ACADEMIC & STUDENT AFFAIRS COMMITTEE
September 28, 2023
Roaden University Center, Room 282
AGENDA

I.   Call to Order

II.   Approval of Minutes for the June 22, 2023 Committee Meeting

III.   Enrollment Report

IV.   Provost's Report

V.   Student Affairs Report

VI.   Research End-of-Year Report for Fiscal Year 2023

VII.   University Advancement End-of-Year Report for Fiscal Year 2023

VIII.   Policy 217 (Student Academic Misconduct)

IX.   Expedited Letter of Notification (ELON) for the Master of Science (MS) in Industrial and Systems Engineering

X.   Other Business

XI.   Adjournment

ACADEMIC & STUDENT AFFAIRS COMMITTEE

June 22, 2023

Roaden University Center, Room 282

MINUTES

Meeting was streamed live via link found on this web page:

https://www.tntech.edu/board/board-and-board-committee-meetings.php

AGENDA ITEM 1 – CALL TO ORDER

The Tennessee Tech Board of Trustees Academic & Student Affairs Committee met on June 22, 2023 in Roaden University Center, Room 282. Chair Rhedona Rose called the meeting to order at 8:17 a.m.

Chair Rose asked Mr. Lee Wray, Secretary, to call the roll. The following members were present:

- Rhedona Rose
- Dan Allcott (virtual)
- Savannah Griffin
- Barry Wilmore

Other board members also in attendance were Trudy Harper, Thomas Lynn, Fred Lowery, Tom Jones, and Johnny Stites. A quorum was present. Tennessee Tech faculty and staff and members of the public were also in attendance.

Trustee Allcott participated via Zoom and confirmed that he could simultaneously hear and speak to the Committee members, received the Committee materials in advance of the meeting, and was alone in his location.

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AGENDA ITEM 2 – APPROVAL OF MINUTES

Chair Rose asked for approval of the minutes of the March 9, 2023 Academic & Student Affairs Committee meeting. Trustee Wilmore moved to recommend approval of the March 9, 2023 Academic & Student Affairs Committee minutes. Trustee Allcott seconded the motion. Mr. Wray called a roll call vote. The motion carried unanimously.

AGENDA ITEM 3 – PROVOST'S REPORT

Provost Bruce began her report by highlighting two students who were recognized for student awards. She recognized Clarice Kiser, the most recent recipient of the Kurt Eisen Excellence in Liberal Arts Award, and Kester Nucum who was the 2023 recipient of the prestigious Derryberry award. Next, Provost Bruce highlighted four faculty members who were the recipients of the top three faculty awards for the year. She recognized Dr. Amanda Carroll (2023 recipient of the Outstanding Faculty Award), Dr. Mohamed Mahmoud (2023 recipient of the Caplenor Faculty Research Award), and both Dr. Collen Mestayer and Dr. Indranil Bhattacharya (2023 recipients of the Outstanding Faculty Award in Teaching).

Provost Bruce concluded her report by recognizing faculty retirements, noting that together these nine faculty members have given almost 250 years of service to Tennessee Tech.

AGENDA ITEM 4 – ENROLLMENT UPDATE

Karen Lykins, Vice President for Enrollment and Communication, presented projections for fall 2023 enrollment. In her report she shared trends on overall enrollment, gave a current snapshot of today's new first-time freshmen registration, and explained what has been learned about prospective students and how they are making their decisions.

Ms. Lykins began her report by sharing the undergraduate enrollment headcount. Incoming new first-time freshman was a little down compared to this date last year, while continuing sophomore numbers were significantly higher than last year. The new first-time freshmen headcount was down 63 from Fall 2022 when looking at a snapshot of the same day. She shared that, to date, more than 2,045 first-time freshmen have registered for Student Orientation, Advisement, and Registration (SOAR) and 972 Presidential Scholars have registered, which are both a little down from last year as well. The number of admissions cancellations has increased 15% from last year. Ms. Lykins and her team have been looking at the reasons given for these cancellations; which included proximity, Tennessee promise, financial aid, and other. Ms. Lykins remarked that knowing these reasons, gives the opportunity for marketing strategies.

Next Ms. Lykins showcased what the incoming freshman class currently looks like. The average GPA is 3.68 with more than 700 incoming students possessing a 4.0. Additionally, the incoming

class includes five National Merit Finalists and is slightly more racially diverse than the previous freshman class and current student body even though more work is going into improving these numbers.

Ms. Lykins concluded her presentation by having Dewayne Wright, the Director of Strategic Planning and Data, give some information about the enrollment data analysis efforts. He gave some updates regarding the Tech Tomorrow Strategic Plan that included Dr. Tom Timmerman and colleagues looking at student retention, examination of the free applications September effect, examination of student recruitment yield using various milestones to develop a predictive model for recruitment efforts, and developing a database to combine internal and external data about each Tennessee county to aid with strategic planning, and finally building and refining the tracking efforts started last year.

AGENDA ITEM 5 – ACADEMIC PROGRAM UPDATE

Provost Bruce shared an update on Tennessee Tech's academic programs in terms of accreditations, additions, deletions, and major revisions. She informed the Board that the year was very successful in terms of accreditations and program reviews. She also shared that there were 5 new certificate programs, 20 new/revised concentrations, 5 new/revised minors, 4 revised degree programs, and 2 new degree programs. She also informed members that the official academic program inventory, which is the official inventory of Tennessee Tech's academic program offerings as listed on the Tennessee Higher Education Commission (THEC) website, was included in the Board book.

AGENDA ITEM 6 – ACADEMIC PROGRAM MODIFICATION (APM) FOR M.A. IN LEARNING DESIGN & TECHNOLOGY

Provost Bruce informed the Board that the College of Education proposes to establish a Master of Arts (M.A.) in Learning Design and Technology. She stated that if approved, this would elevate one concentration under the M.A. in Curriculum and Instruction to a new stand-alone M.A. in Learning Design and Technology. Through her presentation, she showed members that the current M.A. in Curriculum and Instruction degree program has twelve concentrations, the majority of which are designed to serve professionals working in elementary, secondary, and higher education settings. She further explained, that of the existing concentrations within the current M.A. in Curriculum and Instruction, the Educational Technology concentration has significant potential to produce graduates who can serve industry needs. Elevating this particular concentration to a stand-alone degree program is expected to improve student recruiting efforts and enhance career opportunities for our graduates. She also mentioned that this would require very nominal financial resources, since it is currently an offered concentration.

Trustee Wilmore moved to send the Academic Program Modification (APM) to the full Board

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for approval and to place it on the Board's consent agenda. Trustee Allcott seconded the motion. The motion carried unanimously.

AGENDA ITEM 7 – NEW ACADEMIC PROGRAM PROPOSAL (NAPP) FOR PH.D. IN HIGHER EDUCATION

Provost Bruce shared the College of Education's proposal to establish a new Doctor of Philosophy (Ph.D.) degree in Higher Education. She reminded the members that the Board of Trustees approved the first phase of the proposal (the Letter of Notification) in 2021 and that if approved by the Board of Trustees, this second phase, the New Academic Program Proposal (NAPP) will be presented to the Tennessee Higher Education Commission (THEC) for final approval.

She explained that the proposed Ph.D. program in Higher Education is designed for candidates pursuing careers using cutting-edge data analytics to serve as academic faculty, university administrators, policy analysts, and educational researchers in higher education institutions across the state and nation. The program features an emphasis on innovation in instructional technologies and applications of data science-based decision making, which would carry on Tech's tradition of leading innovation and STEM-driven curricula.

Next Dr. Bruce shared the results of the feasibility study, which showed anticipated enrollment projections of 7 in year 1 and growing to approximately 29 by year 5. She also informed that the reoccurring cost of the program would be the cost of two faculty positions. The new costs associated with the program would gradually be shifted to the College of Education and the Department of Curriculum and Instruction as increased tuition revenue replaces the start-up funds provided by the University.

Trustee Wilmore moved to send the NAPP for the Ph.D. in Higher Education to the full Board for approval and to place it on the Board's consent agenda. Trustee Allcott seconded the motion. The motion carried unanimously.

AGENDA ITEM 8 – ATHLETICS UPDATE

President Phil Oldham reviewed the 2022-2023 year in athletics. He started his presentation by mentioning that Tennessee Tech competes in 15 varsity sports at the National Collegiate Athletic Association (NCAA) D1 level. He stated that academically, this is the 29th consecutive semester that all of the student athletes had better than a 3.0 GPA. He also explained that competitively it was a very good year as well, with 2 conference championship teams (women's soccer and women's basketball). Women's basketball won the Ohio Valley Conference (OVC) championship and their first-round game in the NCAA tournament, which allowed Tennessee Tech to have its highest ever finish in the OVC's commissioners cup (finishing second). He also mentioned that one third of Tennessee Tech's teams also won the conference sportsmanship

award, which led to Tennessee Tech winning the overall sportsmanship award.

Next, President Oldham discussed investments in athletics that the university is currently making. He mentioned several areas in facilities including improving the basketball locker rooms, continuing plans on Tucker stadium, improving restroom facilities at the Hooper Eblen Center, adding turf to the baseball and softball fields, and baseball clubhouse repairs to name a few.

President Oldham concluded his presentation by giving a few updates on the OVC and the NCAA. The OVC is continuing to look at expansion of the conference and recently added Western Illinois. He stated that this brings the current number to eleven members. He also stated that nationally, with the NCAA, there was a leadership change. Charlie Baker became the new President of the NCAA earlier this year, which he indicated should bring some exciting and promising changes.

AGENDA ITEM 9 – CAMPUS SAFETY REPORT

Chief of Police Tony Nelson informed the Board that each year the Tennessee Bureau of Investigations (TBI) publishes a crime on campus report covering various categories. During his presentation he highlighted points from the report for crime at Tennessee Tech for 2022. He also informed Board members that the full report for Tennessee Tech as well as the other Tennessee four-year public universities was included in Diligent. His overview, included that for 2022 Tennessee Tech had 122 reported crimes from 10 of the 18 categories. He stated that the most reported crimes included property crimes, consistent with previous years. Property crimes include theft and vandalism, which accounted for 88 of the 123 crimes. Chief Nelson noted that the primary reason for this is the fact that Tennessee Tech is an "open" campus and pointed out that most of the crimes were not committed by students.

Nelson concluded his presentation by giving updates on the campus police department. He informed Board members that they have begun their accreditation process, which is a 36-month process. He also gave some staffing updates, sharing that two additional personnel were hired to help with the accreditation process and the operating system was updated. He also informed the members that staffing has improved since 2022, partly due to a compensation study that was done that allowed salaries to be raised. Currently, all positions but one has been filled. He pointed out that this improvement in staffing showed a decrease in crimes at a rate of 34.6%.

AGENDA ITEM 10 – OTHER BUSINESS

There was no other business.

AGENDA ITEM 11 – ADJOURNMENT

There being no further business, the Academic & Student Affairs Committee adjourned at 9:44 a.m.

Approved,

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Lee Wray, Secretary

3.1

Agenda Item Summary

Date: September 28, 2023

Agenda Item: Enrollment Report

☐ **Review** ☐ **Action** ☒ **No action required**

PRESENTER(S): Karen Lykins

PURPOSE & KEY POINTS: Vice President for Enrollment and Communication, Karen Lykins, will provide an update on enrollment numbers for the Fall 2023 semester and discuss academic preparedness of the incoming class (average ACT, number of 4.0 GPA students, etc.) and their potential for academic success.

4.1

Agenda Item Summary

Date: September 28, 2023

Agenda Item: Provost's Report

☐ **Review**   ☐ **Action**   ☒ **No action required**

PRESENTER(S): Provost Lori Bruce

PURPOSE & KEY POINTS: Provost Bruce will provide a snapshot of Academics for Fall 2023 (e.g. number of courses taught, distribution of onground/online, etc.); and provide a report on Academic Student Success (e.g. student aggregate GPA, first-time-freshman retention rate, graduation rates, number of degrees awarded, etc.).

Provost Bruce will also highlight the impact of out-of-classroom activities and how programs like the Study Abroad program impact student success.

5.1

Agenda Item Summary

Date: September 28, 2023

Agenda Item: Student Affairs Report

☐ **Review**   ☐ **Action**   ☒ **No action required**

PRESENTER(S): Dr. Cynthia Polk-Johnson

PURPOSE & KEY POINTS: Dr. Polk-Johnson, Vice President for Student Affairs, will provide an update about student success beyond the classroom by highlighting key programs and services that align with the Tech Tomorrow Plan, a high-level overview of accomplishments for the 2022-2023 academic year, and future priorities for Student Affairs.

Agenda Item Summary

Date: September 28, 2023

Agenda Item: Research End-of-Year Report for Fiscal Year 2023

☐ **Review**   ☐ **Action**   ☒ **No action required**

PRESENTER(S): Dr. Carl A. Pinkert

PURPOSE & KEY POINTS: Dr. Carl A. Pinkert, Interim Vice President for Research, will provide an update from the Office of Research and Economic Development, including an end-of-year report for fiscal year 2023 and highlight research activities' impact on student success.

7.1

Agenda Item Summary

Date: September 28, 2023

Agenda Item: University Advancement End-of-Year Report for Fiscal Year 2023

☐ **Review**   ☐ **Action**   ☒ **No action required**

PRESENTER(S): Dr. Kevin Braswell

PURPOSE & KEY POINTS: Dr. Braswell, Vice President for University Advancement, will provide an update from University Advancement, including an end-of-year report for fiscal year 2023 and highlight the impact of university advancement on student success.

Agenda Item Summary

8.1

Date: September 28, 2023

Agenda Item: Policy 217 (Student Academic Misconduct)

☐ **Review**　　　☒ **Action**　　　☐ **No action required**

PRESENTER(S): Provost Lori Bruce

PURPOSE & KEY POINTS:
Recently there have been significant advances in Generative Artificial Intelligence (AI) platforms such as ChatGPT, Bing, Google's Bard, Microsoft Designer and Dall-E 2. Considering the substantive impact of these AI platforms on higher education, the Provost tasked two groups of faculty and students to examine the AI impact at Tennessee Tech. These two groups were the standing University Academic Misconduct Committee (composed of faculty representatives from each College, student representatives, and the Senior Associate Provost) and an ad hoc AI Task Force (composed of nine faculty representatives from the colleges, an Associate Provost, an Associate Dean, the university's Chief Information Officer, and multiple undergraduate and graduate students).

