry-based projects. Students work with their on-site supervisor and other practicum committee members to gather real-time data and then analyze and report their findings typically in the form of a refereed journal article submission or refereed conference paper that has been approved by the committee. Concurrently, students enroll in a program specific course (ICTN6900, ITEC6100, or SAFT6900) that outlines the expectations and requirements of the practicum. The student's instructor of record for this course is also the chair of the student's practicum committee. General characteristics of practicums include:

- Observing and correlating practices in the field with theories and methods previously studied.
- Shadowing onsite employees who provide the student with needed data and resource information to complete their proposed practicum project.
- Recording data or assisting with tasks as directed by on-site personnel.
- Completing a final practicum report.

18.3. Final Practicum Report

At a high level, a graduate practicum report is an explanation of what the student accomplished during a practical experience and the outcomes of that experience. Practicums can be completed in a wide range of study areas that typically combine academic knowledge with applied experience in professional settings, giving students the chance to work in areas such as formative research or program implementation. A formal practicum report is a part of the final assessment of the student's efforts and must be approved by the student's practicum committee and then complete a final review by the Department Chair.

Each student conducting a practicum will have a Practicum Chair; the Practicum Chair is also the instructor of record for the course and must be a faculty member in the department. Students conducting a practicum are expected to:

- identify an appropriate site and site supervisor for their proposed practicum.
- draft an abstract that briefly describes the proposed practicum and complete the Pre-Practicum Research Approval form so it can be reviewed and signed by the Practicum Committee members.
- work with their GFA to identify a Practicum Committee Chair.
- work with practicum committee regarding proposed practicum onsite activities.
- recommend an appropriate venue for the practicum final report to the Practicum Committee. Normally, this final practicum report will be in the form of a refereed journal article submission or refereed conference paper.
- write the practicum report so it meets the minimum standards of conformity to style, readability, and accuracy of data presentation and analysis - as outlined by the journal/conference and approved by the practicum committee.
- when the Practicum report is ready for submission to the appropriate refereed journal/conference, submit the report to the practicum committee for final review making sure to read through the report for errors in spelling, grammar, or punctuation.

- work with practicum committee chair to schedule a final committee evaluation of the practicum and the practicum final report. Once the Department Chair approves the final report, the student should immediately submit the article to the identified journal/conference reviewing body. To ensure that appropriate credit is given to each participating member, as a general practice, the student should be listed as the first author, the onsite supervisor should be listed as second author, the practicum committee chair should be listed as third author with the other practicum committee member listed as fourth author on the paper. In the absence of further guidance on the practicum final report, at a minimum, the major narrative divisions of the report should contain:
- **Introduction.** The student should write a brief description of what the practicum report is about and why it was done. Next, describe the problem or need on which the practicum was based, the historical background of this problem or need, and any earlier efforts made in addressing the problem. A brief review of the key literature relating to the project should be covered. This section should also describe the supervising agency that provided the opportunity to complete the practicum and state the goals and objectives, and the greater significance of the practicum effort. Finally, the student should explain what their assigned onsite duties were.
- **Methods.** The methods section should include a description of methods and procedures used in the practicum, to carry out the goals and objectives. Make sure to give credit to individuals who developed the methods, procedures, tests, or concepts you will employ by means of literature citation. Strategies utilized, implementation difficulties encountered, computational techniques employed, and criteria used to evaluate are described and discussed in this section as well.
- **Results.** The student should describe the specific activities they were tasked with during their practical experience explaining the timeframe required to complete the project. This section should describe the results and findings of the problem or the effectiveness of a developed or implemented program, however tentative they may be. For repetitive tasks, the student should include the overall time frame of the practicum and an estimated amount of time devoted to each major duty or tasking. Additionally, the student should describe any key observations noted while conducting their practicum and what techniques or important concepts that were learned from those observations. In this section the student should also explain the practical and theoretical value of the practicum experience. The student should also:
 - compare what they did during their practicum to coursework they had prior to the work experience.
 - describe what outcomes they expected and what results they achieved during this experience.
 - explain recommendations for future practicum improvements.
 - describe how their practicum experience influenced your professional or academic goals.
- **Discussion and Conclusion.** All conclusions and recommendations resulting from the practicum are discussed in this section, including the impact or effect of their efforts. They should be discussed in terms of their implications for the problem or program that originally motivated the work. Any limitations on the interpretation of the findings or obstacles in program development or evaluation are also discussed in this section. The student should end the practicum report by providing summary statements that recaps the content of the report.

- **References.** The student should include a reference listing citing any information used for the report. Use the referencing style that the journal/conference requires to provide proper citations in the report.
- **Appendices and other deliverables.** Following guidance from the student's practicum committee and where appropriate, the student should also attach:
 - a copy of the practicum agreement.
 - a copy of the job description onsite.
 - descriptions of grants the student wrote or reports/evaluations produced onsite.
 - data collection tools utilized.
 - measures such as surveys, questionnaires that were used.
 - other relevant products such as training manuals, power point presentations, flyers, reports to the sponsoring agency.

