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2022 November 18 – Board of Trustees Academic, Research, and Student Success Committee Agenda and Minutes

East Tennessee State University

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EAST TENNESSEE STATE UNIVERSITY
BOARD OF TRUSTEES
ACADEMIC, RESEARCH, AND STUDENT SUCCESS COMMITTEE
NOVEMBER 2022 MEETING

8:00–9:15 a.m. EST
Friday
November 18, 2022

East Tennessee Room
D.P. Culp Student Center
412 J.L. Seehorn Road
Johnson City, TN

COMMITTEE MEMBERS

Janet Ayers, Committee Chair
Charles Allen, Jr.
Dr. Virginia Foley
Dr. Linda Latimer
Melissa Steagall-Jones

—
AGENDA

- I. Call to Order
- II. Roll Call
- III. [Approval of the Committee Minutes from September 16, 2022](#)

ACTION ITEMS

- IV. [Approval of Expedited Letter of Notification Regarding Establishment of a B.S. in Mechatronics Engineering – McCorkle \(15 minutes\)](#)

INFORMATION AND DISCUSSION ITEMS

- V. [Overview of ETSU Global Year: Ecuador 2022-23 – Keller/Quinn \(15 minutes\)](#)
- VI. [BlueSky Tennessee Institute Update – Pittarese/Leon \(15 minutes\)](#)
- VII. [Overview of New and Expanded Student Success Initiatives – Kirkwood/Roberts \(15 minutes\)](#)

GENERAL INFORMATION ITEMS

- VIII. Committee Discussions (15 minutes)

- General Discussion

IX. Other Business

X. Adjournment

EAST TENNESSEE STATE UNIVERSITY
BOARD OF TRUSTEES

ACTION ITEM

DATE: November 18, 2022

ITEM: Approval of the Minutes from September 16, 2022

COMMITTEE: Academic, Research, and Student Success Committee

RECOMMENDED ACTION: Approve

PRESENTED BY: Adam Green
Board Secretary

The minutes of the September 16, 2022 meeting of the Academic, Research, and Student Success Committee are included in the meeting materials.

MOTION: I move that the Board of Trustees adopt the resolution, approving the minutes as outlined in the meeting materials.

RESOLVED: The reading of the minutes of the September 16, 2022 meeting of the Academic, Research, and Student Success Committee is omitted, and the minutes are approved as presented in the meeting materials, provided that the Secretary is authorized to make any necessary edits to correct spelling errors, grammatical errors, format errors, or other technical errors subsequently identified.

EAST TENNESSEE STATE UNIVERSITY
BOARD OF TRUSTEES
ACADEMIC, RESEARCH, AND STUDENT SUCCESS COMMITTEE

MINUTES

September 16, 2022
Johnson City, Tennessee

The East Tennessee State University Board of Trustees Academic, Research, and Student Success Committee met on Friday, September 16, 2022, at 8:00 a.m. in the East Tennessee Room of the D.P. Culp Student Center.

I. Call to Order

Committee Chair Janet Ayers called the meeting to order at 8:00 a.m.

II. Roll Call

Board Secretary Dr. Adam Green led the roll call and confirmed to the Committee Chair that a quorum was present.

Committee members present were:

Trustee Charles Allen*
Trustee Virginia Foley
Board Chair Dr. Linda Latimer
Trustee Melissa Steagall-Jones*
Committee Chair Janet Ayers

**Note: Arrived moments after the roll call was taken.*

III. Approval of the Academic, Research, and Student Success Committee Minutes from April 22, 2022

The minutes from April 22, 2022, were approved as submitted, with Trustee Foley making the motion and Board Chair Dr. Latimer seconding the motion. The motion passed unanimously.

IV. Action Item: Recommendation for Tenure upon Appointment

Provost Kimberly McCorkle presented a recommendation for tenure upon appointment of three new faculty members including: Dr. Walid Alali from the Department of Biostatistics and Epidemiology in the College of Public Health, Ms. Elizabeth Blair Jones from the Sherrod Library, and Dr. Holly Wei from the College of Nursing.

The committee voted to approve the faculty rank and the awarding of tenure to the faculty members recommended by the President, in the particular unit, department, or college as outlined in the meeting materials. Trustee Foley made the motion, and Board Chair Dr. Latimer seconded the motion. The motion passed unanimously.

V. Academic Action Notification for Period of January 1, 2022, through July 31, 2022

Provost McCorkle updated the committee on academic actions taken between the period of January 1, 2022 through July 31, 2022.

A summary of action items that required notification to the Tennessee Higher Education Commission (THEC) included:

<i>Type of Action – THEC Notification</i>	<i>Quantity</i>
Academic Program Modification	1
Revise Curriculum Substantive – Credit Change	2
Establish New Certificate Undergraduate	1
Establish New Certificate Graduate	1
Establish New Concentration in an Existing Program	1
Change Name/Title of Academic Program or Concentration	2

A summary of action items that required approval through ETSU’s shared governance process included:

<i>Type of Action – University Level Approval</i>	<i>Quantity</i>
Establish Academic Unit: Center or Institute	2
Revise Curriculum Substantive	8
Establish Academic Minor	1
Revise Academic Minor	1
Establish Articulation Policy (Degrees & Certificates)	2
Establish Program Policy	1

Revise Program Policy - Admission	13
Revise Program Policy - Progression	1
Revise Articulation Agreement	2

Provost McCorkle noted that all curricular changes and modifications described in the meeting materials are made to ensure program quality, student success, accreditation standards, enrollment goals, or better preparation of students for the workforce.

Topics of discussion among Trustees included:

- Brewing and Distillation Studies—Given the growing number of breweries in Appalachia, it is anticipated that community members interested in professional growth will welcome the change in the Brewing and Distillation Studies Certificate. The interaction of the fermentation process and scientific research was also discussed, noting economic progress opportunities.
- Modifications in B.B.A. Supply Chain Management—Changes to this program are timely nationally and locally. Along with Brewing and Distillation Studies, they represent a balanced approach to attracting and retaining talent in the region and embracing Appalachian culture in a positive light.
- Provost McCorkle added that the faculty is looking to expand the minor and the certificate into a standalone bachelor’s program for Brewing and Distillation Studies. There is considerable interest from students and employers in the region, and this is one of the planned curriculum expansions.