In the summer of 2023, these two committees jointly recommended an immediate revision to Policy 217 – Student Academic Misconduct, so that language concerning academic integrity with regards to the use of Generative AI platforms could be included in the policy prior to the start of the Fall 2023 semester. Thus, there was a need for an out-of-cycle approval of revisions to Policy 217. Per Policy 101, the President approved the revisions to Policy 217 during the summer of 2023 with the contingency that these revisions would be brought before the Board of Trustees in the September 2023 Board meeting.

This academic year, a comprehensive review of Policy 217 is being undertaken, with all current and proposed revisions to be taken through the normal shared governance processes.

Tennessee Technological University
Policy No. 217

Student Academic Misconduct Policy
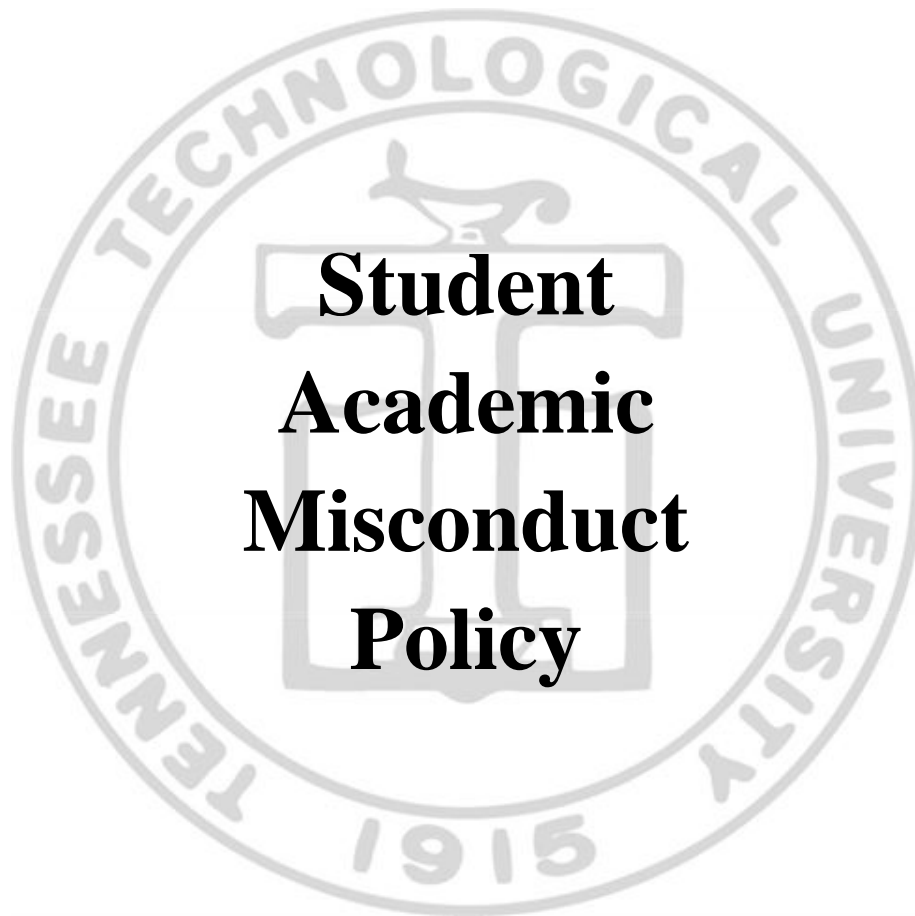
Effective Date: August 17, 2017

Date(s) Revised: July 31, 2023

Policy No: 217
Policy Name: Student Academic Misconduct Policy

8.2

I.   Purpose

This policy establishes the policies and procedures for addressing Academic Misconduct at Tennessee Tech.

II.   Review

This policy will be reviewed every four years or whenever circumstances require review, whichever is earlier, by the Senior Associate Provost with recommendations for revision presented to the Academic Council, University Assembly, and the Board of Trustees.

III. Guiding Principles in Developing this Policy

A. Academic integrity is at the foundation of the educational process.

Maintaining high standards of academic integrity in every class at Tennessee Tech is critical to the reputation of Tennessee Tech, its students, alumni, and the employers of Tennessee Tech graduates.

B. All Students have the right to due process as described in this policy when charged with Academic Misconduct and may not be penalized with respect to grades or other means without being informed of the right to due process.

C. Throughout this document the Instructor of the course has the final say in approving or not approving the sources used for course assignments, including generative artificial intelligence (AI).

IV. [1]Definitions and Examples of Academic Misconduct

A. "Academic Misconduct" – any action or attempted action that may result in creating an unfair academic advantage for oneself or an unfair academic advantage or disadvantage for any other member or members of the academic community. This includes a wide variety of behaviors such as cheating,

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[1] The definitions of Academic Misconduct in this section are from "Definitions & Examples of Academic Misconduct," Center for Student Conduct, Division of Student Affairs, University of California, Berkeley and are used with permission.

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plagiarism, creating unapproved content using generative artificial intelligence (AI), altering academic documents or transcripts, gaining access to materials before they are intended to be available, and helping a friend to gain an unfair academic advantage. Individual departments at Tennessee Technological University may have differing expectations for Students, so Students are responsible for seeking out information when unsure of what is expected.

Below are some basic definitions and examples of academic misconduct.

Please note that this list is not exhaustive.

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1. Cheating

   Cheating is defined as fraud, deceit, or dishonesty in an academic assignment, or using or attempting to use materials, or assisting others in using materials that are prohibited or inappropriate in the context of the academic assignment in question, such as:

   a. Copying or attempting to copy from others during an exam or on an assignment.

   b. Communicating answers with another person during an exam.

   c. Preprogramming a calculator to contain answers or other unauthorized information for exams.

   d. Using unauthorized materials, prepared answers, written notes, or concealed information during an exam.

   e. Allowing another person or an unapproved resource, including generative artificial intelligence (AI), to do an assignment or portion of an assignment for oneself, including the use of a commercial term-paper service.

   f. Submitting the same assignment or a substantial portion of the assignment without prior approval of all the Instructors involved, i.e., self plagiarism.

   g. Collaborating on an exam or assignment with any other person without prior approval from the Instructor.

   h. Taking an exam for another person or having someone take an exam for oneself.

2. Plagiarism

   Plagiarism is defined as use of intellectual material produced by another person or an unapproved resource without acknowledging its source, for example:

   a. Wholesale copying of passages from works of others into one self's homework, essay, term paper, or dissertation without acknowledgment.

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  b. Use of the views, opinions, or insights of another without acknowledgment.

  c. Paraphrasing of another person's characteristic or original phraseology, metaphor, or other literary device without acknowledgment.

  d. The unapproved use of generative artificial intelligence (AI) to create content that is submitted as one's own.

3. Class Materials

  a. Removing, defacing, or deliberately keeping from other Students library materials that are on reserve for specific classes.

  b. Contaminating laboratory samples or altering indicators during a practical exam, such as moving a pin in a dissection specimen for an anatomy class.

  c. Selling, distributing, website posting, or publishing class lecture notes, handouts, readers, recordings, or other information provided by an Instructor, or using them for any commercial purpose without the express permission of the Instructor.

4. False Information and Representation, Fabrication or Alteration of Information

  a. Furnishing false information in the context of an academic assignment.

  b. Failing to identify oneself honestly in the context of an academic obligation.

  c. Fabricating or altering information or data and presenting it as legitimate.

  d. Providing false or misleading information to an Instructor or any other University official.

  e. Submitting an assignment prepared by another person or resource other than the student responsible for the assignment.

  f. Creating content utilizing an unapproved resource, including generative artificial intelligence (AI).

5. Theft or Damage of Intellectual Property

  a. Sabotaging or stealing another person's assignment, book, paper, notes, experiment, project, electronic hardware or software.

  b. Improper access to, or electronically interfering with, the property of another person or the University via computer or other means.

  c. Obtaining a copy of an exam or assignment prior to its approved release by the Instructor.

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6. Alteration of University Documents

    a. Forgery of an Instructor's signature on a letter of recommendation or any other document.

    b. Submitting an altered transcript of grades to or from another institution or employer.

    c. Putting one's name on another person's exam or assignment.

    d. Altering a previously graded exam or assignment for purposes of a grade appeal or of gaining points in a re-grading process.

8.2

B. "Provost" - the Provost of Tennessee Tech University (or the Provost's designated representative).

C. "Dean" – the Dean (or the Dean's designated representative) of the College (or School) offering the class in which the academic misconduct is charged to have occurred.

D. "Dean of Major"– the Dean (or the Dean's designated representative) of the College (or School) in which the Student is majoring.

E. "Department Chair" – Chair of the Student's major department.

F. "Instructor" – the person listed as the 'Instructor of Record' for the class. The instructor has the final say in approving or not approving the sources used for course assignments, including generative artificial intelligence (AI).

G. "Student" – for the purposes of this policy, any person who is admitted and/or registered for study at Tennessee Tech for any academic period. This shall also include any period of time that the student may be completing the Class Requirements to clear an "Incomplete" grade, but not otherwise registered for classes.

H. "Chairperson" or "Chair" – Chairperson of the College or University Academic Misconduct Committee, as applicable.

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I. "Member" – Faculty or Student appointed as a member or alternate member of a College or the University Academic Misconduct Committee.

J. "Class Requirement" – Any assignment, project, exam, quiz, or assessment tool regardless of its name, that is used in determining the Student's grade in the class.

K. "Business Days" – Days in which the University is open, including the Fall, Spring, and Summer terms, and any intersession days.

8.2

L. "Official TTU Email" – An email sent from an official Tennessee Tech email account to a student's official Tennessee Tech email account. The subject line should bear the inscription (in capital letters): "ACADEMIC MISCONDUCT CHARGE. TIME SENSITIVE RESPONSE REQUIRED."

M. "College Committee" – The Academic Misconduct Committee of the College (or School) in which the class is offered.

N. "University Committee" – The Academic Misconduct Committee of the University

O. "Reprimand" – A formal warning to the student issued by the Provost upon the recommendation of the University Academic Misconduct Committee.

P. "Probation" – Placement of the student in a "warning status" that can lead to automatic suspension or expulsion if additional academic misconduct occurs.

Q. "Suspension" – Suspension of the student from the University for a specified number of academic terms (Fall and Spring), after which the student may apply for readmission to the University.

R. "Expulsion" - Permanent dismissal from the University.

S. "Class-level Sanction" – Sanctions that are related to the grade that a student is awarded in a specific class. Examples include, but are not limited to: Reduced grade for the Class Requirement, "F" or Zero for the Class Requirement, and/or an "F" grade for the class.

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T. "University-level Sanction" – Sanctions that potentially affect a student's standing at the University. These are: Reprimand, Probation, Suspension, and Expulsion.

V. Responsibilities

A. Instructor Responsibility

1. The Instructor has the primary responsibility for maintenance of academic integrity, including filing a charge of Academic Misconduct when s/he reasonably believes such has occurred.

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2. The Instructor shall provide in the class syllabus a definition of what resources are allowed and/or what resources are not allowed for completion of Class Requirements, including any differences between resources for in-class and outside-of-class Requirements. It is particularly important to include items on the list in which uncertainty on the part of the students might reasonably exist.

3. The Instructor may impose additional restrictions/allowances during the class for a specific Class Requirement, but must clearly communicate any changes to the Students.

4. Before penalizing a Student for Academic Misconduct, the Instructor must file a charge of Academic Misconduct as per this policy to ensure that the student is given the due process right to appeal. The University's Grade Appeal Policy is not to be used in lieu of the Academic Misconduct Policy.

5. In cases where an Instructor reasonably believes that the integrity of a Class Requirement has been compromised, but is unable establish by a preponderance of the evidence the parties involved in the matter, the Instructor may discard the results of the original assignment; but only if the Instructor re-administers the exam or assignment to the entire class.

6. The Instructor has the final say in approving or not approving the sources used for course assignments, including generative artificial intelligence (AI).

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B. Student Responsibilities

    1. The Student is responsible for understanding and abiding by this policy, including reading Academic Conduct information provided in the class syllabus and asking for clarification if unclear about what is and is not allowed in the production of all Class Requirements.

    2. The Student is responsible for following any instructions related to additional restrictions/allowances for a specific Class Requirement provided by the Instructor and asking for clarification if necessary. In the event of a class absence, the burden is on the Student to ask the Instructor what, if any, restrictions/allowances for a specific Class Requirement were provided during the missed class.

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VI. Procedures for Filing a Charge of Academic Misconduct

    A. An Instructor must follow the procedures outlined in this policy if s/he believes a charge of Academic Misconduct is warranted. The Instructor cannot impose a grade penalty for academic misconduct without filing a formal charge of academic misconduct.

    B. Step 1 - The Instructor shall document in writing the charge, including details of the evidence of Academic Misconduct, a recommendation related to the appropriate penalty and the Student's right to a hearing [217 Academic Misconduct Charging Document Template](#)

    C. Step 2 - The Instructor must send the Charging Document via Official TTU Email to the Student, the Department Chair, Dean, the Provost's Office, the Registrar, the Dean of Major and to the Office of International Education, when applicable. The Charging Document must be sent within five (5) Business Days of the Instructor's determination that Academic Misconduct has occurred, absent good cause.

        1. For the purposes of this policy, an "Official TTU Email" means an email sent from an official Tennessee Tech email account to a student's official Tennessee Tech email account. The subject line should bear the inscription (in capital letters): "ACADEMIC MISCONDUCT CHARGE. TIME SENSITIVE RESPONSE REQUIRED."

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2. Possible sanctions by the Instructor as a penalty for academic misconduct may include, but are not limited to, the following class-level sanctions:

   a. Reduced grade for the Class Requirement,
   b. "F" or Zero for the Class Requirement,
   c. "F" grade for the class,

3. In addition, the Instructor may also recommend that a University-level sanction be imposed, which include:

   a. Reprimand,
   b. Probation,
   c. Suspension,
   d. Expulsion.

4. If the Instructor recommends a University-level sanction as part of the penalty, the College Academic Misconduct Committee must review and support the recommendation in order for it to proceed to the University Academic Misconduct Committee. Step 7.

5. Once an Instructor files a charge of Academic Misconduct, the Registrar will place a "no-drop" hold on the Student's registration in the class so that the Student cannot withdraw from the class as an attempt to avoid the charge of Academic Misconduct. If the deadline for submission of grades to the Registrar occurs prior to the resolution of the charge of Academic Misconduct, the Instructor shall enter a grade of "I", which will be updated when the final outcome of the appeal process is known.