18.4. Graduate Practicum Committee Members

Practicum Committee Chair: Each student conducting a practicum will have a Practicum Chair; the Practicum Chair is also the instructor of record for the course and must be a faculty member in the department. Students should work with their GFA to identify an appropriate Practicum Committee Chair; once identified, the Practicum Committee Chair can assist the student in finalizing their committee members. The role of the Practicum Committee Chair includes the following:

- Approve Practicum Committee Members to serve on the Practicum Committee. If changes in the Practicum Committee membership are desired, they must be approved by the Practicum Committee Chair.
- Evaluate proposed practicum onsite activities and make appropriate recommendations to the graduate student and on-site supervisor, to ensure a safe and successful practicum experience.
- Provide liaison between the on-site supervisor, the graduate student, and the practicum committee where appropriate.
- Assist the student in identifying an appropriate venue for the practicum final report. Normally, this report will be in the form of a refereed journal article submission or refereed conference paper.
- Schedule a final committee evaluation of the practicum and the practicum final report. This should not be scheduled until the Practicum:
 - a. report meets minimum standards of conformity to style, readability, and accuracy of data presentation and analysis as outlined by either the journal/conference and approved by the practicum committee; and
 - b. report is ready for submission to the appropriate refereed journal/conference; and
 - c. Committee feels the student is prepared to present the practicum results to the Department Chair for final review.

Practicum Committee Member: Each student conducting practicum activities will have at least one other Practicum Committee Member faculty member from the Department. The Practicum Committee Member(s) shall:

- assist in the planning and formulation of the student's practicum proposal.

- assist the student in carrying out the approved practicum activities.
- assist the student in meeting conference/journal requirements.
- review final draft of practicum report.
- attend final committee evaluation of the practicum and the practicum final report and ensuring that:
 - a. the Practicum report meets minimum standards of conformity to style, readability, and accuracy of data presentation and analysis as outlined by either the journal/conference and approved by the practicum committee; and
 - b. the Practicum report is ready for submission to the appropriate refereed journal/conference; and
 - c. a recommendation is made as to the student's final practicum results.

Practicum On-Site Supervisor: For each practicum committee the student will identify an On-Site Supervisor to assist with the practicum experience. The Practicum On-Site Supervisor does not have to be an ECU faculty member or have any affiliation with ECU other than to support the graduate student with their practicum. The following minimum expectations are asked of the On-Site Supervisor:

- Provide on-site supervision for the proposed practicum.
- Provide appropriate space and access to the graduate student for the purpose of completing the proposed practicum.
- Make clear to the graduate student what the expectations are regarding their conduct and resource access while on-site.
- Attend final committee evaluation of the practicum and the practicum final report, ensuring that:
 - a. the Practicum report meets minimum standards of conformity to style, readability, and accuracy of data presentation and analysis as outlined by either the journal/conference and approved by the practicum committee; and
 - b. the Practicum report is ready for submission to the appropriate refereed journal/conference; and,
 - c. a recommendation is made as to the student's final practicum results.

18.5. Practicum Report Timeline

For graduate students completing a practicum, the final submission date and requirements are set by the department and the practicum committee. The deadline for the final practicum report is the same as the due date for thesis and is posted on the graduate school site at: <https://gradschool.ecu.edu/thesis-dissertation/>. Although the report does not get submitted to the graduate school, the department uses this due for all thesis and practicum document submissions. Typically, the due dates are approximately a week prior to the end of each spring, summer, and fall semester. Ultimately, it the graduate student's responsibility to track and maintain progress on the practicum report submission process. Graduate students completing the practicum option should work with their practicum committee chair at the beginning of the practicum process to develop an appropriate timeline for completion and timely submission of the final practicum report; this timeline should be completed as a part of their practicum proposal to their practicum committee. The timeline should include:

- Final date for submission of Practicum Report to Practicum Committee Chair: (Grad School thesis due date)

- Date for Department Chair and Practicum Committee signoff on practicum report: 2 business days prior to (Grad School thesis due date)
- Date for incorporating input and changes to Practicum Report: 5 business days prior to (Grad School thesis due date)
- Date for final draft of Practicum Report to Practicum Committee Chair and Department Chair: 10 business days prior to (Grad Sch. thesis due date)
- Date for oral presentation to Practicum Committee: 15 business days prior to (Grad Sch. thesis due date)
- Date for draft of practicum report submitted to Practicum Committee: 20 business days prior to (Grad Sch. thesis Due date)

19. COMPLETING A COMPREHENSIVE EXAMINATION

19.1. Comprehensive Examination Overview

The comprehensive examination is an assessment that covers a broad base of material from the graduate student's program of study; it is a final assessment to evaluate the student's knowledge and capacities to earn a given graduate degree program. Currently, in the Department of Technology Systems, only the Master of Science on Technology Management programs offer a comprehensive examination option. The exact content of the comprehensive exam varies by program, and concentration or focus area; however, all comprehensive exams follow a similar written format.

The comprehensive examination tests the student's breadth of knowledge in the areas of focus area or concentration courses. Students will be notified of the date of an upcoming comprehensive exam by the Department; the comprehensive exam is currently offered only in the spring or fall semester. Students who want to take the comprehensive exam must notify the Office of Graduate Studies in the Department no later than two weeks prior to the upcoming comprehensive exam of their intent to take the exam.

The possible results of the comprehensive exam are pass and fail. Students who choose the comprehensive examination option must pass the exam to complete their respective degree program. Students who fail the first attempt at the comprehensive exam will be allowed a second attempt at a later semester. Students should refer to Section 16 of this Guide for more details regarding switching to another program option.

A Comprehensive Examination Committee consisting of three committee members (a chair and two other graduate faculty members from the department) will be formed each semester for each program concentration/focus area. The contents of the comprehensive examination will be developed and assessed by the Committee.