VI. Annual Institutional Review for Graduate Medical Education

Dr. David Linville, Associate Vice President for Clinical Affairs, presented a report on the annual institutional review for the Quillen College of Medicine (COM) residency and fellowship training programs, also known as Graduate Medical Education (GME) programs. The 2019-20 and the 2020-21 reports were included in the agenda materials.

VII. SACSCOC Reaffirmation Update

Provost Kimberly McCorkle and Dr. Cheri Clavier, Director of Institutional Effectiveness and Accreditation Liaison, updated the committee on the reaffirmation of accreditation with the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC). Dr. Clavier explained the timeline and process for reaffirmation of accreditation:

- The compliance certification for ETSU’s differentiated review, which included ETSU’s narrative response and supporting evidence, was submitted to SACSCOC on September 8, 2022.
- An off-site reaffirmation review committee consisting of a chair and eight peer evaluators will conduct a review on November 1-November 2, 2022.
- The Quality Enhancement Plan (QEP) and focused report to address any findings of the off-site reaffirmation review committee are due on February 23, 2023.
- An on-site reaffirmation review committee consisting of a chair and eight to ten peer evaluators, plus a QEP lead evaluator, will conduct a focused evaluation from April 3-6, 2023.
- The SACSCOC Board of Trustees will make the final accreditation decision, which will be announced on December 5, 2023.

Dr. Clavier summarized her report by stating that she believes ETSU is compliant with all of the core requirements and standards and is confident that the university will receive reaffirmation in December 2023.

VIII. Office of Military and Veterans Services Update

Col. (Ret.) Dan Bishop, Director of Military and Veteran Services, provided an overview of the university's support for military and veteran students. He discussed the office's roles and responsibilities, the spring/summer 2022 initiatives, and the unit strategy for the 2022-23 academic year including: Certification; Recruiting; Retention; Post-Graduation Employment; and Engagement

Col. Bishop reported that since he became Director of Military and Veteran Services six months ago, the following outcomes have been achieved:

- A successful compliance inspection at Gatton College of Pharmacy.
- Approval of an in-state tuition rate for the majority of ETSU students affiliated with the military has been authorized.
- ETSU has proactively engaged with the Virginia National Guard, requesting that Guardsmen be allowed to use their DoD federal tuition assistance match at ETSU.

Topics of discussion among Trustees included:

- Tennessee Strong (Support, Training, and Renewing Opportunity for National Guardsmen). This is the tuition assistance program for the state.
- The opportunity for ETSU to have a physical presence at off-base military education centers and ETSU online opportunities would allow service members to be directly integrated on campus after they are discharged.

- The challenges for veterans who are balancing part-time or full-time work, families, and education (Ninety percent or higher work full-time).

IX. ETSU Research Corporation Update

David Golden, CEO of the ETSU Research Corporation, updated the committee on the organization's efforts to fulfill its mission of expanding ETSU's impact in research and innovation across disciplines. According to Mr. Golden, an imperative of the Research Corporation is reimagining research; it is not just the typical approach of entering a lab or field with a hypothesis in mind, observing, gathering evidence, and approving one or the other. This effort requires using data to anticipate what the world will do in the future. It also assumes the university can forecast the future and does so faster and better than its competitors. ETSU would benefit from a competitive advantage. This type of forward focused analysis is an example of the work that the Research Corporation hopes to explore in the near future.

Dr. Stephen Marshall, CMO of ETSU Research Corporation, discussed the activities occurring within the Rugged Buc Labs Content Studio (RBL), an experiential media marketing venue accessible to all students on campus. The following are included under the umbrella of Rugged Buc Labs:

- Dr. Marshall's association with the Brand Storytelling Network, a digital network connecting filmmakers and brands, resulted in a brand film certification for professionals.
- RBL's partnerships with NETNHub and Create Appalachia encourage workforce development and regional branding. With these collaborators, a weekly TV program featuring the Appalachian area is in development, providing an opportunity to tell the region's story while involving students from across the institution.
- “Trailblazer” is an apprenticeship/masterclass program with world-class instructors. In this program, students create brand storytelling, cinematic, and cinema graphic content where they tell the story of the research occurring at ETSU.

Dr. Marshall also spoke about the Woods Hole Oceanographic Institution and the opportunity they have provided to work on a character-driven brand film that shows their unique multidisciplinary innovation and research.

Mr. Golden continued the presentation by discussing plans related to partnerships focused on the bio-engineering curriculum. Advances in biological science, computing, automation, and artificial intelligence are fueling a new wave of innovation. Four arenas of biological innovation include biomolecules, biosystems, biomachine interfaces, and biocomputing.

Mr. Golden also noted that on October 27, 2022, at 9:00 a.m., the ETSU Research Corporation is hosting “Growing the Future: Symposium on Innovation and Education for the Bioeconomy” in ETSU’s Mary B. Martin Center for the Arts. This event will bring together industry leaders to highlight global bioeconomy opportunities and initiatives in the Appalachian Highlands.

Lastly, a report on the Appalachian Highlands Rural Innovation and Entrepreneurship Alliance for healthcare, science, and business development was presented. Ballad Health has seeded the new center with a one-million-dollar grant.

X. Committee Discussions

There were no further committee discussions.

XI. Other Business

No other business was brought before the committee.

XII. Adjournment

The committee was adjourned, with Trustee Allen making the motion and Trustee Foley making the second.

EAST TENNESSEE STATE UNIVERSITY
BOARD OF TRUSTEES

ACTION ITEM

DATE: November 18, 2022

ITEM: Approval of Expedited Letter of Notification Regarding
Establishment of a B.S. in Mechatronics Engineering

COMMITTEE: Academic, Research, and Student Success

RECOMMENDATION: Approve

PRESENTED BY: Dr. Kimberly D. McCorkle
Provost and Senior Vice President for Academics

The Expedited Letter of Notification (ELON) for the Bachelor of Science in Mechatronics Engineering is the first step in a series of review protocols necessary for the establishment of a new academic program. This item has been approved internally, including approval by Academic Council and President Noland, according to established academic approval processes. Pending approval by the Board of Trustees, the ELON will be sent to the Tennessee Higher Education Commission (THEC) where it will be posted for public comment. Upon completion of all required program development processes, the new program will be presented to the Board as a notification item before the proposed program implementation in Fall 2023.