D. Step 3 – The Student's Options after a Charge of Misconduct is Filed

6. Option 1: Student Does Not Dispute the Charge

   a. If the Student does not file an [217 Academic Misconduct Request for Hearing Form](#) within five (5) Business Days of receipt of the Charging Document, absent good cause, the Dean's Office shall inform the Instructor, the Provost, the Dean of Major, the Department Chair, and the

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Office of International Education, when applicable that the Charge of Academic Misconduct has not been appealed and the Instructor's class-level sanctions stand.

    i.   Non-appeal of the Academic Misconduct Charge by the Student does not prevent further review by the College Committee, the College Committee of the Student's Major, or the Provost, for evidence of repeat or particularly egregious cases of academic misconduct. Requests for additional sanctions will be sent to the Provost's Office for possible referral to the University Academic Misconduct Committee for the imposition of University-level sanctions. Likewise, if the Instructor has recommended University-level sanctions in the Charging document, these will be considered by the College Committee (see Step 6), whether or not the student appeals the charge.

b. A Student who does not file a timely appeal of a Charge of Academic Misconduct will not be allowed to use the TTU Grade Appeal policy to appeal a reduced class grade.

c. The process either ends here or proceeds either to Step 6 or 7, as previously indicated.

7. Option 2: The Student Disputes the Charge

    a. The Student must file an appeal with the Dean using a

       [Academic Misconduct Request for Hearing Form](#) within five (5) Business Days after receipt of the Charging Document, absent good cause.

    b. For the purposes of this policy, "receipt" means the date the Instructor sent the Charging Document via Official TTU Email to the Student's Tennessee Tech email account.

    c. The Process continues to Step 4.

E. Step 4 - College Academic Misconduct Committee Procedures - If the Student files a timely Request for Hearing, the Dean shall notify the College Academic Misconduct Committee of the need to meet to hear the appeal.

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F. Step 5 - The Dean (or the College Committee Chairperson) shall select a suitable date, time, and location for the hearing and then notify the Committee Members, Instructor, and Student of the time and place of the hearing. Whenever possible, a date and time should be selected that enable the Instructor and Student to attend the hearing in person.

G. Step 6 – The appeal hearing shall be held within eight (8) Business Days after the Request for an Appeal Hearing is received, dependent on the availability of the Instructor and the Student, and absent other good cause. A timely hearing is important to the due process of the Student and the Instructor.

8.2

1. The Instructor and Student shall appear before the College Committee in person to present their cases. In the event one or the other cannot attend, the Instructor and/or Student may present their cases in writing.

2. The decision of the College Committee is to be communicated by the Dean's Office via Official TTU Email to the Student, Instructor, Provost, Registrar, Department Chair, and Dean of Major (if not the same as the Dean), as soon as practical, but not later than two (2) Business Days of the hearing, absent good cause.

3. In the case that the College Committee finds the preponderance of evidence does not support the charge of academic misconduct, the Registrar removes the "no-drop" hold from the course, and the student may withdraw from the course at that point, if the Student so chooses. If the College Committee supports the Instructor's Charge, the Student may not withdraw from the class.

4. If the College Committee finds that the preponderance of evidence supports the charge, the College Committee may then either (1) support the sanctions as originally imposed by the Instructor, or (2) recommend reduced sanctions to the Instructor. In addition, in the case of repeat or particularly egregious misconduct, the College Committee can also recommend that a University-level sanction be added to the charge. The College Committee must include recommendations for reduced or additional sanctions are to be added to the written documentation sent forward to the Provost.

5. If the College Committee supports the Instructor's Charge, the Student may not use the TTU Grade Appeal Process to appeal the Charge. If the

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Committee does not support the Charge but the Instructor persists, then the Student may appeal the grade using the Grade Appeal Policy.

6. For Class-level sanctions, the decision of the College Committee is final; these cannot be appealed to the University Academic Misconduct Committee.

7. The process ends here or moves to the University Academic Misconduct Committee as described in Step 7, if:

   a. If the Instructor's recommendation includes a University-level sanction (e.g., reprimand, probation, suspension, or expulsion) and the College Committee supports that recommendation, or

   b. The College Committee elects to recommend a University-level sanction in addition to the Instructor's class-level sanction.

8. If the College Committee finds the preponderance of evidence does not support the charge of academic misconduct, the College Committee shall recommend to the Instructor that the charge of academic misconduct be withdrawn, and that s/he determine the Student's grade in accordance with the stated class policy without prejudice or penalty associated with the alleged misconduct.

   If the Instructor declines to accept the Committee's recommendation, then:

   a. The Student may appeal the Charge to the University Committee; and/or
   b. The Student may elect to withdraw from the class at this time. The withdrawal date will be effective at the date the original hold was placed by the Registrar; and/or
   c. The Student may appeal the Instructor's final grade according to the Grade Appeal Procedure.

H. Step 7 - University Academic Misconduct Procedures

   1. The University Academic Misconduct Committee ("University Committee") is the sole committee designated to adjudicate University-level sanctions

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(reprimand, probation, suspension, or expulsion) related to charges of Academic Misconduct.

2. Based on the recommendation of the College Academic Misconduct Committee, the Academic Misconduct Committee of the College of the Student's Major (if different than the college in which the charge is filed), or the Provost, an academic misconduct case can be referred to the University Committee via the Provost's Office for University-level sanctions. In cases where the Charging Document does not include information related to additional penalties, the Student must receive written notification of the additional sanctions being recommended to the University Committee.

I. Step 8 – The Provost shall notify the Student via Official TTU Email of any recommendation to seek additional Penalties, whether from a College Committee or the Provost. The student will also be advised of his/her right of appeal.

J. Step 9 – A Student who contests the Charge of Academic Misconduct before the University Committee has two options (1 or 2, below):

1. In cases where the penalty sought is suspension or expulsion, the Student may elect to have the case disposed of under the Uniform Administrative Procedures Act (UAPA) in accordance with applicable contested case procedures. The Tennessee Tech process ends and the UAPA process begins.

2. In cases to be heard by the University Academic Misconduct Committee, the process will proceed as per Steps 10-13 below.

3. A Student charged with Academic Misconduct who elects to have the case disposed of under Tennessee Tech Procedures must execute a written waiver of his/her right to a disposition of the case under the Uniform Administrative Procedures Act and send it via Tennessee Tech email to the Provost. [217 Academic Misconduct Waiver of UAPA Hearing](#)

K. Step 10 - The Office of the Provost shall notify the Chairperson of the University Academic Misconduct Committee of the need for the University Committee to meet to hear the appeal.

L. Step 11 - The Provost shall, after consultation with the

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University Committee Chairperson, notify the Student, the Instructor, the Department Chair, the Dean, the Dean of Major, and University Committee members of the date, time and place of the hearing. Whenever possible, a date and time should be selected that enable the Instructor and Student to attend the hearing in person. In cases where the charge is being brought forward by a College other than the Student's Major, the Dean of the College of Major may elect to attend the University Committee Hearing as an observer.

M. Step 12 - The University Committee hearing shall be held within ten (10) Business Days from the receipt of the request for an appeal by the Provost's Office, dependent on the availability of the Instructor and the Student, and absent other good cause. A timely hearing is important to the due process of the Student and the Instructor.

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  4. The University Committee shall require the parties to appear in person, absent good cause, to present their cases. In the event one or more parties cannot attend, the party may present their cases in writing.

  5. The Dean shall present the charge of Academic Misconduct to the University Committee.

  6. If the University Committee finds that the preponderance of the evidence, including any prior incidents of Academic Misconduct, warrants additional penalties, the University Committee may then impose a University-level sanction (reprimand, probation, suspension, or expulsion).

  7. If the University Committee finds that the preponderance of evidence, including consideration of any prior incidents of Academic Misconduct, does not support additional penalties, the recommendation of the College Committee still stands, but additional penalties are not imposed.

  8. The decision of the University Committee is final.

N. Step 13 - The University Committee shall communicate its decision via Official TTU Email to the Student, the Instructor, the Provost, the Department Chair, the Dean, the Dean of Major, and the Provost's Office, as soon as possible, but no later than two (2) Business Days of the hearing, absent good cause.

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VII.   Committee Structure

A. College Academic Misconduct Committee

1. A college-level Academic Misconduct Committee shall be established in each of the following academic units:

a. College of Agriculture and Human Ecology;

b. College of Arts and Sciences;

c. College of Business Administration;

d. College of Education (including ROTC and Crafts Center);

e. College of Engineering;

f. College of Fine Arts;

g. College of Interdisciplinary Studies; and

h. School of Nursing.

2. Membership

a. The College Academic Misconduct Committee of each College/School, with the exception of the School of Nursing, and the College of Agriculture and Human Ecology, shall consist of

    i One (1) Faculty Member and one (1) Faculty Alternate from each department within the College, elected for a three (3) year term by the department, and

    ii One (1) Student Member and at least one (1) Student Alternate majoring within the College. The Student Members and Alternates are nominated by the President of the Student Government Association (SGA) and appointed by the President of the University for a one (1) year term. At least one Student of the nominated Students should be available during the Summer and/or between terms in case it is necessary to hold meetings of the College Committee during these periods. The Student Members must sign a Confidentiality Agreement indicating that they will abide by FERPA regulations regarding the confidentiality of the academic misconduct proceedings and information provided to them as part of the proceedings.

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b. The College Academic Misconduct Committees for the School of Nursing shall consist of

    i   Three (3) Faculty members elected for three (3) year terms, and

    ii One (1) Student Member and at least one (1) Student Alternate as described in Section VII.A.2.ii above.

c. The College Academic Misconduct Committee for the College of Agriculture and Human Ecology shall consist of

    i   Four (4) Faculty Members and two (2) Alternates elected for three (3) year terms, and

    ii One (1) Student Member and at least one (1) Student Alternate as described in Section VII.A.2.ii above.

3. Administrative Procedures

a. The College Academic Misconduct Committee Chairperson and Alternate Chairperson shall be elected annually by the Committee members.

b. The required quorum depends on whether or not a University-level sanction is being considered as part of the sanction. (1) If a University-level sanction is being considered, a quorum requires a majority of members on the Committee. (2) If only class-level sanctions are being considered, a quorum requires three members of the Committee. In both cases, the quorum must include a Student Member (or Student Alternate), and the Committee Chair (or Alternate).

c. In cases where a Faculty Member of the College Academic Misconduct Committee is the Instructor charging the Student with academic misconduct, the Faculty member recuses her/him-self from the Committee.

d. In cases where the Chairperson of the College Academic Misconduct Committee is the Instructor charging the Student with academic misconduct, the Chairperson recuses her/him-self and the Alternate Chairperson serves as the Chair.

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  e. The College Dean shall provide the support services for the College Academic Misconduct Committee.

B. University Academic Misconduct Committee

 1. Membership

  The University Academic Misconduct Committee shall consist of:

  a. The Chairperson or Alternate Chairperson of each College Academic Misconduct Committee, and

  b. One (1) Student Member and at least one (1) Student Alternate majoring within the associated College. The Student Members and Alternates are nominated by the President of the Student Government Association (SGA) and appointed by the President of the University for a one (1) year term. At least one Student of the nominated Students should be available during the Summer and/or intersession terms in case it is necessary to hold meetings of the College Committee during these periods. The Student Members must sign a Confidentiality Agreement indicating that they will abide by FERPA regulations regarding the confidentiality of the academic misconduct proceedings and information provided to them as part of the proceedings.

 2. Administrative Procedures

  a. The Chairperson and the Alternate Chairperson of the University Academic Misconduct Committee shall be elected annually by the Committee.

  b. A quorum shall consist of five (5) members, including the Chairperson or Alternate Chairperson, the representative (or alternate) from the College in which the alleged offense occurred, and the Student Member or the Student Alternate.

  c. In cases where the College Chairperson is making the charge against the Student, the Alternate College Chairperson shall serve on the University Academic Misconduct Committee.

  d. In cases where the Chairperson of the University Academic Misconduct Committee is making the charge against the Student, the Alternate

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Chairperson of the University Academic Misconduct Committee shall serve as Chairperson.

e. The Provost shall provide the support services for the University Academic Misconduct Committee.

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VIII. Citation of Authority

T.C.A. § 49-8-203(a)(1)(D); Tenn. Comp. R. & Reg. 0240-09-01 et seq.

Approved by:

Administrative Council: February 22, 2017; will be submitted to Fall 2023 meeting

University Assembly: April 19, 2017; will be submitted to Fall 2023 meeting

TTU Board of Trustees: August 17, 2017; pending Board approval

President on July 20, 2023, pursuant to Policy 101, Section VII.A.

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Tennessee Technological University
Policy No. 217

Student Academic Misconduct Policy

Effective Date: August 17, 2017

Policy No: 217

Policy Name: Student Academic Misconduct Policy

I.   Purpose

This policy establishes the policies and procedures for addressing Academic Misconduct at Tennessee Tech.

II.   Review

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This policy will be reviewed every four years or whenever circumstances require review, whichever is earlier, by the Senior Associate Provost with recommendations for revision presented to the Academic Council and University Assembly.

III. Guiding Principles in Developing this Policy

A. Academic integrity is at the foundation of the educational process.

Maintaining high standards of academic integrity in every class at Tennessee Tech is critical to the reputation of Tennessee Tech, its students, alumni, and the employers of Tennessee Tech graduates.

B. All Students have the right to due process as described in this policy when charged with Academic Misconduct and may not be penalized with respect to grades or other means without being informed of the right to due process.

C. Throughout this document the instructor of the course has the final say in approving or not approving the sources used for course assignments, including generative artificial intelligence (AI).

IV. [1]Definitions and Examples of Academic Misconduct

A. "Academic Misconduct" – any action or attempted action that may result in creating an unfair academic advantage for oneself or an unfair academic advantage or disadvantage for any other member or members of the academic community. This includes a wide variety of behaviors such as cheating,

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[1] The definitions of Academic Misconduct in this section are from "Definitions & Examples of Academic Misconduct," Center for Student Conduct, Division of Student Affairs, University of California, Berkeley and are used with permission.

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plagiarism, <u>creating unapproved content using generative artificial intelligence (AI),</u> altering academic documents or transcripts, gaining access to materials before they are intended to be available, and helping a friend to gain an unfair academic advantage. Individual departments at Tennessee Technological University may have differing expectations for Students, so Students are responsible for seeking out information when unsure of what is expected.

Below are some basic definitions and examples of academic misconduct.

Please note that this list is not exhaustive.

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1. Cheating

   Cheating is defined as fraud, deceit, or dishonesty in an academic assignment, or using or attempting to use materials, or assisting others in using materials that are prohibited or inappropriate in the context of the academic assignment in question, such as:

   a. Copying or attempting to copy from others during an exam or on an assignment.

   b. Communicating answers with another person during an exam.

   c. Preprogramming a calculator to contain answers or other unauthorized information for exams.

   d. Using unauthorized materials, prepared answers, written notes, or concealed information during an exam.

   e. Allowing <u>another person or an unapproved resource, including generative artificial intelligence (AI),</u>~~others~~ to do an assignment or portion of an assignment for oneself, including the use of a commercial term-paper service.

   f. Submi<u>tting</u>~~ssion of~~ the same assignment ~~for more than one class~~ <u>or a substantial portion of the assignment</u> without prior approval of all the instructors involved<u>, i.e., self plagiarism</u>.

   g. Collaborating on an exam or assignment with any other person without prior approval from the instructor.

   h. Taking an exam for another person or having someone take an exam for oneself.