19.2. Comprehensive Examination Committee Members

Comprehensive Examination Committee Chair: Each student taking a comprehensive examination will have a Comprehensive Examination Committee Chair. The Committee will be chaired by the student's concentration

Coordinator (MSICT) or Focus Area Coordinator (MSTM). The role of the Comprehensive Examination Committee Chair includes the following:

- Recruit at least two other Committee Members to serve on the Comprehensive Examination Committee and notify the Department's Office of Graduate Studies of the members involved.
- Supervise the creation of the student's comprehensive examination.
- Direct the student in carrying out the comprehensive exam and closely supervise the evaluation process.
- Provide direct liaison between the committee and the student throughout the process.
- Provide direct liaison between the committee and the Department's Office of Graduate Studies throughout the process.
- Using the attached [Comprehensive Exam Form](#), submit results of the comprehensive examination to the Department's Office of Graduate Studies within (5) business days of exam completion.

Comprehensive Examination Committee Member: Each student taking comprehensive examination option will have at least two other Comprehensive Examination Committee Graduate Faculty members from the Department (Graduate Teaching Faculty or higher). The role of the Comprehensive Examination Committee Member(s) includes the following:

- Assist in the Committee Chair with the formulation/writing of the student's Comprehensive Examination assessment.
- Review student's final submission of comprehensive examination and make appropriate evaluations to the exam responses in a timely manner; timely manner here is considered within (5) business days from exam response submission.

Master's Pre-Thesis Research Approval

Before beginning master's thesis research, and at least one semester before defending a thesis, this check list must be completed by the master's candidate in conjunction with the thesis director. Please NOTE: Student is required to provide a copy to all committee members; all thesis research must be approved by the thesis director and the Unit Graduate Program Director. All students whose thesis projects involve human subjects must have their proposed research approved by the University and Medical Center Institutional Review Board (UMCIRB) before beginning the studies involving those subjects. Likewise, all students whose projects involve animals must have their proposed research approved by the Institutional Animal Care and Use Committee (IACUC) before beginning those studies. A copy of the appropriate approval must be included in the Appendix of the completed thesis. **The Graduate Program Director completes and submits this form to Marquerite Latham (bassm@ecu.edu).**

NOTE: You may have to select "enable editing" in order to fill in this form.

Date:

Student Name:

Phone Number:

Email Address:

Degree Program/Dept.:

Banner ID:

Working Title of Thesis Research:

Mentor/Director of Master's or Doctoral work:

1.

(Type or print name and Banner ID Here)

☒ Graduate or Associate Graduate

All Graduate Student Advisory Committees must have at least three ECU Graduate or associate Graduate Faculty members (some ECU Programs may require more, please check with your Graduate Program Director), which includes the mentor/director. Requests for External members need to be submitted by the Graduate Program Director, as defined in the Faculty Manual ([Faculty Manual, Part II, Section IV, subsection F](#))

Tentative Graduate Student Advisory Committee members:

If so, please list:

2.

☒ Graduate or Associate Graduate

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3.
(Type or print name and Banner ID Here) ☒ Graduate or Associate Graduate
4. ☐ External Member ☐ Graduate Teaching Faculty
(Type or print name and Banner ID Here) ☐ Associate/Full time Graduate
5. ☐ External Member ☐ Graduate Teaching Faculty
(Type or print name and Banner ID Here) ☐ Associate/Full time Graduate

Has your proposed research been reviewed and approved by your director?

Does your research involve human subject?

Has it been approved by the UMCIRB?

If not, when will it be reviewed for approval?

Does your research involve animals?

Has it been approved by the IACUC?

If not, when will it be reviewed for approval?

Does your research involve potential biohazards such as recombinant DNA, viral vectors, infectious agents, human blood products, etc.?

Has it been approved by the Biosafety Committee?

If not, when will it be reviewed for approval?

Approvals:

Thesis Director Signature

Date

Unit Graduate Program Director Signature

Date

Acknowledgement of Receipt by Graduate School:

Dean of the Graduate School or designee

Date

Note: Students should use the Graduate Schools DocuSign form found on the Grad School Website.

Approval of Thesis Proposal

Student Name: _____

Banner ID: _____

Program Concentration: _____

Thesis Title: _____

By signature below, I approve the thesis proposal, and agree to supervise the proposed work upon its completion.

Approvals:

Thesis Committee Chair	Date
Thesis Committee Member	Date
Thesis Committee Member	Date
Thesis Committee Member	Date
Thesis Committee Member	Date
Director of Graduate Studies	Date

Note: Students should use the Graduate Schools DocuSign form found on the Grad School Website.

Thesis Signature Form

TITLE

by

Your Name Here

APPROVED BY:

THESIS COMMITTEE CHAIR: _____
(Name, Degree Here)

THESIS COMMITTEE MEMBER: _____
(Name, Degree Here)

THESIS COMMITTEE MEMBER: _____
(Name, Degree Here)

CHAIR OF DEPARTMENT
OF TECHNOLOGY SYSTEMS: _____
Tijjani Mohammed, PhD

DEAN OF THE
GRADUATE SCHOOL: _____
Paul J. Gemperline, PhD

Note: Students should use the Graduate Schools DocuSign form found on the Grad School Website.