The College of Business and Technology proposes to establish a B.S. in Mechatronics Engineering. This new program will reside in the current Department of Engineering, Engineering Technology and Surveying. Mechatronics Engineering is an interdisciplinary branch of engineering bringing together elements of mechanical engineering, electrical engineering, product engineering, electronic engineering systems, and a combination of robotics, computer science, systems, and controls.

The Tennessee Department of Labor projects engineering to be an area of strong employment demand through the year 2030. This demand translates to approximately 541 annual openings for engineers per year in the near future. In general, there is an anticipated 21.6 percent increase in STEM occupations through 2026. The proposed degree in mechatronics engineering will allow students to graduate and move directly into employment in an area of high demand.

The establishment of this stand-alone degree in mechatronics engineering will be a welcomed addition to the ETSU academic portfolio and will increase enrollment in the Department of Engineering, Engineering Technology and Surveying.

Attachments:

- Expedited Letter of Notification (ELON) for B.S. in Mechatronics Engineering

MOTION: I move that the Academic, Research, and Student Success Committee recommend adoption of the following Resolution by the Board of Trustees:

RESOLVED: The Expedited Letter of Notification (ELON) regarding the establishment of a Bachelor of Science in Mechatronics Engineering degree is approved by the Board as outlined in the meeting materials. The University is directed to submit the ELON with the Board's decision to the Tennessee Higher Education Commission for its consideration. Should THEC support the proposal during the post-external judgment determination, the University is instructed to complete any and all additional steps required by THEC and ETSU for full implementation of this new academic program.



EAST TENNESSEE STATE UNIVERSITY

EXPEDITED LETTER OF NOTIFICATION (LON)

BS Mechatronics Engineering

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**East Tennessee State University
Office of the President**

Box 70734 • Johnson City, Tennessee 37614-1710 • (423) 439-4211 • Fax: (423) 439-4004

November 2, 2022

Dr. Emily House
Executive Director
404 James Robertson
Parkway Suite 1900
Nashville, TN 37243

Dear Dr. House:

In accordance with Tennessee Higher Education Commission Policy A 1.6 section 1.6.4A, I am submitting this request for consideration to utilize the Expedited Academic Approval Process for the development of a Bachelor of Science, Mechatronics Engineering degree, at East Tennessee State University.

This degree is aligned with the definition of programs subject to approval for an expedited review as identified in section 1.6.2A. Mechatronics Engineering is in the identified CIP code area of 14-Engineering, on the THEC Expedited Letter of Notification checklist as a high-demand program in Science Technology, Engineering, and Mathematics (STEM).

Mechatronics combines mechanical and electrical engineering with robotics and systems controls. According to the U.S. Bureau of Labor Statistics, mechatronics engineering is expected to grow through 2026 at an above-average rate of 6.4 percent. The estimated annual salary for a mechatronics engineer is approximately \$99,040 per year. Substantial demand for mechatronics engineers exists within business and industry in Northeast Tennessee as well as across the state and nation. This program would greatly enhance ETSU's academic portfolio and would align with state and local efforts to increase high-quality employable graduates while enhancing the quality of life in our region.

Thank you for your consideration of this request and I look forward to your response.

Sincerely,

Brian Noland
President

cc: Dr. Julie Roberts, THEC Chief Academic Officer
Dr. Kimberly McCorkle, Provost and Senior Vice President for Academics, ETSU
Dr. Tony Pittarese, Dean, College of Business and Technology, ETSU



EMILY HOUSE
Executive Director

BILL LEE
Governor

STATE OF TENNESSEE
HIGHER EDUCATION COMMISSION
STUDENT ASSISTANCE CORPORATION
312 ROSA L. PARKS AVENUE, 9TH FLOOR
NASHVILLE, TENNESSEE 37243
(615) 741-3605

October 17, 2022

Dr. Brian Noland
President
East Tennessee State University
P.O. Box 70734
Johnson City, TN 37614

Dear President Noland:

Thank you for the submission of a formal request for consideration to utilize the Expedited Academic Approval Process for the proposed Mechatronics Engineering, Bachelor of Science (BS) program at East Tennessee State University.

After reviewing your letter, I approve ETSU's request to move forward to the Expedited Letter of Notification (ELON) stage for the proposed program. Please ensure the ELON is in alignment with THEC Academic Policy A1.6 – Expedited Academic Programs: Approval Process.

Best of luck in the continued development of this program.

Sincerely,

A handwritten signature in black ink, appearing to read "Emily House".

Emily House, PhD

cc: Kimberly McCorkle, ETSU Provost and Senior Vice President for Academics
William Flora, ETSU Associate Provost for Curriculum
Julie A. Roberts, THEC Chief Academic Officer
Katherine Bracket, THEC Director of Academic Affairs



EAST TENNESSEE STATE UNIVERSITY

Overview

Institution name proposed academic program, degree designation, proposed CIP code, and CIP code title:

Institution Name: East Tennessee State University

Proposed Academic Program: Mechatronics Engineering

Degree Designation: BS

Proposed CIP Code: 14.4201

CIP Code Title: Mechatronics, Robotics, and Automation Engineering

Academic Program Liaison (APL) Name and Contact Information:

Kimberly McCorkle

Provost and Senior Vice President for Academics

P.O. Box 70733

Johnson City, TN 37614

(423) 439-4811

mccorklek@etsu.edu

Proposed Implementation Timeline:

- ***Proposed date (month and year) of the institutional governing board's meeting to consider the proposed academic program for approval:***
It is anticipated that the ETSU Board of Trustees will consider this degree proposal at the November 2022 meeting.
- ***Proposed dates for the external judgment site visit:***
The external site visit will be in January of 2023.
- ***Estimated date of submission of the external review report to THEC and the institution (within 30 days following the site visit):***
The external review report would be due in February of 2023.
- ***Estimated date of institution's response to the external review (within 30 days of receiving the external reviewer's report):***
The ETSU institutional response to the external review would be submitted in March 2023.
- ***Proposed date (month and year) of the Tennessee Higher Education Commission meeting to consider the proposed academic program for approval:***
It is anticipated that the full ENAPP would be complete and ready for consideration at the May 2023 Commission meeting.
- ***Proposed implementation date (semester and year) when students will enroll in the proposed academic program:***
The program could begin accepting students in the fall semester (August) 2023

- **Estimated timeline for proposed programs that will seek programmatic accreditation**
- The program will apply for ABET (www.abet.org) accreditation. This is the same organization that currently accredits our Engineering Technology and Engineering Programs. The typical timeline is to apply for accreditation review after the first graduates have completed the degree which is anticipated to be *May 2027*.

Background and Overview

Background narrative:

The proposed degree program is a Bachelor of Science in Mechatronics Engineering. This degree and its cross-content infrastructure has recently become in demand by manufacturing. At ETSU our regional industry has shared the need to provide a workforce capable of implementing advanced manufacturing methods to remain competitive in a global economy. In Tennessee the number of employees in the manufacturing area accounts for 15.32% of the total output in the state, employing 11.47% of the workforce in 2018. Total output from manufacturing in Tennessee was \$56.01 billion in 2018. In addition, there were an average of 357,000 manufacturing employees in Tennessee in 2019, with an average annual compensation of \$70,521.26 in 2018.¹

Manufacturing is changing, and a new workforce is needed to implement these changes in the way we produce goods and materials. The accepted term for this seed change is “Industry 4.0”– which effectively states that to become competitive industry must adopt new production methods employing advanced technologies.² The generally accepted content areas needed to support the industry as it relates to the production of goods and materials in this new environment require advanced manufacturing techniques. This degree will support the workforce needs of Tennessee manufacturers. The areas of study for the degree include robotics, automation, advanced sensors systems, control systems, and other areas that when employed make manufacturers more competitive and able to produce goods at high quality with reduced labor costs. A formal definition is:

Mechatronics Engineering is an interdisciplinary branch of engineering that focuses on the integration of mechanical, electrical, and electronic engineering systems, and also includes a combination of robotics, electronics, computer science, telecommunications, systems, control, and product engineering.^{3,4}

The program of study will have the same credit hour requirements of other engineering degrees – 128 credit hours. The program will include math and science requirements inherent in engineering programs. The courses in the degree area will be related to robotics, automated production control, advanced sensor, security of production systems, production modeling, and other related areas with a core of Mechatronics courses comprising somewhere between 60 and 70 credits of the degree content. A review of other Mechatronics degree programs both in Tennessee and in other states shows that this is a standard allocation of credit hours needed for the degree area.^{5,6} While the Bureau of Labor Statistics only has data for Mechatronics Technology degrees the general area of Mechatronics Engineering is new and growing. A recent paper, June 2020, made the following findings:

¹ Tennessee 2020 Manufacturing Facts, National Association of Manufacturers, September .2020

² Manufacturers’ Guide to Industry 4.0 Technologies, NIST.gov, <https://www.nist.gov/mep/manufacturing-reports/current-state-manufacturing> , Sourced Oct. 2, 2022

The field of Mechatronics and Robotics Engineering (MRE) is emerging as a distinct academic discipline. Previously, courses in this field have been housed in departments of Mechanical Engineering, Electrical Engineering, or Computer Science, instead of a standalone department or curriculum. More recently, single, freestanding courses have increasingly grown into course sequences and concentrations, with entire baccalaureate and graduate degree programs now being offered. The field has been legitimized in recent years with the National Center for Education Statistics creating the Classification of Instructional Programs (CIP) code 14.201 Mechatronics, Robotics, and Automation Engineering. As of October 2019, ABET accredits a total of 9 B.S. programs in the field: 5 Mechatronics Engineering, 3 Robotics Engineering, 1 Mechatronics and Robotics Engineering, and none in Automation Engineering.³

The final curriculum to be submitted in a later document will address the specific direction and scope of past successful programs. Course and lab delivery will be on-ground, although some course content can be offered online.

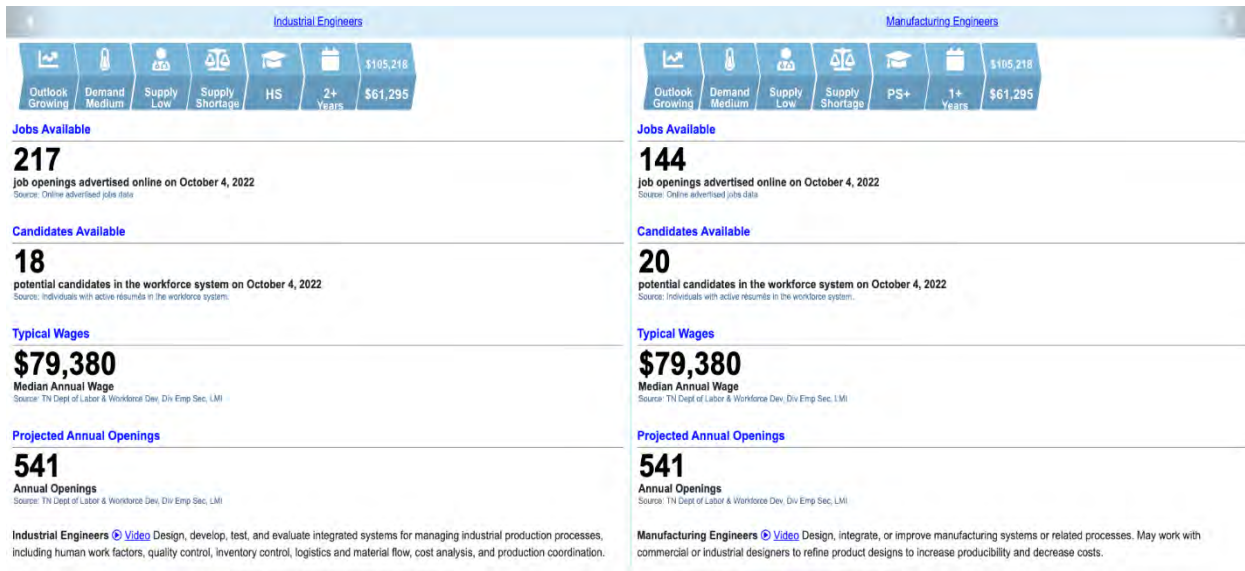
Justification for consideration of expedited policy:

A 2017 article in the *Tennessean* entitled “Tennessee manufacturers need skilled workers” noted Tennessee has a current deficit of technically skilled workers. According to the article, in 2017 nationally 47% of manufacturing requires additional skilled workers while for Tennessee that number was 60%. This number is further impacted by the large number of employees in manufacturing areas who will be retiring over the next 10 years. Another source indicates that Tennessee is shifting manufacturing practices and that currently employment concentration in advanced manufacturing is 31% above the national average for our manufacturing concerns in Tennessee.

Currently, in Tennessee, there is a shortfall of engineers in the areas related to manufacturing support (Industrial and Manufacturing Engineering). The Tennessee Department of Labor’s system to identify current openings versus available employees shows the overall need for developing more engineering programs and graduates to fill the needs of the state, shown in Figure 1. Further detail based on the Tennessee Department of Labor and Workforce Development shows that for Industrial engineering and Manufacturing engineering:

Growth plus replacement needs for Industrial Engineers in Tennessee are estimated to average about 541 openings per year from 2020-2030. Of these estimated 541 openings per year, 29.2% are due to growth (new positions) and 25.0% are due to exits (workers leaving the labor force), and 45.8% are due to transfers (workers changing occupations).

³ Mechatronics and Robotics Education: Standardizing Foundational Key Concepts, ASEE, June 2020, Perma Link: <https://peer.asee.org/34966>



Furthermore, a report produced by the Tennessee Department of Labor provided the need for additional growth for STEM graduates with the following commentary:

Tennessee will experience significant growth in STEM occupations over the decade through 2026. In 2016 there were 138,100 STEM employees. The level will increase to 167,950 in 2026. The 29,850 additional STEM jobs will make up 8.44 percent of the jobs being added in the state through 2026. Additionally, STEM occupations are projected to grow nearly twice as rapidly as all occupations in Tennessee. New STEM jobs as a whole are expected to grow by 21.6 percent from 2016 to 2026, while growth rate for all jobs is expected to be 11.4 percent. Although less than 10 percent of all new jobs in the state, STEM jobs are important because many are faster growing, high wage occupations for which significant shortages of job candidates exist and which are vital to the burgeoning information economy.⁴

In summary, Tennessee is facing shortages of engineers and STEM related jobs projecting into 2026. STEM related jobs will grow at twice the rate of all other occupations. In the upper East Tennessee region, specifically, manufacturing represents a large portion of employers. This degree will support both the workforce needs as well as provide graduates who are ready to adopt the latest technologies to optimize manufacturing output. This degree program will meet industry needs as well as offer graduates across the state, and especially those in northeast Tennessee and the Appalachian Highlands region, the credentials to compete for high-paying jobs.

Existing programs of study at the institution:

The proposed ETSU BS Mechatronics Engineering program is not being developed from an existing

⁴ Tennessee Department of Labor, STEM Jobs Report 2019, <https://www.jobs4tn.gov/admin/gsipub/htmlarea/uploads/LMI/Publications/STEMReport2019Updated.pdf>, sourced Oct 5, 2022

ETSU engineering program. The College of Business and Technology (CBAT) already houses engineering programs in the Department of Engineering, Engineering Technology and Surveying. The Mechatronics program will be housed in the current Department of Engineering, Engineering Technology and Surveying.

Community and industry partnerships:

Letters of support are included in the appendix, beginning on page 14. The letters are from the following ETSU partner organizations: Cross Company, Northeast State Community College, Siemens Industrial Automation, Inc., JTEKT North American Corporation, and SKF Lubrication Management.