2. Plagiarism

   Plagiarism is defined as use of intellectual material produced by another person <u>or an unapproved resource</u> without acknowledging its source, for example:

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a. Wholesale copying of passages from works of others into one self's homework, essay, term paper, or dissertation without acknowledgment.

b. Use of the views, opinions, or insights of another without acknowledgment.

c. Paraphrasing of another person's characteristic or original phraseology, metaphor, or other literary device without acknowledgment.

d. The unapproved use of generative artificial intelligence (AI) to create content that is submitted as one's own.

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3. Class Materials

a. Removing, defacing, or deliberately keeping from other Students library materials that are on reserve for specific classes.

b. Contaminating laboratory samples or altering indicators during a practical exam, such as moving a pin in a dissection specimen for an anatomy class.

c. Selling, distributing, website posting, or publishing class lecture notes, handouts, readers, recordings, or other information provided by an instructor, or using them for any commercial purpose without the express permission of the instructor.

4. False Information and Representation, Fabrication or Alteration of Information

a. Furnishing false information in the context of an academic assignment.

b. Failing to identify oneself honestly in the context of an academic obligation.

c. Fabricating or altering information or data and presenting it as legitimate.

d. Providing false or misleading information to an instructor or any other University official.

e. Submitting an assignment prepared by another person or resource other than the student responsible for the assignment.

f. Creating content utilizing an unapproved resource, including generative artificial intelligence (AI).

5. Theft or Damage of Intellectual Property

a. Sabotaging or stealing another person's assignment, book, paper, notes, experiment, project, electronic hardware or software.

b. Improper access to, or electronically interfering with, the property of another person or the University via computer or other means.

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      c. Obtaining a copy of an exam or assignment prior to its approved release by the instructor.

   6. Alteration of University Documents

      a. Forgery of an instructor's signature on a letter of recommendation or any other document.

      b. Submitting an altered transcript of grades to or from another institution or employer.

      c. Putting one's name on another person's exam or assignment.

      d. Altering a previously graded exam or assignment for purposes of a grade appeal or of gaining points in a re-grading process.

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B. "Provost" - the Provost of Tennessee Tech University (or the Provost's designated representative).

C. "Dean" – the Dean (or the Dean's designated representative) of the College (or School) offering the class in which the academic misconduct is charged to have occurred.

D. "Dean of Major"– the Dean (or the Dean's designated representative) of the College (or School) in which the Student is majoring.

E. "Department Chair" – Chair of the Student's major department.

F. "Instructor" – the person listed as the 'Instructor of Record' for the class. The instructor has the final say in approving or not approving the sources used for course assignments, including generative artificial intelligence (AI).

G. "Student" – for the purposes of this policy, any person who is admitted and/or registered for study at Tennessee Tech for any academic period. This shall also include any period of time that the student may be completing the Class Requirements to clear an "Incomplete" grade, but not otherwise registered for classes.

H. "Chairperson" or "Chair" – Chairperson of the College or University Academic Misconduct Committee, as applicable.

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I. "Member" – Faculty or Student appointed as a member or alternate member of a College or the University Academic Misconduct Committee.

J. "Class Requirement" – Any assignment, project, exam, quiz, or assessment tool regardless of its name, that is used in determining the Student's grade in the class.

K. "Business Days" – Days in which the University is open, including the Fall, Spring, and Summer terms, and any intersession days.

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L. "Official TTU Email" – An email sent from an official Tennessee Tech email account to a student's official Tennessee Tech email account. The subject line should bear the inscription (in capital letters): "ACADEMIC MISCONDUCT CHARGE. TIME SENSITIVE RESPONSE REQUIRED."

M. "College Committee" – The Academic Misconduct Committee of the College (or School) in which the class is offered.

N. "University Committee" – The Academic Misconduct Committee of the University

O. "Reprimand" – A formal warning to the student issued by the Provost upon the recommendation of the University Academic Misconduct Committee.

P. "Probation" – Placement of the student in a "warning status" that can lead to automatic suspension or expulsion if additional academic misconduct occurs.

Q. "Suspension" – Suspension of the student from the University for a specified number of academic terms (Fall and Spring), after which the student may apply for readmission to the University.

R. "Expulsion" - Permanent dismissal from the University.

S. "Class-level Sanction" – Sanctions that are related to the grade that a student is awarded in a specific class. Examples include, but are not limited to: Reduced grade for the Class Requirement, "F" or Zero for the Class Requirement, and/or an "F" grade for the class.

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T. "University-level Sanction" – Sanctions that potentially affect a student's standing at the University. These are: Reprimand, Probation, Suspension, and Expulsion.

V. Responsibilities

A. Instructor Responsibility

1. The Instructor has the primary responsibility for maintenance of academic integrity, including filing a charge of Academic Misconduct when s/he reasonably believes such has occurred.

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2. The Instructor shall provide in the class syllabus a definition of what resources are allowed and/or what resources are not allowed for completion of Class Requirements, including any differences between resources for in-class and outside-of-class Requirements. It is particularly important to include items on the list in which uncertainty on the part of the students might reasonably exist.

3. The Instructor may impose additional restrictions/allowances during the class for a specific Class Requirement, but must clearly communicate any changes to the Students.

4. Before penalizing a Student for Academic Misconduct, the Instructor must file a charge of Academic Misconduct as per this policy to ensure that the student is given the due process right to appeal. The University's Grade Appeal Policy is not to be used in lieu of the Academic Misconduct Policy.

5. In cases where an Instructor reasonably believes that the integrity of a Class Requirement has been compromised, but is unable establish by a preponderance of the evidence the parties involved in the matter, the Instructor may discard the results of the original assignment; but only if the Instructor re-administers the exam or assignment to the entire class.

6.   The instructor has the final say in approving or not approving the sources used for course assignments, including generative artificial intelligence (AI).

B. Student Responsibilities

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1. The Student is responsible for understanding and abiding by this policy, including reading Academic Conduct information provided in the class syllabus and asking for clarification if unclear about what is and is not allowed in the production of all Class Requirements.

2. The Student is responsible for following any instructions related to additional restrictions/allowances for a specific Class Requirement provided by the instructor and asking for clarification if necessary. In the event of a class absence, the burden is on the Student to ask the Instructor what, if any, restrictions/allowances for a specific Class Requirement were provided during the missed class.

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VI. **Procedures for Filing a Charge of Academic Misconduct**

A. An Instructor must follow the procedures outlined in this policy if s/he believes a charge of Academic Misconduct is warranted. The Instructor cannot impose a grade penalty for academic misconduct without filing a formal charge of academic misconduct.

B. Step 1 - The Instructor shall document in writing the charge, including details of the evidence of Academic Misconduct, a recommendation related to the appropriate penalty and the Student's right to a hearing <u>217 Academic Misconduct</u> <u>Charging Document Template</u>

C. Step 2 - The Instructor must send the Charging Document via Official TTU Email to the Student, the Department Chair, Dean, the Provost's Office, the Registrar, the Dean of Major and to the Office of International Education, when applicable. The Charging Document must be sent within five (5) Business Days of the Instructor's determination that Academic Misconduct has occurred, absent good cause.

1. For the purposes of this policy, an "Official TTU Email" means an email sent from an official Tennessee Tech email account to a student's official Tennessee Tech email account. The subject line should bear the inscription (in capital letters): "ACADEMIC MISCONDUCT CHARGE. TIME SENSITIVE RESPONSE REQUIRED."

2. Possible sanctions by the Instructor as a penalty for academic misconduct may include, but are not limited to, the following class-level sanctions:

a. Reduced grade for the Class Requirement,

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  b. "F" or Zero for the Class Requirement,

  c. "F" grade for the class,

3. In addition, the Instructor may also recommend that a University-level sanction be imposed, which include:

  a. Reprimand,

  b. Probation,

  c. Suspension,

  d. Expulsion.

4. If the Instructor recommends a University-level sanction as part of the penalty, the College Academic Misconduct Committee must review and support the recommendation in order for it to proceed to the University Academic Misconduct Committee. Step 7.

5. Once an Instructor files a charge of Academic Misconduct, the Registrar will place a "no-drop" hold on the Student's registration in the class so that the Student cannot withdraw from the class as an attempt to avoid the charge of Academic Misconduct. If the deadline for submission of grades to the Registrar occurs prior to the resolution of the charge of Academic Misconduct, the Instructor shall enter a grade of "I", which will be updated when the final outcome of the appeal process is known.

D. Step 3 – The Student's Options after a Charge of Misconduct is Filed

6. Option 1: Student Does Not Dispute the Charge

  a. If the Student does not file an [217 Academic Misconduct Request for Hearing Form](#) within five (5) Business Days of receipt of the Charging Document, absent good cause, the Dean's Office shall inform the Instructor, the Provost, the Dean of Major, the Department Chair, and the Office of International Education, when applicable that the Charge of Academic Misconduct has not been appealed and the instructor's class-level sanctions stand.

    i. Non-appeal of the Academic Misconduct Charge by the Student does not prevent further review by the College Committee, the College

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Committee of the Student's Major, or the Provost, for evidence of repeat or particularly egregious cases of academic misconduct. Requests for additional sanctions will be sent to the Provost's Office for possible referral to the University Academic Misconduct Committee for the imposition of University-level sanctions. Likewise, if the Instructor has recommended University-level sanctions in the Charging document, these will be considered by the College Committee (see Step 6), whether or not the student appeals the charge.

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b. A Student who does not file a timely appeal of a Charge of Academic Misconduct will not be allowed to use the TTU Grade Appeal policy to appeal a reduced class grade.

c. The process either ends here or proceeds either to Step 6 or 7, as previously indicated.

7. Option 2: The Student Disputes the Charge

a. The Student must file an appeal with the Dean using a [Academic Misconduct Request for Hearing Form](#) within five (5) Business Days after receipt of the Charging Document, absent good cause.

b. For the purposes of this policy, "receipt" means the date the Instructor sent the Charging Document via Official TTU Email to the Student's Tennessee Tech email account.

c. The Process continues to Step 4.

E. Step 4 - College Academic Misconduct Committee Procedures - If the Student files a timely Request for Hearing, the Dean shall notify the College Academic Misconduct Committee of the need to meet to hear the appeal.

F. Step 5 - The Dean (or the College Committee Chairperson) shall select a suitable date, time, and location for the hearing and then notify the Committee Members, Instructor, and Student of the time and place of the hearing. Whenever possible, a date and time should be selected that enable the Instructor and Student to attend the hearing in person.

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G. Step 6 – The appeal hearing shall be held within eight (8) Business Days after the Request for an Appeal Hearing is received, dependent on the availability of the Instructor and the Student, and absent other good cause. A timely hearing is important to the due process of the Student and the Instructor.

1. The Instructor and Student shall appear before the College Committee in person to present their cases. In the event one or the other cannot attend, the Instructor and/or Student may present their cases in writing.

2. The decision of the College Committee is to be communicated by the Dean's Office via Official TTU Email to the Student, Instructor, Provost, Registrar, Department Chair, and Dean of Major (if not the same as the Dean), as soon as practical, but not later than two (2) Business Days of the hearing, absent good cause.

3. In the case that the College Committee finds the preponderance of evidence does not support the charge of academic misconduct, the Registrar removes the "no-drop" hold from the course, and the student may withdraw from the course at that point, if the Student so chooses. If the College Committee supports the Instructor's Charge, the Student may not withdraw from the class.

4. If the College Committee finds that the preponderance of evidence supports the charge, the College Committee may then either (1) support the sanctions as originally imposed by the instructor, or (2) recommend reduced sanctions to the instructor. In addition, in the case of repeat or particularly egregious misconduct, the College Committee can also recommend that a University-level sanction be added to the charge. The College Committee must include recommendations for reduced or additional sanctions are to be added to the written documentation sent forward to the Provost.

5. If the College Committee supports the Instructor's Charge, the Student may not use the TTU Grade Appeal Process to appeal the Charge. If the Committee does not support the Charge but the Instructor persists, then the Student may appeal the grade using the Grade Appeal Policy.

6. For Class-level sanctions, the decision of the College Committee is final; these cannot be appealed to the University Academic Misconduct Committee.

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7. The process ends here or moves to the University Academic Misconduct Committee as described in Step 7, if:

    a. If the Instructor's recommendation includes a University-level sanction (e.g., reprimand, probation, suspension, or expulsion) and the College Committee supports that recommendation, or

    b. The College Committee elects to recommend a University-level sanction in addition to the Instructor's class-level sanction.

8. If the College Committee finds the preponderance of evidence does not support the charge of academic misconduct, the College Committee shall recommend to the Instructor that the charge of academic misconduct be withdrawn, and that s/he determine the Student's grade in accordance with the stated class policy without prejudice or penalty associated with the alleged misconduct.

    If the Instructor declines to accept the Committee's recommendation, then:

    a. The Student may appeal the Charge to the University Committee; and/or
    b. The Student may elect to withdraw from the class at this time. The withdrawal date will be effective at the date the original hold was placed by the Registrar; and/or
    c. The Student may appeal the Instructor's final grade according to the Grade Appeal Procedure.

H. Step 7 - University Academic Misconduct Procedures

    1. The University Academic Misconduct Committee ("University Committee") is the sole committee designated to adjudicate University-level sanctions (reprimand, probation, suspension, or expulsion) related to charges of Academic Misconduct.

    2. Based on the recommendation of the College Academic Misconduct Committee, the Academic Misconduct Committee of the College of the Student's Major (if different than the college in which the charge is filed), or

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the Provost, an academic misconduct case can be referred to the University Committee via the Provost's Office for University-level sanctions. In cases where the Charging Document does not include information related to additional penalties, the Student must receive written notification of the additional sanctions being recommended to the University Committee.

I. Step 8 – The Provost shall notify the Student via Official TTU Email of any recommendation to seek additional Penalties, whether from a College Committee or the Provost. The student will also be advised of his/her right of appeal.

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J. Step 9 – A Student who contests the Charge of Academic Misconduct before the University Committee has two options (1 or 2, below):

   1. In cases where the penalty sought is suspension or expulsion, the Student may elect to have the case disposed of under the Uniform Administrative Procedures Act (UAPA) in accordance with applicable contested case procedures. The Tennessee Tech process ends and the UAPA process begins.