Pre-Practicum Research Approval

Before beginning practicum research, this form must be completed by the master's candidate in coordination with the Practicum Committee Chair. All practicum research must be approved by the Practicum Committee Chair and the Director of Graduate Studies. All practicum projects involve human subjects must have their proposed research approved by the University and Medical Center Institutional Review Board (UMCIRB) before beginning the studies involving those subjects. Likewise, all students whose projects involve animals must have their proposed research approved by the Institutional Animal Care and Use Committee (IACUC) before beginning those studies. A copy of the appropriate approvals must be submitted with this form, or with an updated form when it is known that the research requires the involvement of such subjects and must be included in the Appendix of the completed practicum report.

Student Name: _____ Banner ID: _____

Program and Concentration/Focus Area: _____ (MSTM/MSICT/MSOS)

Concentration or Focus Area: _____

Estimated Dates of Practicum Completion: _____

Practicum Committee Members

Practicum Committee Chair: _____

Practicum Committee Member: _____

Onsite Supervisor (Committee Member): _____

Title of Proposed Practicum: _____

Brief Description of Proposed Practicum: _____

Proposed Journal/Conference to submit article/paper for publication:

Questions regarding research:

1. Has your proposed research been reviewed and approved by your director? YES / NO
2. Does your research involve human subjects? YES / NO
 - If YES, then has it been approved by the UMCIRB? YES / NO
 - If NO, when will it be reviewed for approval? _____ (date)
3. Does your research involve animals? YES / NO
 - If YES, has it been approved by the IACUC? YES / NO

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- If NO, when will it be reviewed for approval? _____ (date)
- 4. Does your research involve potential biohazards such as recumbent DNA, viral vectors, infectious agents, human blood products etc.? YES / NO
 - If YES, has it been approved by the by the Biosafety Committee? YES / NO
 - If not, when will it be reviewed for approval? _____ (date)

It is anticipated that the proposed practicum will require approximately _____ hours of on-site activities and will be conducted at the following location: _____

The timeframe for these onsite activities will begin/end: _____ (dates)

Graduate Student: agrees that this practicum will be performed as a requirement for degree listed above and under the supervision of the Practicum Committee Chair and the onsite supervisor. The Student Agrees to (1) complete all planned project activities as approved by both the Practicum Committee Chair, the committee, and the On-site Supervisor and will do so in the proscribed manner following the standards of professional practice set by the on-site supervisor; (2) once all on-site activities are complete, the student will contact both the Practicum Committee Chair, committee member(s), and the On-site Supervisor that all activities are complete and report on the practicum results.

Signature: _____ **Date:** _____
(Graduate Student's Signature)

On-site Supervisor agrees to: (1) provide on-site supervision for the proposed practicum; (2) provide appropriate space and access to the graduate student for the purpose of completing the proposed practicum; (3) make clear to the graduate student what the expectations are regarding their conduct and resource access while on-site. When appropriate, advise the Practicum Committee Chair on the graduate student progress on-site.

On-site Supervisor's Signature: _____ **Date:** _____
(Onsite Supervisor's Signature)

On-Site Supervisor's Phone: _____ **Email:** _____
(Onsite Supervisor's Phone) (On-Site Supervisors Email)

Practicum Committee Chair: agrees to (1) evaluate proposed practicum onsite activities and make appropriate recommends to the graduate student and on-site supervisor to help ensure a safe and successful practicum experience; and (2) provide liaison between the on-site supervisor, the graduate student, and the practicum committee where appropriate.

Practicum Chair's Signature: _____ **Date:** _____
(Practicum Chair's Signature)

Director of Graduate Studies Signature: _____ **Date:** _____
(Director of Graduate Studies Signature)

NOTE: This practicum may be terminated at any time by the On-Site Supervisor or the University upon written notification to all parties involved.

Practicum Reporting Form

Student Name: _____ Banner ID: _____

Program and Concentration/Focus Area: _____ (MSTM/MSICT/MSOS)

Concentration or Focus Area: _____

Dates of Practicum Completion: _____

Report Attempt: _____ (First Attempt/Second Attempt)

Committee Members

Practicum Committee Chair: _____

Practicum Committee Member: _____

Onsite Supervisor (Committee Member): _____

PASS/FAIL: By signature below, it is recognized that the above-named student successfully reported the results of their practicum. Based on the three committee signatures below, a student must have at least the chair and one other committee member indicate PASS for the student to have passed this attempt at reporting the practicum results.

		PASS / FAIL
Practicum Committee Chair	Date	
		PASS / FAIL
Practicum Committee Member	Date	
		PASS / FAIL
Onsite Supervisor (Committee Member)	Date	

Director of Graduate Studies

Based on the collective committee recommendation above, this Practicum reporting attempt is considered:

		PASS / FAIL
Director of Graduate Studies	Date	

Comprehensive Examination

Student Name: _____ Banner ID: _____

Program and Concentration/Focus Area: _____ (MSTM/MSICT/MSOS)

Concentration or Focus Area: _____

Dates of Comprehensive Examination: _____

Examination Attempt: _____ (First Attempt/Second Attempt)

Committee Members

Comprehensive Examination Committee Chair: _____

Comprehensive Examination Committee Member: _____

Comprehensive Examination Committee Member: _____

PASS/FAIL: By signature below, it is recognized that the above-named student successfully completed the comprehensive examination. Based on the three committee signatures below, a student must have at least two of the three committee members indicate PASS for the student to have passed this attempt at the Comprehensive Examination.