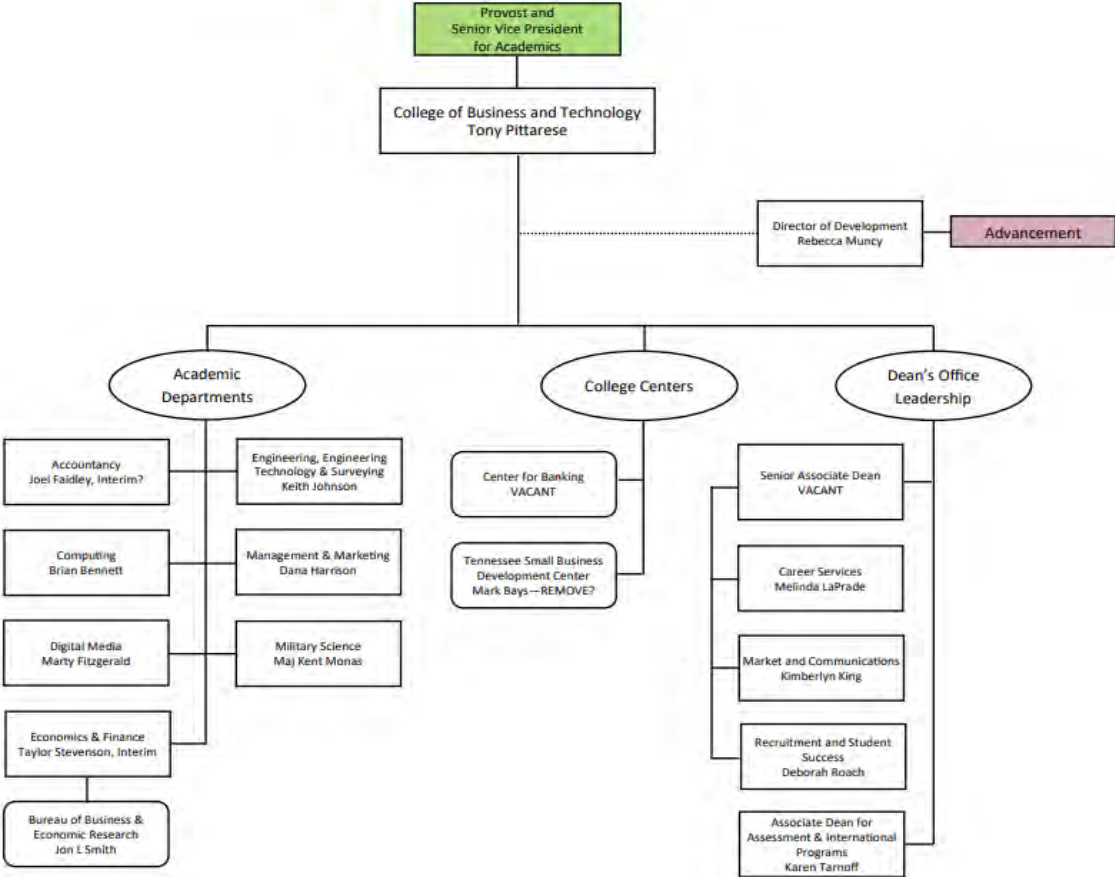
Accreditation

Accreditation:

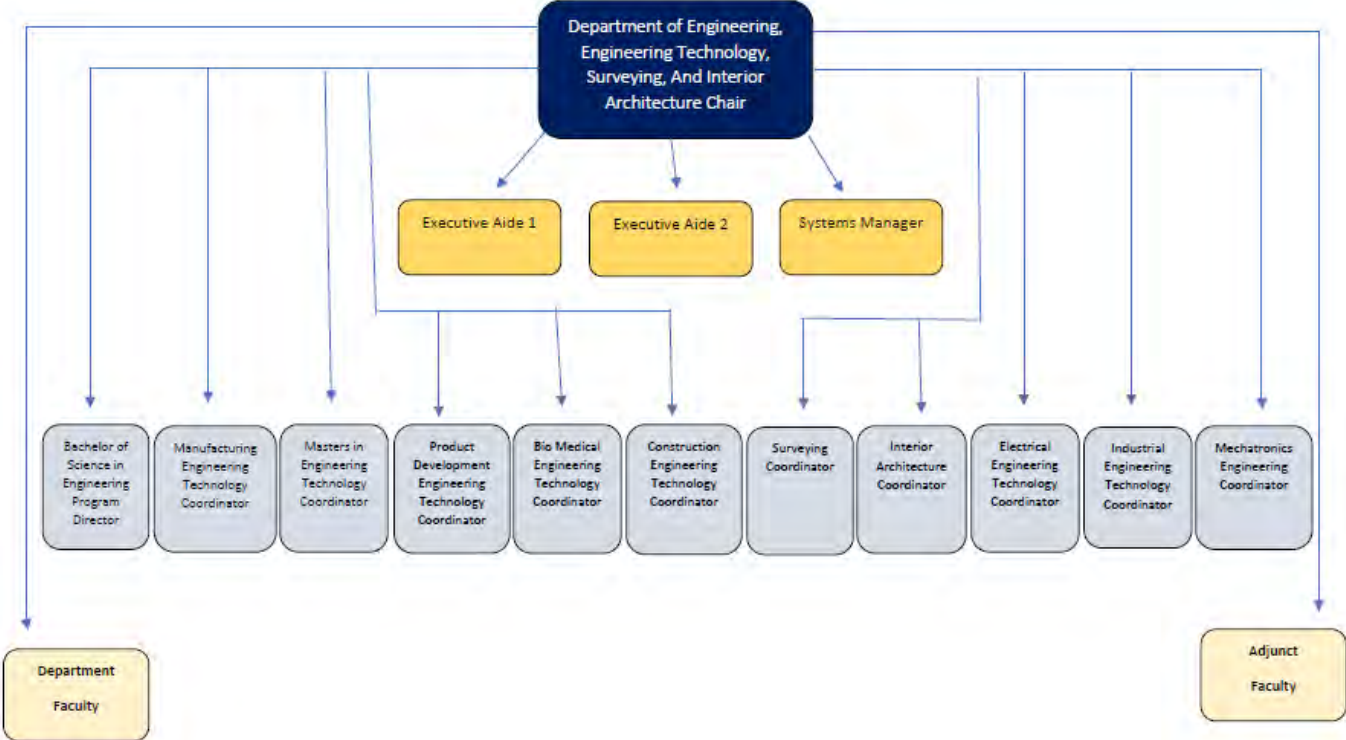
The program will apply for ABET (www.abet.org) accreditation. This is the same organization that currently accredits our Engineering Technology and Engineering Programs. The typical timeline of application for accreditation is to apply for review after the first graduates have completed the degree. Therefore, after four years of student participation in the program and after the first seniors have graduated an application will be made to ABET seeking accreditation. ABET will then conduct an onsite review of the program in the following Fall and then issue findings in the Summer. ETSU has never had an EAC/TAC program fail to gain or maintain ABET accreditation.

Administrative Structure

ETSU has, within the College of Business and Technology, a well established Department of Engineering, Engineering Technology, and Surveying. There will not be a need to establish a new academic unit for the proposed Mechatronics program. Note below, the current organizational flow chart for the College of Business and Technology.



Below is an additional flow chart for the Department of Engineering, Engineering Technology and Surveying indicating that Mechatronics Engineering will be within the structure of the current department.