   2. In cases to be heard by the University Academic Misconduct Committee, the process will proceed as per Steps 10-13 below.

   3. A Student charged with Academic Misconduct who elects to have the case disposed of under Tennessee Tech Procedures must execute a written waiver of his/her right to a disposition of the case under the Uniform Administrative Procedures Act and send it via Tennessee Tech email to the Provost. [217 Academic Misconduct Waiver of UAPA Hearing](#)

K. Step 10 - The Office of the Provost shall notify the Chairperson of the University Academic Misconduct Committee of the need for the University Committee to meet to hear the appeal.

L. Step 11 - The Provost shall, after consultation with the

University Committee Chairperson, notify the Student, the Instructor, the Department Chair, the Dean, the Dean of Major, and University Committee members of the date, time and place of the hearing. Whenever possible, a date and time should be selected that enable the Instructor and Student to attend the hearing in person. In cases where the charge is being brought forward by a

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College other than the Student's Major, the Dean of the College of Major may elect to attend the University Committee Hearing as an observer.

M. Step 12 - The University Committee hearing shall be held within ten (10) Business Days from the receipt of the request for an appeal by the Provost's Office, dependent on the availability of the Instructor and the Student, and absent other good cause. A timely hearing is important to the due process of the Student and the Instructor.

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4. The University Committee shall require the parties to appear in person, absent good cause, to present their cases. In the event one or more parties cannot attend, the party may present their cases in writing.

5. The Dean shall present the charge of Academic Misconduct to the University Committee.

6. If the University Committee finds that the preponderance of the evidence, including any prior incidents of Academic Misconduct, warrants additional penalties, the University Committee may then impose a University-level sanction (reprimand, probation, suspension, or expulsion).

7. If the University Committee finds that the preponderance of evidence, including consideration of any prior incidents of Academic Misconduct, does not support additional penalties, the recommendation of the College Committee still stands, but additional penalties are not imposed.

8. The decision of the University Committee is final.

N. Step 13 - The University Committee shall communicate its decision via Official TTU Email to the Student, the Instructor, the Provost, the Department Chair, the Dean, the Dean of Major, and the Provost's Office, as soon as possible, but no later than two (2) Business Days of the hearing, absent good cause.

VII.   **Committee Structure**

A. College Academic Misconduct Committee

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1. A college-level Academic Misconduct Committee shall be established in each of the following academic units:

    a. College of Agriculture and Human Ecology;

    b. College of Arts and Sciences;

    c. College of Business Administration;

    d. College of Education (including ROTC and Crafts Center);

    e. College of Engineering;

    f. College of Fine Arts;

    g. College of Interdisciplinary Studies; and

    h. School of Nursing.

2. Membership

    a. The College Academic Misconduct Committee of each College/School, with the exception of the School of Nursing, and the College of Agriculture and Human Ecology, shall consist of
        i   One (1) Faculty Member and one (1) Faculty Alternate from each department within the College, elected for a three (3) year term by the department, and
        ii One (1) Student Member and at least one (1) Student Alternate majoring within the College. The Student Members and Alternates are nominated by the President of the Student Government Association (SGA) and appointed by the President of the University for a one (1) year term. At least one Student of the nominated Students should be available during the Summer and/or between terms in case it is necessary to hold meetings of the College Committee during these periods. The Student Members must sign a Confidentiality Agreement indicating that they will abide by FERPA regulations regarding the confidentiality of the academic misconduct proceedings and information provided to them as part of the proceedings.

    b. The College Academic Misconduct Committees for the School of Nursing shall consist of
        i   Three (3) Faculty members elected for three (3) year terms, and

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        ii One (1) Student Member and at least one (1) Student Alternate as described in Section VII.A.2.ii above.

  c. The College Academic Misconduct Committee for the College of Agriculture and Human Ecology shall consist of

        i Four (4) Faculty Members and two (2) Alternates elected for three (3) year terms, and

        ii One (1) Student Member and at least one (1) Student Alternate as described in Section VII.A.2.ii above.

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3. Administrative Procedures

  a. The College Academic Misconduct Committee Chairperson and Alternate Chairperson shall be elected annually by the Committee members.

  b. The required quorum depends on whether or not a University-level sanction is being considered as part of the sanction. (1) If a University-level sanction is being considered, a quorum requires a majority of members on the Committee. (2) If only class-level sanctions are being considered, a quorum requires three members of the Committee. In both cases, the quorum must include a Student Member (or Student Alternate), and the Committee Chair (or Alternate).

  c. In cases where a Faculty Member of the College Academic Misconduct Committee is the Instructor charging the Student with academic misconduct, the Faculty member recuses her/him-self from the Committee.

  d. In cases where the Chairperson of the College Academic Misconduct Committee is the Instructor charging the Student with academic misconduct, the Chairperson recuses her/him-self and the Alternate Chairperson serves as the Chair.

  e. The College Dean shall provide the support services for the College Academic Misconduct Committee.

B. University Academic Misconduct Committee

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1. Membership

   The University Academic Misconduct Committee shall consist of:

   a. The Chairperson or Alternate Chairperson of each College Academic Misconduct Committee, and

   b. One (1) Student Member and at least one (1) Student Alternate majoring within the associated College. The Student Members and Alternates are nominated by the President of the Student Government Association (SGA) and appointed by the President of the University for a one (1) year term. At least one Student of the nominated Students should be available during the Summer and/or intersession terms in case it is necessary to hold meetings of the College Committee during these periods. The Student Members must sign a Confidentiality Agreement indicating that they will abide by FERPA regulations regarding the confidentiality of the academic misconduct proceedings and information provided to them as part of the proceedings.

2. Administrative Procedures

   a. The Chairperson and the Alternate Chairperson of the University Academic Misconduct Committee shall be elected annually by the Committee.

   b. A quorum shall consist of five (5) members, including the Chairperson or Alternate Chairperson, the representative (or alternate) from the College in which the alleged offense occurred, and the Student Member or the Student Alternate.

   c. In cases where the College Chairperson is making the charge against the Student, the Alternate College Chairperson shall serve on the University Academic Misconduct Committee.

   d. In cases where the Chairperson of the University Academic Misconduct Committee is making the charge against the Student, the Alternate Chairperson of the University Academic Misconduct Committee shall serve as Chairperson.

   e. The Provost shall provide the support services for the University Academic Misconduct Committee.

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VIII. Citation of Authority

T.C.A. § 49-8-203(a)(1)(D); Tenn. Comp. R. & Reg. 0240-09-01 et seq.

Approved by:

Administrative Council:	February 22, 2017
University Assembly:	April 19, 2017
TTU Board of Trustees:	August 17, 2017

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Agenda Item Summary

Date: September 28, 2023

9.1

Agenda Item: Expedited Letter of Notification (ELON) for the Master of Science (MS) in Industrial and Systems Engineering

☐ **Review**   ☐ **Action**   ☒ **No action required**

PRESENTERS: Provost Lori Bruce

PURPOSE & KEY POINTS: The Master of Science (MS) degree in Industrial and Systems Engineering is being proposed to address one of the fastest growing engineering disciplines nationally, serving manufacturing, logistics and supply chain, healthcare, and government, as well as many other industry sectors. The MS degree will be centered on industrial engineering with a foundation of systems engineering, which is supported by an emphasis on data analysis and modeling and courses in engineering economics, human factors, and engineering management.

Office of the President

TENNESSEE TECH

September 13, 2023

Dr. Robert Smith
Interim Executive Director
Tennessee Higher Education Commission
312 Rosa Parks Ave, 9th Floor
Nashville, TN 37243

Dear Interim Executive Director Smith:

In accordance with THEC policy A 1.6 Expedited Academic Programs: Approval Process, Tennessee Tech University (TTU) submits an expedited letter of notification (ELON) for a new graduate program in the Department of General and Basic Engineering in the College of Engineering. This proposed Master of Science in Industrial and Systems Engineering program will address one of the fastest growing engineering disciplines nationally, serving manufacturing, logistics and supply chain, healthcare, and government.

This Master of Science will be centered on industrial engineering, but will also include a foundation of systems engineering, which is supported by the emphasis in data analysis and modeling along with courses in engineering economics, human factors and engineering management or project management. The Tennessee Higher Education Commission's (THEC) Academic Supply and Demand Report shows industrial engineering is cited as an "in-demand occupation" that is key to eight of the nine industry clusters in Tennessee. These include automotive, chemicals, aerospace and defense, electrical equipment and appliances, food and agriculture, healthcare and life sciences, rubber, ceramics, and glass, finance and tech.

Nationwide, the Bureau of Labor Statistics predicts a strong growth rate in industrial engineering employment between years 2020 and 2030. Industrial engineering employment, in recent years, has represented the greatest number of engineering jobs in Tennessee. However, there are fewer academic programs and graduates available to support this employment. Tennessee Tech would like to propose this new graduate program to address this need.

Please consider this letter a formal request for the expedited approval process.

Sincerely,

Philip B. Oldham
President

Tennessee Tech Internal Cover Form for Letters of Notification

Please refer to the TTU Office of the Provost website for New Programs and Program Modifications before developing a proposal. https://www.tntech.edu/provost/new-programs.

Name of New Academic Program and Degree Designation:

Industrial and Systems Engineering, Master of Science

Proposed Implementation Date: Spring 2025

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Information Contact: Joseph C. Slater   / 931-372-3172
                        Printed Name   *Telephone*

APPROVED: _Christopher D. Wilson_____ / Aug 28, 202͗
                Department Chairperson's Signature   *Date*

APPROVED: _____ / 8/30/23
                College Dean's Signature   *Date*

APPROVED: _____ / 09/14/23
                Provost's Signature   *Date*

Tennessee Tech Board of Trustees Approval: __N/A_____
                                               Date

Revised 1/2019

Expedited Letter of Notification for MS in Industrial and Systems Engineering

9.2

OVERVIEW

INSTITUTION NAME: Tennessee Technological University

PROPOSED ACADEMIC PROGRAM: Master of Science in Industrial and Systems Engineering

DEGREE DESIGNATION: MSISE

CIP CODES: 14.3501, 14.2701

CIP CODE TITLES: Industrial Engineering, Systems Engineering

ACADEMIC PROGRAM LIAISON: Dr. Chris Wilson, Chair
Dept. of General and Basic Engineering
College of Engineering
931-372-3216
chriswilson@tntech.edu

IMPLEMENTATION TIMELINE:

- **Proposed date for the external site visit:** Spring 2024

- **Estimated date of submission of the external review report to THEC:** Spring 2024

- **Estimated date of institution's response to external review:** Spring 2024

- **Estimated timeline for proposed programs that will seek programmatic accreditation:** Not Applicable

- **Proposed date of the institutional governing board's meeting to consider the proposed academic program for approval:** June 2024

- **Proposed date of the THEC meeting to consider the proposed academic program for approval:** July 2024

- **Proposed implementation date when students will enroll in the proposed academic program:** Spring 2025

Contents

9.2

BACKGROUND AND OVERVIEW

Background Narrative

Tennessee Technological University is proposing the development of a new degree program, the Master of Science in Industrial and Systems Engineering (MSISE). Although Tennessee Tech has previously had both Master of Science and Bachelor of Science programs in Industrial Engineering, those programs were terminated with phase-outs in 2010 and 2012, respectively. Since that time, industrial engineering has become one of the fastest growing engineering disciplines nationally, serving manufacturing, logistics, healthcare, and government.

Need and Rationale for Program. Industrial engineering has been identified as an "in-demand occupation" in Tennessee [1]. Employers have told Tennessee Tech administrators that they need industrial engineers and are forced to hire other majors because Tennessee Tech no longer offers this academic program.

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To address the growing demand for industrial and systems engineers and the needs of Tennessee employers, a Master of Science (MS) program is proposed. An MS program enables a faster response to produce initial graduates with industrial and systems engineering knowledge and skills, approximately eighteen months or two years after implementation versus three to four years for a Bachelor of Science (BS) degree program. Other advantages for beginning with an MS program versus a BS program include the following:

- The coursework planned in the proposed program will support other MS programs in the College of Engineering.
- Students in the MS program will facilitate the research activities of the faculty.
- An opportunity for research collaboration and shared faculty support of instruction can help to strengthen the new MS in Engineering Management program, which began in 2020.
- A smaller faculty and fewer laboratories are needed for an MS program than for a BS program, reducing start-up costs.

A successful MS implementation will be followed by a proposal for a BS degree program if resources and demand prove sufficient.

MSISE Program Overview. This section summarizes the goals for development of the program, the focus on industrial and systems engineering, and details on the proposed program.

Program Development Goals

Development of the proposed MSISE program has been guided by several goals, as follows:

- Develop an efficient program without extensive prerequisite coursework to attract students from other engineering disciplines who want to build on their BS engineering knowledge to gain technical competence in industrial and systems engineering.
- Design a program based on program objectives and student learning outcomes that include breadth in graduate-level industrial and systems engineering topics and depth in analytical methods.
- Develop a program with coursework that will support other graduate programs in the College of Engineering at Tennessee Tech.
- Develop a flexible program that will attract and effectively serve diverse students, both on-campus and online, and full-time and part-time.

Related to the first goal, the MSISE program will be focused on attracting graduates of other engineering disciplines who would be interested in an advanced degree in industrial and systems engineering but would <u>not</u> be interested in seeking a graduate degree in their undergraduate discipline. This approach supports stackable credentials, a goal identified in the THEC Master Plan Update of 2020 [2], as explained later in this document.

Because of the initial target student population, the second goal specifies that the program emphasis will be to provide breadth across the discipline of industrial and systems engineering and depth in data analysis and modeling. This focus serves the needs of Tennessee employers for both industrial engineers and operations research analysts, occupations identified as "in-demand" in Tennessee [1]. In addition, the degree emphasis on analytical methods and systems engineering is related to the third goal to provide courses that will support other graduate programs in the College of Engineering.

The fourth goal is aimed at flexibility to meet the needs of traditional students interested in on-campus coursework along with working engineers who need the ability to take courses online. It also knowledges a commitment to seek and serve diverse students.

These goals have been applied in the design of the proposed program described later in this section.

<div align="center">Industrial and Systems Engineering</div>

The proposed program is a Master of Science in Industrial and Systems Engineering. Industrial engineering (IE) and systems engineering (SE) are represented by two different CIP codes. Table 1 shows the instructional content specified in *The Classification of Instructional Programs* [3] for industrial engineering and systems engineering programs.