	PASS / FAIL
Comprehensive Examination Committee Chair	Date
	PASS / FAIL
Comprehensive Examination Committee Member	Date
	PASS / FAIL
Comprehensive Examination Committee Member	Date

Director of Graduate Studies

Based on the collective committee recommendation above, this comprehensive exam attempt is considered:

	PASS / FAIL
Director of Graduate Studies	Date

MSICT Approval of Comprehensive Assessment Option Elective Courses

Student Name: _____**Banner ID:** _____**MSICT Concentration:** _____

I am requesting that the following two courses, which will be used as elective courses for my MSICT degree.

Elective Course 1: _____
Course Prefix Course Number Course Title

Elective Course 2: _____
Course Prefix Course Number Course Title

By signature below, I approve the elective courses of the student for non-thesis option.

Approvals:

Program Coordinator	Date
---------------------	------

Director of Graduate Studies	Date
------------------------------	------

Department Chair	Date
------------------	------

DEPARTMENT OF TECHNOLOGY SYSTEMS GRADUATE PROGRAM GUIDE

MS in Technology Management (Check Sheet)

Name: _____ **Banner ID:** _____ **ECU Email:** _____
Catalog: _____ **Phone:** _____ **Other Email:** _____
Intended Graduation Date: _____ **On-Campus:** ☐ **DE:** ☒ **Admission Term:** _____
Optional Additional Program: _____ **Grad Program Advisor:** Dr. Kanchan Das
Declared Track: ☐ Non-Thesis (33 hours) ☐ Practicum (30 hours) ☐ Thesis (30 hours) **Checksheet updated:** 5/25/2023

Core (15 hrs)		Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
ITEC 6060	Research Methods in Technology			Fa, Sp, Su		3	
ITEC 6000	Statistical Application in Technology Mgmt			Fa, Sp, Su		3	
ITEC 6011	Technological Ethics, Diversity, and Leadership			Fall		3	
ITEC 6200	Technology Project Management			Fa, Sp		3	
ITEC 6406	Capital Project Cost Analysis for Technology			Spring		3	

Notes:

Options (Choose one of the following):

☐ Non-Thesis option – 6 approved electives (18 hours) and comprehensive exam

At least three of your approved electives must align with an area of emphasis listed at the top of the 2nd page. All non-thesis track students are required to pass a Comprehensive Examination (taken after completing at least 24s.h.). Students are given a maximum of two attempts to pass the exam. Not offered over the summer term. Consult with your program coordinator for additional details.

Comprehensive Exam term: _____ **Area:** _____ **Completion Date:** _____

☐ Practicum option - 4 approved electives (12 hours) plus 3 hours practicum

The student works on an industry project, writes a formal report, and gives a public presentation on the outcomes of the practicum. A practicum proposal and the subsequent work must be approved by the student's practicum committee.

ITEC 6100	Practicum in Industrial Technology	P/C: ITEC 6060		As needed		2	
ITEC 6100	Practicum in Industrial Technology	P/C: ITEC 6060		As needed		1	
Practicum Chair:		Practicum Committee members:					

☐ Thesis option - 3 approved electives (9 hours) plus 6 hours thesis

The student conducts a thesis research, writes a formal report, and presents a seminar based on the research. A research proposal and the subsequent thesis must be approved by the student's thesis committee composed of three Technology Systems graduate faculty.

ITEC 7000	Thesis	P:ITEC 6000, 6060		As needed		3	
ITEC 7000	Thesis	P:ITEC 6000, 6060		As needed		3	
Thesis Chair:		Thesis Committee members:					

Approved Elective Pick List – 9-18 hours depending on option

Area of Emphasis: ☐ Quality ☐ Mfg ☐ Logistics

			Substitution	Semester Offered	Sem/Yr	Credits	Grade
IDIS 6515	Logistical Security & Safety Management	P/C: ITEC 6060		Fall OY		3	
IDIS 6525	Transportation Logistics Management	P/C: ITEC 6060		Spring EY		3	
IDIS 6535	Supply Chain Logistics Management	P/C: ITEC 6060		Fall EY		3	
IDIS 6545	Global Logistics Management	P/C: ITEC 6060		Spring OY		3	
ITEC 6003	Production Planning & Inventory Management	P/C: ITEC 6060		Spring OY		3	
ITEC 6005	Lean Enterprise			Summer		3	
ITEC 6110	Quality Planning & Analysis	P/C: ITEC 6000		Fall		3	
ITEC 6112	Design of Experiments for Products & Processes	P/C: ITEC 6000		Spring		3	
ITEC 6407	Smart Manufacturing	P/C: ITEC 6060		Fall EY		3	
SAFT 6250	Occupational Ergonomics			Sp24, tba		3	
SAFT 6402	Applied Safety Management			Sp24, tba		3	
ITEC 6903	Special Topics in Technology			Not offered		3	

Notes: OY = ODD Years; EY = EVEN Years.