Enrollment and Graduation Projections

Table 1 - Projected Enrollments and Graduates

Projected Enrollments and Graduates				
Year	Academic Year	Projected Total Fall Enrollment	Projected Attrition	Projected Graduates
1	2024-2025	8	2	0
2	2025-2026	15	3	0
3	2026-2027	25	5	0
4	2027-2028	40	7	6
5	2028-2029	55	9	12

Institutional Alignment and Demand

Alignment with State Master Plan and institutional mission profile:

The proposed ETSU BS Mechatronics Engineering degree aligns with the central theme of the THEC master plan which is to support Tennessee students and institutions toward greater success in workforce alignment while increasing the level of educational attainment across the state. Mechatronics is an emerging field of engineering that is identified as an occupational area considered to be above average in growth over the next decade. This program will enable students to access a high-quality education in a field that will have not only strong employment opportunities but will also have strong average salaries. Tennessee has a strong labor market for engineering related jobs and will have growth in that area with the Blue Oval plant, being built by Ford. Moreover, in Northeast Tennessee, a local partner, Eastman, Siemens, SKF, and other local employers are supportive of this program and the potential for graduates in this field. The BS Mechatronics degree will give graduates a competitive edge in the marketplace as well as enhance educational attainment across the region and state.

The East Tennessee State University's vision and mission statements center on providing educational opportunities for students not only to learn and grow but to be professionally prepared for employment. It is also central to the mission of the university to improve the quality of life in the region. The Mechatronics Engineering program will prepare students for post-graduation in the region and across the state and nation. Jobs in this field pay above-average wages and students will not only have individual opportunities but will also participate in growing the quality of life in the region.

The BS Mechatronics Engineering degree will enhance the ETSU portfolio of offerings and produce employable graduates that will make a positive difference in the region, state, and nation.

Student interest:

Student interest in all STEM-related areas is on the rise in the state. The Tennessee Department of Education is actively working to increase student interest in STEM-related fields. A 2019 report outlined growth and efforts to increase growth in student interest, the report noted the following:

In the 2016-2017 school year, 118 schools in Tennessee responded to the demand to grow local talent in emerging STEM fields and instituted special programs of study in the STEM cluster. District data from SY 17-18 suggest that 104 schools will implement a STEM program of study at the beginning of the SY.19 These figures demonstrate that there is an appetite among schools—and students—to explore STEM at the high school level, which bodes well for the growing number of postsecondary institutions to offer STEM-related programs.

This investment in STEM education for K-12 students will present itself as an increase in demand for STEM education in higher education institutions within the state. An article in the January 12, 2022 edition of the *Knoxville News Sentinel* noted that the Tennessee Higher Education Commission is incentivizing STEM education at Tennessee's colleges and universities. The following quote shows that the need is growing and Tennessee is responding by valuing STEM Education:

To meet demand for STEM and health care workers over the next decade, Tennessee may soon incentivize its community colleges and universities to recruit and graduate students in those fields.

The Tennessee Higher Education Commission is proposing a change to its funding formula that would give more money to colleges for students majoring in high-need academic fields. About a quarter of all associate degrees, a third of all bachelor degrees and over half of community college certificates would qualify for this premium, according to the Tennessee Higher Education Commission. Gov. Bill Lee asked the commission to adjust the formula to be more responsive to the workforce demands ahead in the next 10 years. The extra money will help community colleges and universities afford creating and supporting high-cost degrees like engineering and other STEM programs.

Governor Bill Lee and the TN Dept. of Education released in the Fall of 2021 a presentation showing the effects of growing STEM demand in the State. Currently there are 61 high schools that are designated as STEM priority schools. The reality is that if STEM offerings are not increased in higher education, we will soon not have enough offerings to support the demand that is being grown in K-12 systems for STEM, which could result in these capable students leaving the state to meet their higher education goals. This ELON has shown that the demand for new STEM related programs in general and more specifically this application for a new Mechatronics Engineering program is growing in both directions from the K-12 schools who are creating more STEM related curriculums and from the manufacturers and industry in the state who need a very specialized high-tech workforce to remain competitive – “if we don’t build it someone else will” - and that may be other states.

In addition, areas like Mechatronics are popular choices for students who return to college to complete their degrees. A recent report on exemplary degree completion programs highlighted the public-private partnerships that Northeastern University developed with a diverse group of industries to provide degree completion options for their employees.⁵ One area of great interest for industry and returning students was mechatronics. ETSU has demonstrated its ability to forge public-private partnerships such Blue Sky with Blue Cross Blue Shield of Tennessee. While we do not have partnerships identified at this time, ETSU will be poised to meet industry demands for upskilling current employees who may need to return to college to complete their degree, which aligns with THEC’s Drive to 55 goals.

Existing programs offered at public and private Tennessee universities:

- Middle Tennessee University BS Mechatronics Engineering CIP 09.14.4201.00
Graduation: 2019/20 – 59 graduates
2020/21 – 59 graduates
2021/22 – 64 graduates
- University of Tennessee, Chattanooga BAS Mechatronics Engineering Technology
CIP 09.15.0403.00
Graduation: 2019/20 – 9 graduates
2020/21 – 10 graduates
2021/22 – 11 graduates
- Vanderbilt University a focus area in Mechatronics within the BE Mechanical

Mechatronics engineering is a new and emerging field and although there are engineering programs at most Tennessee universities, programs specific to Mechatronics are limited.

⁵ Hanover Research. Degree Completion Programs. January 2022 report. p.5

Due to the ABET accreditation process this program will have similar content areas to engineering degrees in the same CIP code. This program will vary with course offerings that are specific to the needs of regional partners and to the distribution of content across areas such as automation, controls, and computing. An example would be the focus of computing on control process to enhance hardware and software security, an overlapping area of engineering and cyber security. Recently network security has become a large concern for manufacturers to isolate equipment operations, control systems, and manufacturing data from hacking.⁶

Articulation and transfer

The areas of study for the Mechatronics Engineering degree cover the areas of robotics, automation, advanced sensors systems, control systems, and will have curriculum components that are interdisciplinary such as product engineering, computer science, and electronics. Students with background in math, physics, computer science and automation can benefit from this program. The proposed Mechatronics engineering program will accept credits from the Engineering Tennessee Transfer Pathway (TTP), appropriate credits from the Engineering Technology and other TTPs, and appropriate, transferable credits from other AAS and AS degree programs. Students in the following associate of science pathway may also benefit from the degree, Computer Science, Mathematics, Physics, and Imaging Sciences or any STEM-focused pathway.