Although the CIP codes differ, Table 1 shows that the instructional content has a substantial overlap. In practice, job titles tend to vary by industry and focus. Systems engineers tend to work in the military and defense and aerospace industries where the systems of concern are large-scale hardware or software systems. Industrial engineers are employed by a more diverse

<div style="position:absolute;right:0">9.2</div>

9.2

Table 1. Instructional Content - Industrial Engineering and Systems Engineering Programs [4]

Industrial Engineering (CIP 14.3501)	Systems Engineering (CIP 14.2701)
A program that prepares individuals to apply scientific and mathematical principles to the design, improvement, and installation of integrated **systems** of people, material, information, and energy. Includes instruction in applied mathematics, physical sciences, the social sciences, **engineering** analysis, **systems** design, computer applications, and forecasting and evaluation methodology.	A program that prepares individuals to apply mathematical and scientific principles to the design, development, and operational evaluation of total **systems** solutions to a wide variety of **engineering** problems, including the integration of human, physical, energy, communications, management, and information requirements as needed, and the application of requisite analytical methods to specific situations.

set of employers operating in systems that involve hardware, software, and people but are focused on processes such as transportation and logistics, healthcare, government, and manufacturing. Job titles for industrial engineers in these industries are also diverse, including titles such as quality engineer, data analyst, management engineer, and operations engineer, among others.

In recognition of the significant overlap in content, industrial and systems engineering is defined as one discipline by the Institute of Industrial and Systems Engineers, which states [5]:

> *"Industrial and systems engineering is concerned with the design, improvement, and installation of integrated systems of people, materials, information, equipment, and energy. It draws upon specialized knowledge and skill in the mathematical, physical, and social sciences together with the principles and methods of engineering analysis and design, to specify, predict, and evaluate the results to be obtained from such systems."*

Approximately a quarter of accredited undergraduate industrial engineering programs in the U.S. are accredited as "industrial and systems engineering" programs, meeting the program requirements for both disciplines as specified by the Engineering Accreditation Commission (EAC) of ABET. ISE baccalaureate programs accredited by the EAC of ABET include programs at Auburn University, Lehigh University, The University of Alabama at Huntsville, The Ohio State University, University of Florida, University of Oklahoma, University of Southern California, and Virginia Tech, among others. Except for the military academies, engineering master's programs in the United States rarely seek accreditation by the EAC of ABET. In addition, master's programs related to ISE are typically focused on either industrial engineering or systems engineering, not both. However, Auburn University offers an MSISE degree, and the program proposed for Tennessee Tech is an MSISE degree.

Program Design Details

The development of the proposed program has been guided by the program objectives listed in Table 2 and the student learning outcomes in Table 3.

Table 2. Program Educational Objectives

Graduates of the MSISE program will . . .

- Apply advanced expertise, leadership, and scholarship in industrial and systems engineering to create value for their employers in Tennessee and beyond;
- Demonstrate a commitment to professional development and continued learning through participation in further graduate studies, continuing education, training programs, or self-study; and
- Use industrial and systems engineering methods to serve the profession, community, or society.

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Table 3. Student Learning Outcomes

At the time of graduation, students will be able to . . .

- Demonstrate subject knowledge, technical competence, and professional skills associated with the human factors, economic, analytical modeling, and systems aspects of industrial and systems engineering;
- Conduct research or apply advanced analytical methods in the development of solutions to industrial and systems engineering problems; and
- Give professional presentations or write scholarly documents worthy of publication in conference proceedings and/or peer reviewed journals.

The MSISE degree will be centered on industrial engineering but will also include a foundation in systems engineering, which is supported by the emphasis in data analysis and modeling, along with courses in engineering economics, human factors, and engineering management or project management.

The program will require 32 credit hours and support both practitioner and research-focused students with a project option and a thesis option, respectively. Courses will be offered on campus to encourage enrollment by full-time students and online to attract part-time enrollment by working professionals.

Table 4 provides a summary of the requirements planned for the project and thesis options in the program. All students will have three core topics courses (9 credits) and two core professionalism courses (1 credit each). Other requirements will include a selection of courses from four focused elective areas for the project option and three or four areas for the thesis option. The focused elective areas guarantee breadth of knowledge in industrial and systems

engineering for students who may not have an undergraduate background in ISE. The technical electives will be mathematics courses selected to build strength in data analysis and modeling.

Table 4. Planned Courses for the MSISE Program

Course Type	Project Credit Requirements	Thesis Credit Requirements
ISE Core	9	9
Professionalism Core	2	2
Project or Thesis	3	6-9*
Focused Elective Areas	12	9-12*
Technical Electives	6	3
Total	32	32

*For 6 credits of thesis, 12 focused elective credits will be required.
 For 9 credits of thesis, 9 focused elective credits will be required.

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Justification for Consideration of Expedited Policy

Demand for Industrial Engineers Nationally and in Tennessee. Although the proposed MS program is in industrial and systems engineering, the data reported here to address demand and need represent only industrial engineering (IE) jobs because pure systems engineering employment data are not reported separately for Tennessee in all the cited sources.

In the _In-Demand_Regional_Data_11-30-2021_ spreadsheet [1] downloaded from THEC's Academic Supply and Demand Report webpage, industrial engineering is cited as an "in-demand occupation" that is key to eight of nine industry clusters in Tennessee, including the following:

- ▪ Food and agriculture
- ▪ Healthcare and life sciences
- ▪ Rubber, ceramics, and glass
- ▪ Automotive
- ▪ Electrical equipment and appliances
- ▪ Headquarters, finance, and tech
- ▪ Aerospace and defense
- ▪ Chemicals

Although the "Distribution and Logistics" cluster is omitted as a key industry sector for industrial engineering in [1], industrial engineering is in fact critical to organizations such as UPS, FedEx, and other companies operating the numerous distribution centers in middle Tennessee.

As noted previously the MSISE program will provide depth in data analysis and modeling, and MSISE and MSIE graduates with these skills are often hired as operations research analysts. The

operations research analyst occupation is cited in [1] as key to four industry clusters in Tennessee.

Nationally, the Bureau of Labor Statistics predicts a strong growth rate in industrial engineering employment between 2020 and 2030, as shown in Table 5. Among engineering disciplines, the metrics of projected total employment in 2030 and employment percentage change from 2020 to 2030 are greatest for industrial engineering as an engineering employment subgroup.

9.2

Table 5. Engineering Disciplines with Greatest U.S. Employment (Employment Subgroups) [6]

Occupation Title	Occupation Code	Employment 2020*	Employment 2030*	Employment Change, 2020-2030*	Employment % Change, 2020-2030	Occupational Openings, 2020-2030 Annual Avg*
Industrial engineers, including health and safety	17-2110	316.1	357.6	41.4	13.1%	25.0
Electrical and electronics engineers, not computer	17-2070	313.2	333.6	20.4	6.5%	22.7
Civil engineers	17-2051	309.8	335.1	25.3	8.2%	25.0
Mechanical engineers	17-2141	299.2	320.1	20.9	7.0%	20.2
Computer hardware engineers	17-2061	66.2	67.3	1.0	1.5%	4.5
Aerospace engineers	17-2011	61.4	66.5	5.1	8.3%	4.0

*Employment numbers in thousands

Data from the U.S. Bureau of Labor Statistics shown in Table 6 indicates that industrial engineering employment is greater than other engineering employment in Tennessee. In addition, IE jobs have a higher location quotient, i.e., with greater representation in Tennessee than nationally, perhaps due to the demand for IEs in manufacturing, logistics, and healthcare, three major employment sectors in Tennessee.

Table 6. Engineering Disciplines with Greatest Tennessee Employment in 2022 [7]

Occupation Title	Occupation Code	Total Employment	Employment% Standard Error	Jobs per 1000	Location Quotient
Industrial engineers	17-2121	6,720	2.5	2.153	0.99
Mechanical engineers	17-2141	2,730	5.6	0.875	0.47
Civil engineers	17-2051	3,710	5.7	1.188	0.57
Electrical engineers	17-2071	2,190	5.7	0.700	0.57
Electronics engineers, not computer	17-2072	1,100	12.9	0.354	0.49

Demand Versus Academic Supply. Even though industrial engineering employment represents the greatest number of engineering jobs in Tennessee, fewer academic programs and graduates are available to support this employment, as shown in Table 7. Anecdotal evidence from employers and alumni indicates that engineering graduates of other disciplines are employed in industrial engineering jobs without having had the specialized education offered by an industrial engineering degree.

Table 7. 2019-20 Engineering Degree Production Versus 2021 Total Employment in Tennessee

Occupation Title	Occupation Code	May 2021 Total TN Employment*	2019-20 BS Degrees*	2019-20 MS Degrees**	Total 2019-20 BS & MS Degrees	Degrees as % of 2021 TN Employment
Mechanical engineers	17-2141	3,470	487	42	529	15.24%
Civil engineers	17-2051	3,390	222	46	268	7.91%
Electrical and electronics engineers, not computer	17-2071 & 17-2072	2,990	174	29	203	6.79%
Industrial engineers	17-2121	6,930	44	36	80	1.15%

 * Source (2022 version): [7]
** Source: [8]

These data provide support for the addition of another program in Tennessee focused on industrial engineering, and the MSISE program at Tennessee Tech is being proposed to address this need.

Existing Programs of Study at the Institution

The proposed MSISE program is not emerging from an existing minor or certificate program. However, some courses are currently offered in support of other BS and MS programs in the College of Engineering, and an undergraduate minor in Industrial and Systems Engineering was approved beginning in Fall 2022. Students minoring in Industrial and Systems Engineering would be a natural market for the MSISE.

Community and Industry Partnerships
Five letters of support from industry are submitted in Appendix A of this letter of notification. These letters show support for the degree program from a wide variety of employers, including the following:

- ATC
- Cummins Filtration
- FedEx
- JR Automation
- Tenneco

In addition, a survey was sent to 171 employer representatives who had recruited engineering students at a Tennessee Tech career fair during the period from Fall 2021 through Fall 2022. The survey resulted in 35 survey responses for a response rate of 20.5%. Table 8 provides a summary of the positive survey responses and demonstrates employer support. The percentage of respondents who indicated that their organization hires industrial engineers was 42.4%, and the same percentage indicated that they were definitely or positively interested in interviewing industrial engineering students from Tennessee Tech if a program is developed and approved. Another 24.2% of the employers responded that they might be interested in interviewing students from the program. The survey results indicate an excellent potential for additional partnerships with industry beyond those found in the letters of support.

Table 8. Employer Survey Results

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Question	Positive Response	Percentage
Does your organization currently employ industrial engineers?	Yes	42.42%
Would your organization be interested in interviewing Tennessee Tech University industrial engineering students for potential employment, either for internships or permanent positions?	Definitely yes Probably yes Maybe	18.18% 24.24% 24.24% Total = 66.67%
(Optional) We welcome your comments regarding the potential for an industrial engineering program at Tennessee Tech University.	Selected comments related to industrial engineering are listed below.	
- We have hired several industrial engineers from Tech (back in the day). Currently a number of MEs and METs work here as well. An Industrial Engineering program would be very helpful and useful for us in automotive manufacturing. - We use MEs and EEs as IEs from time to time. Process improvements, time studies, understanding of routings for product builds, etc. are all helpful concerning operational efficiencies. An IE program at TTU would definitely interest our company from a Co-op and full-time employment experience. Likely, IEs would go into other areas of operations like continuous improvements and six sigma. - We have hired many engineers from TN Tech and look forward to hiring many more.		

ACCREDITATION

Although the Engineering Accreditation Commission of ABET supports the evaluation of engineering master's programs for accreditation, few engineering MS programs in the U.S. opt

to seek this accreditation. Institutions in the U.S. generally focus their engineering accreditation efforts on their BS programs. Likewise, the MSISE program at Tennessee Tech will not initially seek accreditation by the Engineering Accreditation Commission of ABET.

ADMINISTRATIVE STRUCTURE

Figure 1 provides the organization chart proposed for the MSISE program. A new academic department is not required. The program will be offered by faculty in the General and Basic Engineering (GBE) Department, one of six departments in the College of Engineering. The department name will be changed to reflect the new program. Other programs offered through faculty in the GBE Department are included in Figure 1.
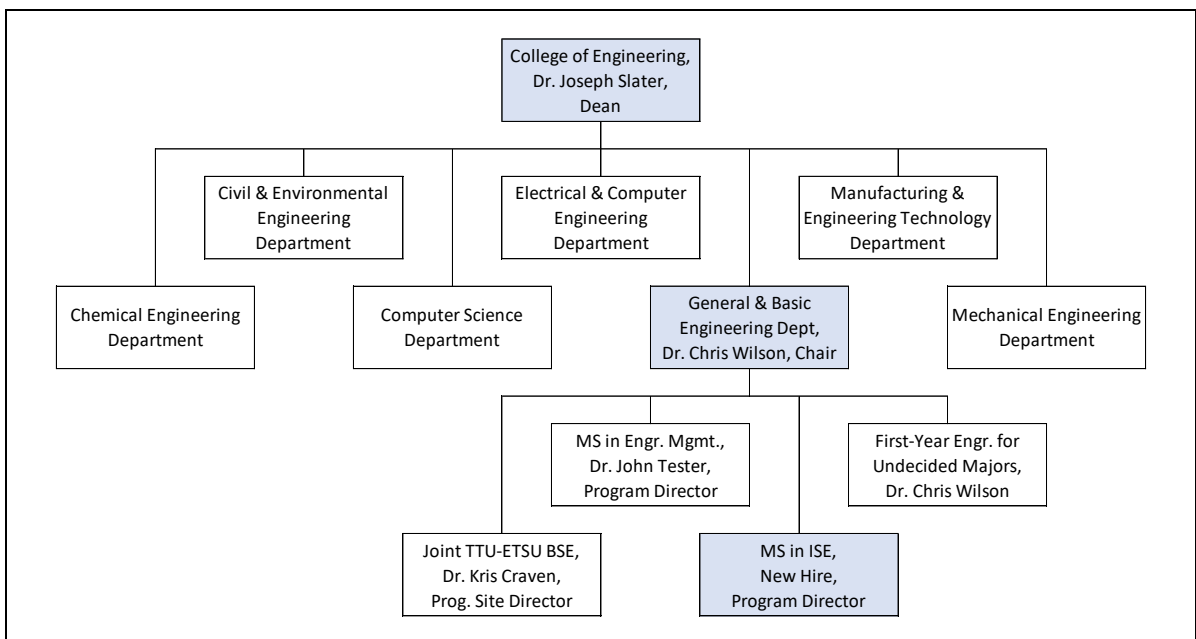
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Figure 1. Organization Chart for the Proposed MSISE Program

ENROLLMENT AND GRADUATION PROJECTIONS

Table 9 shows projected enrollments and graduates for the first five full academic years of the MSISE program. To assist in completing Table 9, the Office of Institutional Assessment, Research, and Effectiveness (IARE) at Tennessee Tech provided persistence and graduation data, along with time-to-degree, for the past five years for all MS programs in the College of Engineering. Because the MSISE program is planned for both on-campus and online students, the IARE data were analyzed for the five on-campus MS programs separately from the data for the MS in Engineering Management (MSEM) program, which is the only fully online MS program offered by the College of Engineering.