MS in Technology Management (Check Sheet) [continued]

DISTRIBUTION & LOGISTICS area of emphasis – IDIS 6815, 6825, 6835. and/or 6845,
QUALITY area of emphasis – ITEC 6005, 6110, 6112
MANUFACTURING area of emphasis – ITEC 6003, 6005, 6407

Optional - LSSBB stackable grad cert – ITEC 6000, 6005, 6110, 6112, (ITEC 6501 would be one course beyond– can add internally without a fee with MSTM)

Sp23	Su23	Fa23	Sp24	Su24	Fa24	Sp25	Su25	Fa25	Sp26

Notes:

The above information is for planning purposes only. The responsibility for meeting all academic requirements, as officially documented in the ECU Catalog, rests with the student. Course offerings and rotations may change without notice. Please consult with your academic advisor prior to registration

DEPARTMENT OF TECHNOLOGY SYSTEMS GRADUATE PROGRAM GUIDE

MSICT– Network Management Technology (Check Sheet)

Master of Science in Information and Cybersecurity Technology (2024-2025)

Network Technology Management Concentration

Name: _____ Banner ID: _____ ECU Email: _____
 Catalog: _____ Phone: _____ Other Email: _____
 Intended Graduation Date: _____ On-Campus: ☐ DE: ☒ Admission Term: _____
 Optional Certificate Program: _____ Grad Faculty Advisor: Dr. John Pickard (pickardjt@ecu.edu)
 Declared Track: ☐ Thesis ☐ Practicum ☐ Comp Exam Checksheet updated: July 1, 2024

Core (12 hrs)		Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
ITEC 6060+	Research Methods in Technology			Fa, Sp, Su		3	
ITEC 6000	Statistical Application in Industry			Fa, Sp, Su		3	
ITEC 6200	Technology Project Mgmt			Fa, Sp		3	
ICTN 6250	Info Tech Compliance & Security Mgmt			Sp25 then Fall		3	
Notes:							

Concentration (12 hrs)		Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
ICTN 6875	Automation Solutions for Enterprise Networks			Su25 then Spring		3	
ICTN 6879	Enterprise Security Architecture	P:ICTN 6872 or P:ICTN 6250		Spring		3	
ICTN 6880	Adv Topics in Enterprise Network Design			Fall		3	
ICTN 6885	Information Technology Management	P/C:ICTN 6875; P:ICTN 6880		Spring		3	
Notes:							

Options (Choose one of the following):

<input type="checkbox"/> Comp Exam Track (with 9 hours approved electives)							
		Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
All non-thesis track students are required to pass a Comprehensive Examination. Students are given a maximum of two attempts to pass the exam. Consult the TSYS Graduate Program Guide for more details.							
ICTN						3	
ICTN						3	
ICTN 6990	Comprehensive Program Assessment			Fa, Sp		3	
Completion Date:							

<input type="checkbox"/> Thesis Track (6 hrs Minimum)							
		Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
ICTN 7000	Thesis			As needed		3	
ICTN 7000	Thesis			As needed		3	
Committee members (2):				Committee Chair:			

<input type="checkbox"/> Practicum Track (6 hrs Minimum)							
		Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
ICTN 6900	Practicum			As needed		3	
ICTN 6900	Practicum			As needed		3	
Committee members (2):				Committee Chair:			

Notes:

Approval of Program of Study:

Date:

Graduate Faculty Advisor

The above information is for planning purposes only. The responsibility for meeting all academic requirements, as officially documented in the ECU Catalog, rests with the student. Course offerings and rotations may change without notice. Please consult with your academic advisor prior to registration.

4/15/2024 af

DEPARTMENT OF TECHNOLOGY SYSTEMS GRADUATE PROGRAM GUIDE

MSICT – Critical Infrastructure (Check Sheet)

Master of Science in Information and Cybersecurity Technology (2024-2025)

Critical Infrastructure Concentration

Name: _____ Banner ID: _____ ECU Email: _____
 Catalog: _____ Phone: _____ Other Email: _____
 Intended Graduation Date: _____ On-Campus: ☐ DE: ☒ Admission Term: _____
 Optional Additional Program: _____ Grad Program Advisor: Dr. Erol Ozan (ozang@ecu.edu)
 Declared Track: ☐ Thesis ☐ Practicum ☐ Comp Exam Checksheet updated: July 1, 2024

Core (12 hrs)		Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
ITEC 6060+	Research Methods in Technology			Fa, Sp, Su		3	
ITEC 6000	Statistical Application in Industry			Fa, Sp, Su		3	
ITEC 6200	Technology Project Management			Fa, Sp		3	
ICTN 6250	Info Tech Compliance & Security Mgmt			Sp25 then Fall		3	

Notes:

Concentration (12 hrs)		Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
ICTN 6890	Critical Infrastructure Security & Resiliency			Fall		3	
ICTN 6893	Cybersecurity Perspectives for Critical Infra	P/C: ICTN 6890		Spring		3	
ICTN 6895	IT Risk Analysis & Mgmt. for Critical Infra	P/C: ICTN 6890		Fall		3	
ICTN 6897	Embedded Systems & IoT Security	P/C: ICTN 6890		Spring		3	

Notes:

Options (Choose one of the following):

☐ **Comp Exam Track** (with 9 hours approved electives)

	Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
All non-thesis track students are required to pass a Comprehensive Examination. Students are given a maximum of two attempts to pass the exam. Consult the TSYS Graduate Program Guide for more details.						
ICTN					3	
ICTN					3	
ICTN 6990	Comprehensive Program Assessment		Fa, Sp		3	

Completion Date:

☐ **Thesis Track** (6 hrs Minimum)

	Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
ICTN 7000	Thesis		As needed		3	
ICTN 7000	Thesis		As needed		3	

Committee members (2):

Committee Chair:

☐ **Practicum Track** (6 hrs Minimum)

	Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
ICTN 6900	Practicum		As needed		3	
ICTN 6900	Practicum		As needed		3	

Committee members (2):

Committee Chair:

Notes:

Approval of Program of Study:

Date:

Graduate Faculty Advisor

The above information is for planning purposes only. The responsibility for meeting all academic requirements, as officially documented in the ECU Catalog, rests with the student. Course offerings and rotations may change without notice. Please consult with your academic advisor prior to registration.

4/15/2024 af

DEPARTMENT OF TECHNOLOGY SYSTEMS GRADUATE PROGRAM GUIDE

MSICT – Cybersecurity (Check Sheet)

Master of Science in Information and Cybersecurity Technology (2024-2025)

Cybersecurity Concentration

Name: _____ Banner ID: _____ ECU Email: _____
 Catalog: _____ Phone: _____ Other Email: _____
 Intended Graduation Date: _____ On-Campus: ☐ DE: ☒ Admission Term: _____
 Optional Certificate Program: _____ Grad Faculty Advisor: Dr. Peng Li, lipeng@ecu.edu
 Declared Track: ☐ Thesis ☐ Practicum ☐ Comp Exam Checksheet updated: July 1, 2024

Core (12 hrs)

		Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
ITEC 6060+	Research Methods in Technology			Fa, Sp, Su		3	
ITEC 6000	Statistical Application in Industry			Fa, Sp, Su		3	
ITEC 6200	Technology Project Mgmt			Fa, Sp		3	
ICTN 6250	Info Tech Compliance & Security Mgmt			Sp25 then Fall		3	
Notes:							

Concentration (12 hrs)

		Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
ICTN 6872	Advanced Cybersecurity Technologies			Fall		3	
ICTN 6874	Cybersecurity Operations & Risk Mgmt			Spring		3	
ICTN 6876	Cyber Defense			Fall		3	
ICTN 6879	Enterprise Security Architecture	P:ICTN 6872 or P:ICTN 6250		Spring		3	
Notes:							

Options (Choose one of the following):

☐ Comp Exam Track (with 9 hours approved electives)

		Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
All non-thesis track students are required to pass a Comprehensive Examination. Students are given a maximum of two attempts to pass the exam. Consult the TSYS Graduate program Guide for more details.							
ICTN						3	
ICTN						3	
ICTN 6990	Comprehensive Program Assessment			Fa, Sp		3	
Comprehensive Exam Date:				Completion Date:			

☐ Thesis Track (6 hrs Minimum)

		Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
ICTN 7000	Thesis			As needed		3	
ICTN 7000	Thesis			As needed		3	
Committee members (2):				Committee Chair:			

☐ Practicum Track (6 hrs Minimum)

		Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
ICTN 6900	Practicum			As needed		3	
ICTN 6900	Practicum			As needed		3	
Committee members (2):				Committee Chair:			

Notes:

Approval of Program of Study: _____

Date: _____

Graduate Faculty Advisor

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4/15/2024 af

DEPARTMENT OF TECHNOLOGY SYSTEMS GRADUATE PROGRAM GUIDE

MS – Occupational Safety [Practicum Option] (Check Sheet)

Name:	_____	Date of PoS:	_____
Banner ID:	_____	Grad Catalog:	_____
ECU Email:	_____	Admit Term:	_____
Other Email:	_____	Intended Grad Date:	_____
Phone:	_____	On-Campus/DE:	_____
Grad Faculty Advisor:	_____		

Program Requirements (12 s.h.)	Prerequisite	Approved Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
SAFT 6001	Reg Asp of Occ & Env Safety		Fa		3	
SAFT 6002	Tech Asp/Field Audit in Occ Safety		Sp		3	
SAFT 6040	Crit Think & Res Meth in Occ Safety		Fa		3	
SAFT 6250	Occupational Ergonomics	P/C: SAFT6240	Fa		3	
SAFT 6290	Fire Protect & Prevent & Emer Mgmt		Sp		3	
SAFT 6310	Risk Mgmt and Workers' Comp	P/C: SAFT6001; SAFT6240	Fa		3	
SAFT 6402	Applied Safety Management	P/C: SAFT6001	Sp		3	
SAFT 6410	Systems Safety and Risk Analysis	P/C: SAFT6001	Sp		3	
SAFT 6805	Occ Safety Monitoring and Control	P/C: SAFT6001	Sp		3	
Practicum Option						
SAFT6995	Practicum in Occupational Safety				3	
*					3	
*					3	

* Required Approved Electives (6 s.h.)

Program Prerequisites (If Applicable):	Semester Offered	Completion Sem/Yr	Credits	Grade

APPROVAL OF PROGRAM OF STUDY:

Graduate Faculty Advisor _____

Date _____

DEPARTMENT OF TECHNOLOGY SYSTEMS GRADUATE PROGRAM GUIDE

MS – Occupational Safety [Thesis Option] (Check Sheet)

Name:	_____	Date of PoS:	_____
Banner ID:	_____	Grad Catalog:	_____
ECU Email:	_____	Admit Term:	_____
Other	_____	Intended Grad	_____
Email:	_____	Date:	_____
Phone:	_____	On-Campus/DE:	_____
Grad Faculty Advisor:	_____		

	Program Requirements (12 s.h.)	Prerequisite	Approved Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
SAFT 6001	Reg Asp of Occ & Env Safety			Fa		3	
SAFT 6002	Tech Asp/Field Audit in Occ Safety			Sp		3	
SAFT 6040	Crit Think & Res Meth in Occ Safety			Fa		3	
SAFT 6250	Occupational Ergonomics	P/C: SAFT6240		Fa		3	
SAFT 6290	Fire Protect & Prevent & Emer Mgmt			Sp		3	
SAFT 6310	Risk Mgmt and Workers' Comp	P/C: SAFT6001; SAFT6240		Fa		3	
SAFT 6402	Applied Safety Management	P/C: SAFT6001		Sp		3	
SAFT 6410	Systems Safety and Risk Analysis	P/C: SAFT6001		Sp		3	
SAFT 6805	Occ Safety Monitoring and Control	P/C: SAFT6001		Sp		3	
Practicum Option							
SAFT7000	Thesis					6	
BIOS7021	Biostatistics for Health Professionals					3	
ITEC6000	Statistical Applications in Industry					3	
*						3	

Note: Program requires completion of either BIOS7021 or ITEC6000

* Required Approved Elective (3 s.h.)