Table 9. Projected Enrollments and Graduates

Year	Academic Year	Projected Fall Enrollment			Projected Attrition	Projected Graduates
		On-Campus, Full-Time	Online, Part-Time	Total		
1	Spring 2025	2	2	4	1	0
2	2025-26	6	3	9	3	0
3	2026-27	9	4	13	3	3
4	2027-28	10	6	16	4	3
5	2028-29	12	7	19	4	5

Data for attrition and number of graduates for on-campus students in the MSISE program were based on the historical persistence and graduation rates, along with time-to-degree, for the five existing on-campus MS programs. Data for attrition and number of graduates for online students in the MSISE programs were based on the persistence and graduation rates for the MSEM. Projections for the on-campus and online students were then combined, resulting in the estimates for attrition and graduates shown in Table 9. Appendix B includes the underlying data and assumptions that resulted in the Table 9 projections.

It should be noted that the MSEM program began only in 2020, and its implementation has been affected by issues related to the pandemic. December 2022 saw the first MSEM students graduate. The use of MSEM historical data to forecast attrition and graduates for online MSISE students is likely inaccurate, but these are the only relevant data available. The projections for online students based on these data are extremely conservative, with a high attrition rate and a low graduation rate, as reflected by MSEM data for an unusual, pandemic-dominated start-up period.

INSTITUTIONAL ALIGNMENT AND DEMAND

Alignment with State Master Plan and Institutional Mission Profile

Alignment with the THEC Master Plan. *Enabling the Competitive Edge: THEC Master Plan Update 2020* [2] identifies the following two goals and metrics related to building the future workforce:

- **Increase enrollment in majors leading to high-demand jobs**: The proportion of students enrolling in degree programs that lead to employment in high-need fields, as determined by THEC's annual Academic Supply and Occupational Demand report, will increase by at least 5% annually (N = 500) over the next five years.
- **Increase Computer Science and Data Analytics offerings**: THEC will encourage higher education institutions, via funding opportunities and pilot initiatives, to increase offerings in Computer Science and Data Analytics to all students, not only those who are pursuing either field as a major.

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The proposed MSISE degree program addresses both goals. As previously noted, the MSISE is designed to prepare students for employment as industrial and systems engineers and operations research analysts. The occupations of industrial engineer and operations research analyst are included in the Tennessee *In-Demand Occupations* data file [1] as "in-demand occupations." In addition, the proposed MSISE program's emphasis on data analysis and modeling addresses the second goal to increase offerings in data analytics. The coursework in data analytics and modeling will support other graduate programs in the College of Engineering, extending the benefits of this program to other students as suggested in the second goal.

The *THEC Master Plan Update 2020* [2] also notes that stackable credentials are important for building the future workforce, stating that "A student's ability to accumulate credentials in a given field over his or her working life is critical to the success of Tennessee's economy." The MSISE program is designed to permit students with BS degrees in engineering or technical disciplines to earn an advanced degree without the requirement for significant prerequisite work. The degree will provide instruction and experiences to enable engineering graduates, perhaps with a degree in a different discipline, to work more effectively in industrial engineering jobs.

9.2

These program aspects demonstrate that the proposed MSISE degree is aligned with the *THEC Master Plan*.

<u>Alignment with Tennessee Tech's Institutional Mission</u>. The proposed MSISE program is strongly supportive of the mission of Tennessee Tech University [9], which is stated below.

Tennessee's technological university creates, advances, and applies knowledge to expand opportunity and economic competitiveness. As a STEM-infused, comprehensive institution, Tennessee Tech delivers enduring education, impactful research, and collaborative service.

Alignment with the mission is evident from the following points.
- The MSISE is a STEM degree with strength in data analysis and modeling, which supports Tennessee Tech's mission "as a STEM-infused" institution and a technological university.
- The MSISE is focused on system design and operation for efficiency and effectiveness. The program will require a course in engineering economics, i.e., economic decision-making with a system perspective. These features of the program support the mission of applying "knowledge to expand economic competitiveness."
- MSISE student thesis research and other faculty research projects will create and advance "knowledge to expand opportunities and economic competitiveness" and will deliver "impactful research."
- The MSISE project option will require application of program knowledge to a real-world problem to improve efficiency and effectiveness, and thus economic competitiveness. Projects involving collaborative service will be encouraged.
- The program will be offered in two modalities: on campus to support full-time students and online to support working professionals. These modalities support the delivery of an "enduring education."

THEC Expedited Academic Program: ELON and ENAPP Checklist – August 2023   Page 11

Student Interest

Three Qualtrics surveys were conducted to assess student interest in a graduate ISE degree. One survey focused on students who had participated in the Cooperative Education Program, the second survey focused on recent engineering alumni, and the last survey focused on current students.

Co-operative Education Students Survey. Incoming first-year engineering undergraduate students often have a very limited understanding and knowledge of industrial and systems engineering. BSISE programs often attract greater numbers of sophomore or junior engineering majors who change their major from another engineering discipline rather than transferring out of engineering. These transfers occur when the students have gained a greater understanding of industrial and systems engineering as well as their previous majors. With no BSIE or BSISE program in place at Tennessee Tech to provide context, surveying undergraduate engineering students' interest in a potential MSISE program is problematic. However, students who have participated in employment through Tennessee Tech's Cooperative Education Program have potentially gained some knowledge of ISE through their employment experience. Hence, a Qualtrics survey was sent to 72 current BS and MS students who have participated in at least one semester of co-op employment.

9.2

Responses were received from 21 students for a 29.2% response rate. Table 10 on the following page summarizes some of the results. Students were asked about their experience with topics in the ISE Body of Knowledge and could select as many responses as applicable from the following choices:

- ▪ I learned about this topic during my co-op term
- ▪ I already knew about this topic from previous coursework or experience
- ▪ I participated in co-op work related to this topic
- ▪ I am interested in working in this area

The results showed that over 40% of the students learned about some ISE topics during their co-op assignment, and 18.2% gained experience in some of those topics. Nineteen percent of the students checked that they had an interest in working in the area related to one or more of the ISE topics. The interest indicates potential student demand for ISE topics.

It was not surprising that the survey question to undergraduate co-op students on whether the students planned to enroll in a Master's degree after graduation resulted in only four positive responses, none for the MSISE. Since the survey was administered anonymously, characteristics of the sample respondents are unknown. The respondents could have been several semesters from graduation, or they could have been graduating seniors who already have offers for employment.

Table 10. Co-op Student Experience Survey

Industrial & Systems Engineering Body of Knowledge Topic	Learned about topic on co-op	Learned about topic in prior courses	Participated in co-op work related to topic	Interested in work related to topic	Total
Data analysis, modeling, and/or simulation	9	11	4	8	32
Economic analysis (time value of money, present worth of alternatives, make/buy analysis, replacement analysis, etc.)	6	5	6	5	22
Ergonomics and human factors (including physical and cognitive ergonomics, displays and/or controls design, safety)	9	3	2	2	16
Facilities engineering (location analysis, layout, material handling, warehousing)	6	3	3	5	17
Inventory planning and control or lean systems	9	2	3	3	17
Manufacturing engineering (design for manufacturing, manufacturing processes selection and management)	12	9	7	5	33
Operations engineering (material or personnel flow planning, scheduling, or balancing, performance metrics)	7	3	3	2	15
Quality and reliability engineering (control charts, acceptance sampling, quality management or planning)	9	2	5	3	19
Supply chain management and/or logistics (supply chains from suppliers through customers)	8	3	1	3	15
Industrial and systems engineering (process or procedures design, life-cycle analysis, integrated system requirements analysis including such aspects as equipment, information, energy, materials, and/or people)	11	6	4	3	24
Work design and/or work measurement (methods engineering, standards, productivity analysis, etc.)	7	5	4	5	21
Percentage	40.3%	22.5%	18.2%	19.0%	

9.2

College of Engineering Recent Alumni Survey. A different survey was sent through an e-mailed link to 2,236 alumni of the Tennessee Tech College of Engineering who had graduated within the past five years. The number of alumni who opened the e-mail was 750 for a 33.5% open rate, which is above average for an e-mail message of this type. The click rate was 5% with 112 clicks, which is about average, and 105 alumni completed the survey. Table 11 provides a summary of the survey results.

Table 11. Survey of Recent Tennessee Tech College of Engineering Alumni

Question	Response	Number of Responses	Percent of Responses
Please select the major in which you earned your BS degree.	Chemical Engineering	10	9.5%
	Civil Engineering	18	17.1%
	Computer Engineering	5	4.8%
	Computer Science	14	13.3%
	Electrical Engineering	14	13.3%
	Engineering Technology	11	10.5%
	Mechanical Engineering	33	31.4%
	Engineering (joint program with ETSU)	0	0.0%
Do your plans during the next five years include enrolling for a graduate degree?	Yes	37	35.2%
	No	68	64.8%
If yes, what is your planned graduate degree, assuming all of the following degrees are available? (Note: Multiple answers could be selected, and 54 selections were made by the 37 alumni who responded "Yes" to plans for a graduate degree.)	Master's degree in Chemical Engineering	1	1.8%
	Master's degree in Civil Engineering	2	3.7%
	Master's degree in Computer Science	4	7.4%
	Master's degree in Electrical and Computer Engineering	5	9.3%
	Master's degree in Engineering Management	8	14.8%
	Master's degree in Industrial and Systems Engineering	2	3.7%
	Master's degree in Mechanical Engineering	3	5.6%
	Master's degree in an engineering field not listed above	6	11.1%
	Master's degree in a different field, not engineering or computer science	1	1.8%
	MBA – Master of Business Administration	11	20.4%
	Another type of graduate degree (e.g., MD, DO, DDS, JD, PhD)	9	16.7%
	Uncertain	2	3.7%

9.2

Although the number of positive responses is small for an MSISE degree, the number of alumni who indicated their planned graduate degree is a Master's in ISE is the same as the number indicating a Master's in Civil Engineering and only one less than the number indicating a Master's in Mechanical Engineering even though none of the respondents had an undergraduate degree in ISE. These results indicate that the MSISE, with appropriate marketing, could be successful in enrolling a sustainable number of students for a quality degree program.

Current Students Survey. A total of 2300+ students in the College of Engineering were surveyed after the Spring 2023 Semester. There were only 37 responses as the survey was sent during intersession break. Two questions were asked.

1. If the M.S. in Industrial Systems Engineering is available at TTU, how likely is it that you will consider pursuing it in the future?

    Extremely Likely: 2 (7%)
    Very Likely: 10 (28%)
    Somewhat Unlikely: 14 (38%)
    Extremely Unlikely: 10 (27%)

2. Obtaining an M.S. in Industrial Systems Engineering will enhance my employment prospects and professional growth opportunities.

    Extremely Likely: 5 (14%)
    Very Likely: 22 (61%)
    Somewhat Unlikely: 5 (14%)
    Extremely Unlikely: 4 (11%)

This survey indicates that over one-third of the responding students thought it likely that they would pursue a Master's in ISE. Additionally, three-fourths of the responding students acknowledged that obtaining a Master's in ISE would be beneficial to their career and professional growth. While the overall response rate was only 1.6%, the responses are favorable. As with the other surveys, these results indicate that the MSISE, with appropriate marketing, could be successful in enrolling a sustainable number of students for a quality degree program.

Existing Programs Offered at Public and Private Tennessee Universities

Existing Tennessee Academic Programs with the Same or Similar CIP Code. This section provides information on existing Tennessee programs in Industrial Engineering, Systems Engineering, and Engineering Management.

Industrial Engineering Programs (CIP 14.3501)

Currently, only the University of Tennessee at Knoxville (UTK) offers degrees with the same CIP code, i.e., BS, MS, and PhD degrees in Industrial Engineering. No institution offers a degree in Systems Engineering alone or in Industrial and Systems Engineering. Both THEC's searchable Academic Program Inventory [10] and the UTK *2023-24 Graduate Catalog* [11] list Systems Engineering, Automotive Manufacturing, and Engineering Management concentrations for the MS in IE at UTK. The UTK *2023-24 Graduate Catalog* [11] refers students to the Industrial and Systems Engineering Department's *Graduate Handbook* [12] for details on these concentrations. The Department's *Graduate Handbook* lists the following "three areas of study for the Master of Science program in the Department of Industrial and Systems Engineering" [12]:

- ▪ Industrial Engineering
- ▪ Engineering Management Concentration
- ▪ Reliability and Maintainability Engineering

The *Graduate Handbook* [12] provides no information on concentrations in either Systems Engineering or Automotive Manufacturing, and neither does the Industrial and Systems Engineering Department's website for the Master's program [13]. It appears that these concentrations are not active.

THEC's searchable Academic Program Inventory [10] lists concentrations in Industrial Engineering and Manufacturing Engineering for the Bachelor of Science in Engineering (BSE) program at the University of Tennessee at Martin (UTM). However, neither the UTM website [14] nor the UTM *2023-24 Undergraduate Catalog* [15] lists the Industrial Engineering concentration for the BSE degree. It appears that the Industrial Engineering concentration is not active.

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Systems Engineering Programs (CIP 14.2701)

According to THEC's searchable Academic Program Inventory [10], no institution offers a degree in Systems Engineering alone or in the combined Industrial and Systems Engineering. As noted previously, Systems Engineering is listed as a concentration for the MSIE at UTK, but this concentration does not appear to be active.

Engineering Management (CIP 15-1501) and Other Programs

Faculty with ISE backgrounds often offer degree programs or certificates related to Engineering Management or to Risk and Reliability, so these programs are also reported here.

In addition to Tennessee Tech University [16], Master of Science in Engineering Management (MSEM) degrees are offered at multiple public institutions in Tennessee, as follows.

- The University of Memphis offers a Master of Science in Engineering Management (MSEM or MS) degrees with a choice of two concentrations: Manufacturing [17] or Transportation [18].
- The University of Tennessee Chattanooga offers a Master of Science degree in Engineering Management [19], which also offers a concentration in Construction Management [20].
- As of Fall semester 2023, the University of Tennessee at Knoxville offers a Master of Science in Engineering Management. UTK's Industrial and Systems Engineering Department also offers the MSIE degree with a concentration in Engineering Management [12], although the THEC Academic Program Inventory *Comprehensive Report* for UTK [21] shows that this concentration is being phased out in Spring 2024. The ISE Department participates in offering a related interdisciplinary degree, the Master of Science in Reliability and Maintainability Engineering [22].
- Middle Tennessee State University offers a Master of Science in Professional Science with an Engineering Management concentration [23].