Program Prerequisites (If Applicable):

				Semester Offered	Completion Sem/Yr	Credits	Grade

APPROVAL OF PROGRAM OF STUDY:

Graduate Faculty Advisor

Date

DEPARTMENT OF TECHNOLOGY SYSTEMS GRADUATE PROGRAM GUIDE

Graduate Certificate – Cybersecurity Professional (Check Sheet)

Technology Systems Graduate Certificate (2024-25)

Cybersecurity Professional

Name: _____ Banner ID: _____ ECU Email: _____
 Catalog: _____ Phone: _____ Other Email: _____
 Intended Graduation Date: _____ On-Campus: ☐ DE: ☒ Admission Term: _____
 Optional Additional Program: _____ Grad Faculty Advisor: Dr. Peng Li, lipeng@ecu.edu
 Checksheet updated: July 1, 2024

Program Requirements (12 hrs)		Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
ITEC 6060	Research Methods in Technology			Fa, Sp, Su		3	
ICTN 6872	Advanced Cybersecurity Management			Fall		3	
ICTN 6874	Cybersecurity Operations & Risk Mgmt			Spring		3	
ICTN 6876	Cyber Defense			Fall		3	
Notes:							

Program Prerequisites (If Applicable):		Prerequisite	Comments	Semester Offered	Completion Sem/Yr	Credits	Grade

Other Courses Completed:		Comments	Semester Offered	Completion Sem/Yr	Credits	Grade

Notes:

The 12hrs of the CSP grad cert courses can also apply directly into the MSICT cybersecurity concentration;

Approval of Program of Study: _____ Date: _____
 Graduate Faculty Advisor

The above information is for planning purposes only. The responsibility for meeting all academic requirements, as officially documented in the ECU Graduate Catalog, rests with the student. Course offerings and rotations may change without notice. Please consult with your academic advisor prior to registration.

4/15/2024 af

DEPARTMENT OF TECHNOLOGY SYSTEMS GRADUATE PROGRAM GUIDE

Graduate Certificate – Lean Six-Sigma Black-Belt (Check Sheet)

Name: _____ **Banner ID:** _____ **ECU Email:** _____
Catalog: _____ **Phone:** _____ **Other Email:** _____
Intended Graduation Date: _____ **On-Campus:** ☐ **DE:** ☒ **Admission Term:** _____
Optional Additional Program: _____ **Grad Faculty Advisor:** Dr. Merwan Mehta
Checksheet updated: May 25, 2023

Program required courses (15 hours)

		Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
ITEC 6000	Statistical Applications in Tech Mgmt			Fall, Sp, Summer		3	
ITEC 6005	Lean Enterprise			Summer		3	
ITEC 6110	Quality Planning and Analysis	P/C:ITEC 6000		Fall		3	
ITEC 6112	Design of Exp for Products & Processes	P/C:ITEC 6000		Spring		3	
ITEC 6501*	Enterprise Process Improvement Project	P: ITEC 6110		Fall, Sp, Summer		3	
*Requires an industrial or business process project where certified savings or revenue increase should be shown. Students are responsible for finding and structuring the project.							
Notes:							

Program Prerequisites (If Applicable):

		Prerequisite	Comments	Semester Offered	Completion Sem/Yr	Credits	Grade

Other Courses Completed:

		Comments	Semester Offered	Completion Sem/Yr	Credits	Grade

Notes:

Approval of Program of Study: _____ **Date:** _____
 Graduate Faculty Advisor

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Graduate Certificate – Network Management Professional (Check Sheet)

Technology Systems Graduate Certificate (2024-25)

Network Management Professional

Name: _____ Banner ID: _____ ECU Email: _____
 Catalog: _____ Phone: _____ Other Email: _____
 Intended Graduation Date: _____ On-Campus: ☐ DE: ☒ Admission Term: _____
 Optional Additional Program: _____ Grad Faculty Advisor: Dr. John Pickard, pickardj@ecu.edu
 Checksheet updated: July 1, 2024

Program Requirements (12 hrs)		Prerequisite	Substitution	Semester Offered	Completion Sem/Yr	Credits	Grade
ITEC 6060	Research Methods in Technology			Fa, Sp, Su		3	
ICTN 6875	Automation Solutions for Enterprise Networks			Su25 then Spring		3	
ICTN 6880	Adv Topics in Enterprise Network Design			Fall		3	
ICTN 6885	Information Technology Management	P/C: ICTN 6875; P: ICTN 6880		Spring		3	
Notes:							

Program Prerequisites (If Applicable):		Prerequisite	Comments	Semester Offered	Completion Sem/Yr	Credits	Grade

Other Courses Completed:		Comments	Semester Offered	Completion Sem/Yr	Credits	Grade

Notes:

All 4 NMP courses (12 hrs) will also apply towards MSICT network technology mgmt. concentration;

Approval of Program of Study: _____ Date: _____
 Graduate Faculty Advisor

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