Private universities offering ISE-related programs include Vanderbilt University and Christian Brothers University.

- Vanderbilt offers a Master of Engineering degree in two related areas: Engineering Management [24] and Risk, Reliability, and Resilience Engineering [25]. An engineering management minor [26] is available to undergraduate engineering students at Vanderbilt.
- Christian Brothers University offers both BS [27] and MS [28] degrees in engineering management. The BS degree [27] has four concentrations for selection: data analytics, engineering studies, packaging, or game design.

Differences in the Proposed Program as Compared to Existing Programs. This section explains how the proposed MSISE is unique in comparison to other Tennessee programs with the same or similar CIP codes. Because Bachelor's programs are significantly different in focus and credit hours than Master's degree programs, only programs at the Master's level are compared.

<div style="text-align:center">MSISE Programs versus MS Programs in Engineering Management</div>

Although MSEM degrees include a selection of engineering topics, instruction in these degrees also covers business and management topics. An MSISE degree that is not an engineering management concentration has far greater emphasis on quantitative topics and data analytics. The content of the MSEM degree differs substantially from the content of an MSISE or MSIE degree program. Thus, the proposed MSISE is different from existing MSEM programs in Tennessee.

9.2

<div style="text-align:center">Proposed Tennessee Tech MSISE versus MS Programs in Risk and Reliability Engineering</div>

Although some overlap exists in statistics and data analysis courses with the proposed MSISE program, the MS programs in risk and reliability engineering at UTK and Vanderbilt are much more narrowly focused on the reliability of equipment or on risk and reliability applications in other disciplines such as civil, electrical, or mechanical engineering. The breadth of the proposed MSISE at Tennessee Tech is critical to ensure that students with undergraduate degrees in other disciplines gain a clear understanding of industrial and systems engineering rather than a portion of the discipline.

<div style="text-align:center">Proposed Tennessee Tech MSISE versus UTK's MSIE</div>

As noted previously, Tennessee Tech's proposed MSISE program will provide breadth in industrial and systems engineering and depth in data analysis and modeling. The primary differences in the proposed MSISE program and the MSIE program at UTK are as follows:

- The UTK degree is the MS in Industrial Engineering, not the MS in ISE. The Tennessee Tech MSISE program will have required content in systems engineering. UTK's program permits inclusion of this content but does not require it.
- The Tennessee Tech program will be designed to facilitate engineering graduates in other disciplines to achieve a breadth of knowledge related to ISE while also gaining depth in data modeling and analysis. The UTK program permits this approach but allows other emphases as well. To guarantee breadth in ISE, the Tennessee Tech program will require focused electives in three or four areas for the thesis option and in four areas for the project option. The electives listed for the UTK MSIE program in the *Graduate Handbook* [12] do not guarantee this breadth.
- Based on the UTK core courses and listed electives, both programs have strength in data modeling and analysis. Students in the proposed MSISE at Tennessee Tech will earn a minimum of 15 or 18 credits in courses focused on these topics. Students in UTK's

program may earn a similar or greater number of credits, depending on the electives selected in their programs of study.

Table 12 provides a comparison of the proposed MSISE program with the UTK MSIE program.

Table 12. Comparison of Proposed MSISE with UTK's MS (Industrial Engineering Track)

Program Features	Tennessee Tech's Proposed MSISE	UTK's MSIE
Degree Name	Industrial and Systems Engineering	Industrial Engineering
Concentrations	None	Engineering Management (to be phased out Spring 2024)
Credit Hours	32	32
Options	Thesis or Project	Thesis or Project
Prerequisites	Calculus-based Probability and Statistics Linear Algebra Engineering Economy (or graduate course will be required)	IE 200 Engineering Statistics IE 301 Operations Research in IE I IE 405 Engineering Economic Analysis
Core Courses	9 ISE credits	9 IE credits
Electives	9 credits in 3 focused areas or 12 credits in 4 focused areas for thesis option; 12 credits in 4 focused areas for project option	9 credits for thesis option; 12 credits for project option
Technical Electives	3 credits for thesis option; 6 credits for project option; all credits in selected mathematics courses	6 elective credits, usually Computer Science, Math, or Statistics, selected with major professor
Seminar	2 credits for professionalism core	2 credits
Thesis or Projects	6-9 credits for thesis option; 3 credits for project option	6 credits for thesis option; 3 credits for project option

Articulation and Transfer

The proposed program is an MS degree, not a BS degree, so this section is not applicable. However, transfer credit for the MSISE degree will be evaluated in compliance with existing policies for graduate transfer credit at Tennessee Tech.

9.2

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9.2

APPENDIX A – LETTERS OF SUPPORT

This appendix contains letters of support from the following organizations.

ATC Automation
Cummins Filtration
FedEx
JR Automation
Tenneco

9.2

10/31/2022

To whom it may concern:

ATC Automation in Cookeville, TN would find benefit to the skills acquired in a Bachelor of Science in Industrial and Systems Engineering (BSISE) degree program for current and future employees. We would also like to partner and assist.

We've always seen the Industrial Engineering program as being a great blend of math, computer science, and business with the engineering mindset. This leads to graduates who can be plugged into many different areas of our company. We have even used many pieces of software here at ATC Automation written by Industrial Engineers.

We can communicate with current employees who would benefit from the program and encourage them to enroll with more information in our flow down. Even though we already attend job fairs currently, we would also be interested in sponsoring tours, job shadowing and internships.

This would a great benefit to the community and current industry needs and can help as needed.

Regards,

Ethan Bernhardt
President, ATC Automation

9.2

Filtration

DR. Chris Wilson   Nov 1
Tennessee Tech University

Dear Dr. Wilson,

As manufacturing is transforming into the next phase, "Industrial 4.0" there is a need for additional skillset of new graduates that are hitting the work field in MFG. With respect to I4.0 this has created a need to have greater integration of all these functions of MFG into these skillsets complimentary to Engineering Degrees. Decisions are now driven more based on holistic approach of incoming data from systems analysis and evaluation. I'd like to stress that this is built on the premise on the traditional engineering disciplines of mathematics, physics and MFG Lead Design but with the need to have an integrated systems approach of all the MFG Functions.

In addition, industry is looking for stronger individuals with systems integration approach that will bridge the gaps that we are seeing in the I4.0 transition. I hope this feedback will help in any new degree opportunities that TTU may consider.

Best Regards,

Jeff A. Bowerman
Global MFG Director
Cummins Filtration Cookeville
Jeff.A.Bowerman@Cummins.Com

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1200 Fleetguard Road
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Phone 1 931 526 9551
Fax 1 931 528 9583
cumminsfiltration.com

9.2

FedEx ®

Services

9.2

November 10, 2022

Dr. Chris Wilson
General and Basic Engineering Department
Tennessee Tech University
P.O. Box 5002
Cookeville, TN 38505

Dear Dr. Wilson:

It was great talking with you. I am very excited to hear that Tennessee Tech is proposing to develop a new Master of Science degree program in Industrial and Systems Engineering (ISE). As a global transportation and logistics company headquartered in Memphis, TN, FedEx is a major employer of engineering talent in Tennessee and around the globe. We employ Industrial and Systems Engineers (both B.S and M.S.) in traditional ISE roles like Operational & Process Engineering and Project Management, as well as in roles like Data Analytics, Systems Modeling and Operations Research that also fall under the broad ISE umbrella.

Any help I can provide you in developing this program will be especially gratifying for me, considering I have both a B.S. and an M.S. in Industrial Engineering. FedEx hired me 26 years ago out of University of Alabama's M.S.I.E program, which is a testimony to FedEx's long-standing commitment to hiring such talent. I can also proudly say that my ISE coursework was instrumental in my growth within FedEx to where I am now heading a global Pricing organization employing over 200 employees with those very skills that got me into FedEx.

Please consider this letter as a support for your efforts to develop the ISE program, and an offer to serve as a contact for input in its development. Additionally, as an employer of the exact skills that the ISE program would develop in its graduates, both my organization (FedEx Pricing) as well as other FedEx departments in Memphis and the USA would be very interested in hiring both interns and graduates of the ISE program. FedEx also provides benefits for employees for their continued education that may also avail of this ISE program. I would also be delighted to serve as a member of an external advisory board for the program.

Thank you for the information about this potential new program. I look forward to hearing from you about its progress.

Sincerely,

Aashish Gahlaut
Vice President, Marketing - Enterprise Pricing
Mobile: +1 (901) 409-8467
E-mail: agahlaut@fedex.com

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JR AUTOMATION
A Hitachi Group Company

4190 Sunnyside Dr.
Holland, MI 49424
833.800.7630
jrautomation.com

10/7/2022

To whom it may concern:

JR Automation in Nashville, TN would find benefit to the skills acquired in a Bachelor of Science in Industrial and Systems Engineering (BSISE) degree program for current and future employees.   We would also like to partner and assist.

We can communicate with current employees who would benefit from the program and encourage them to enroll with more information in our flow down.
Currently JR automation offers tuition assistance for full time employees with tuition reimbursement for those who are employed for a year, and commit to two years in the field of study at JR.

Even though we already attend job fairs currently, we would also be interested in sponsoring tours, job shadowing and internships.

This would a great benefit to the community and current industry needs and can help as needed.

Regards,

Tessa Powell
Human Resource Manager South Division

9.2

TENNECO

Dr. Chris Wilson
General and Basic Engineering Department
Tennessee Tech University
P.O. Box 5002
Cookeville, TN 38505

November 1, 2022

Dr. Chris Wilson,

We have received word that the Tennessee Tech College of Engineering is reviewing the opportunity to develop a Master of Science in Industrial and Systems Engineering (MSISE) degree program.   As part of this, you are investigating the interest and support for a MSISE program from local industry.

Tenneco has supported TTU Engineering often in the past, through hiring multiple co-ops over the years (some who have hired on full time), and allowing senior projects when the opportunity arises.

The local Tenneco (Smithville) plant believes that we would be able to support a MSISE program through:

- Encouraging employees who would benefit from the program to enroll
- Funding educational benefits for employees who enroll in the program
- Recruiting and hiring program graduates, when the opportunity is there
- Supporting student projects for students when possible
- Providing speakers or coordinating facility tours for ISE courses or student organizations
- Serving as a member of an external Board of Advisors for the program

Thank you for contacting us for our input regarding higher education.

Greg Tompkins
Plant Manager
Tenneco Automotive
Smithville, Tennessee

APPENDIX B – ENROLLMENT AND GRADUATION PROJECTIONS

Projected enrollments and numbers of graduates were estimated separately for on-campus and online student populations.

On-campus Enrollment
Enrollment estimates were based on interest expressed by alumni for the MSISE from the survey of recent alumni. Interest in the MSISE was the same as interest in the MS in Civil Engineering (MSCE).   The MSCE program has averaged 5.6 new students enrolling each fall during the past five years (2018-2022), along with an average continuing enrollment of 13.0 students for an average total enrollment of 18.6 students . These values were used in projecting the on-campus enrollments in the MSISE.

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The Tennessee Tech Office of Institutional Assessment, Research, and Effectiveness provided data showing a one-year persistence rate from 2017-2021 of 84.4% for on-campus fall MS graduate student cohorts in the College of Engineering and an average time-to-degree of 2.0 years. These data were used in projecting enrollments for on-campus students, along with the following assumptions.

- No students will earn a degree within one year of enrollment. Although the IARE data show that a number of students in existing, on-campus MS programs do complete their degrees within one year of enrollment, many of these programs have fast-track options allowing students to earn graduate credit as undergraduates to complete their MS degrees more quickly. The MSISE will not initially have a fast-track option.
- All students still in the program after two years will graduate during their third year, and 46.1% of students returning for their second year will graduate during that year.
- Enrollments are projected with the expectation that three faculty will have primary responsibility for the MSISE program.
- An attrition rate of 15.6% is applied for the on-campus new students from the first to the second fall semester, and the same rate is applied for returning students from the second fall semester to the third fall semester.

Table B.1 shows the enrollment and graduation projections for on-campus students based on these data and assumptions.

Table B.1. Enrollment and Graduation Projections for On-Campus MSISE Students

Year	Academic Year	New Students	Projected Total Fall Enrollment	Projected Attrition from Incoming Class	Projected Graduates
1	Spring 2025	2	2	0	0
2	2025-26	4	6	1	0
3	2026-27	4	9	1	3
4	2027-28	5	10	1	3
5	2028-29	6	12	1	4

9.2

Online Enrollment

The online enrollment estimates were based on data from enrollments in Tennessee Tech's MS in Engineering Management program, the only online program for which comparable data were available. However, the MSEM program began only in 2020, and the first graduates are expected in December 2022. Based on data from IARE for the MSEM program, the following assumptions were used to project online enrollments and graduates.

- No students will earn a degree during the first two years of enrollment. Although a few MSEM students complete two courses in a semester, most complete only one course each semester, so the expected time to complete their online degrees is 11 semesters or almost four years. Similarly, for MSISE students, the expected completion time is ten semesters, which exceeds three years.
- All students still in the program after three years will graduate during their fourth year, and 10.0% of students returning for their third year will graduate during that year.
- Enrollments are projected with the expectation that three faculty will have primary responsibility for the MSISE program.
- Using the MSEM historical results, which occurred during the pandemic, an attrition rate of 80.0% is applied for the online new students from the first to the second fall semester. Also in alignment with the MSEM data, the attrition for returning students beyond the second fall semester is negligible.

Table B.2 shows the enrollment and graduate projections based on these assumptions.

Table B.2. Enrollment and Graduation Projections for Online MSISE Students

Year	Academic Year	New Students	Projected Total Fall Enrollment	Projected Attrition from Incoming Class	Projected Graduates
1	Spring 2025	2	2	1	0
2	2025-26	2	3	2	0
3	2026-27	3	4	2	0
4	2027-28	4	6	3	0
5	2028-29	4	7	3	1

Combining the enrollment, attrition, and graduate data for on-campus and online students results in Table B.3, which provides the data totals shown in Table 9 of this document.

Table B.3. Enrollment and Graduation Projections for All MSISE Students

Year	Academic Year	New Students	Projected Total Fall Enrollment	Projected Attrition from Incoming Class	Projected Graduates
1	Spring 2025	4	4	1	0
2	2025-26	6	9	3	0
3	2026-27	7	13	3	3
4	2027-28	9	16	4	3
5	2028-29	10	19	4	5