Chattanooga State Community College and Jackson State Community College have pathways for Civil Engineering, Electrical Engineering and Engineering Technology that can be articulated for transfer into the proposed bachelor's program.

In addition, ETSU has articulated transfer with Walters State and Northeast State Community College for the current engineering technology program and joint engineering program. We anticipate offering similar articulation agreements for the Mechatronics Engineering degree.

⁶ Cybersecurity for smart factories, Tools for managing cyber threats to manufacturing, Sean Peasley, Deloitte & Touché, 2019.

Appendix

ETSU Letters of Support BS Mechatronics

Appendix-A



Hello,

Cross Company is always looking for someone with a computer, electrical, or a systems degree. Our Field Service Engineers work with a wide variety of Process Control Systems, or sometimes called Industrial Control Systems. Part of the job would be to communicate with devices that measure and control pressure, flow, temperature, gas detection, and level. In this role, they perform risk assessments, troubleshoot, repair, maintain, adjust system components and replace defective parts. Additional responsibilities include quality calibrations on a wide variety of precision measurement equipment, adhering to corporate quality standards and procedures. Below are some of the duties and responsibilities.

- Engineering services to support the installation, start-up, maintenance and operation of process control systems.
- Verification and validation of Control Systems; Safety Instrumented Systems (SIS), Distributed Control Systems (DCS), Supervisory Control and Data Acquisition (SCADA) and Programmable Logic Controller (PLC).
- Low voltage electrical work to support installation, commissioning, troubleshooting, and minor repairs. No conduit installation or high voltage work is required.
- Experience with communications protocols and industrial networking is required. These should include 4-20mA/HART, Modbus, Profibus, Ethernet, etc.
- Familiarity and/or experience with final control devices such as industrial control valve actuators, variable frequency drives, and mechanical relays
- Limited Calibration, installation, and perform preventive maintenance, repair or replacement on a variety of instruments including but not limited to various flow types, D/P, Mass, volumetric, Various level types, Pressure, Temperature both RTD and TC and Vibration.

We have worked with David Ward, an ETSU graduate, and have been very pleased and impressed with his knowledge and ability to pick up things quickly. David had a very good base of knowledge, but could have greatly improved his initial skills with more in depth training on the applicable skills needed in today's industrial world

Best Regards,
Todd Barnette

A handwritten signature in black ink that reads 'Todd Barnette'.

PSG Service Engineering Manager
Todd.Barnette@crossco.com

Appendix - B



October 12, 2022

Dr. Joseph Sims, Director/Professor
Engineering, Engineering Technology and
Surveying East Tennessee State University
PO Box 70552
Johnson City, TN 37614

Dear Dr. Sims:

Northeast State Community College would like to express its support for East Tennessee State University's proposal to develop and implement a Bachelor of Science of Engineering in Mechatronics.

Northeast State recognizes the need for a four-year degree pathway for our students as they pursue promotions within regional and global companies. Currently, placement rates of our Associate degree graduates and students completing technical certificates are exceeding expectations. However, we value partnerships where students can engage in additional education, such as this one with East Tennessee State University. Our student population in Computer Science, Electrical Engineering, and Manufacturing degree programs have the potential to benefit in transfer opportunities with ETSU.

We look forward to the progress the university makes in developing a Bachelor of Science of Engineering in Mechatronics and future discussions of articulation opportunities that can benefit both Northeast State and ETSU students.

Sincerely,

Donna Farrell

Donna Farrell, Ed.D.
Dean, Technologies Division
We're here to get you there

Northeast State Community College
A Tennessee Board of Regents Institution
2425 Highway 75, P.O. Box 246
Blountville, TN 37617
423.323.3191 Fx 423.279.7636
www.NortheastState.edu

Appendix - C

SIEMENS

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Siemens Industrial Automation, Inc.
One Internet Plaza
Johnson City, Tn. 37604

October 17, 2022

Mr. Paul Sims Ph.D.
Professor and Director
East Tennessee State University
Wilson Wallis Hall
Johnson City, TN 37614

Mr. Sims,

This correspondence is regarding East Tennessee State University's proposal to add a Mechatronics Engineering degree to your engineering program offerings.

The Siemens site here in Johnson City has a product development team (>100) that design and develop a host of automation products and software.

As you might imagine, it is very beneficial for our potential employment candidates to have knowledge of Automation, Programmable Logic Controllers, Computer Science, Communications, Systems, and other related technologies.

Our experience with past candidates holding an ETSU degree has been very positive. We currently have employment openings with requirements that your proposed Mechatronic Engineering degree would support very well.

I sincerely hope ETSU is successful with adding a Mechatronics Engineering degree to its course offerings. I feel that it would greatly benefit our local Siemens development team and other local technology companies here in the Johnson City region.

Best of Luck!

Regards,



Ned Cox
Director of Engineering
Ned.cox@siemens.com

Appendix – D



Matt Raby
5932 Commerce Blvd
Morristown, TN 37814 10/3/2022

Dearest Dr. Paul Sims:

I have it on good faith that a Mechatronics Engineering degree is under development at East Tennessee State University. This knowledge assures me of a bright future for manufacturing in our region and I wish to offer my assistance in furthering this effort.

It is my opinion that automation and innovation are the cornerstone concepts underlying the future of American manufacturing. Collaborative robotics, machine vision, A-I computing, and database /part traceability will be core constructs added to traditional manufacturing methods. It seems that this new degree would encapsulate all these requirements.

At all JTEKT locations throughout East Tennessee, we have seen students from ETSU hit the ground running as your programs prepare them with real-world, hands-on experiences. They quickly adapt to our manufacturing situation and are often able to implement new methods that improve throughput and productivity. It excites me to know that soon I would have an even better choice of prepared graduates ready to make my company stronger.

Please let me know how I can assist in any manner.

Regards,

Matt Raby

Production Engineering Supervisor

JTEKT North America Corporation

Mobile: (423) 312-9632

Appendix - E



October 6, 2022

To: Tennessee Higher Education Commission

Re: Letter of Support
ETSU - Mechatronics Engineering

To Whom It May Concern:

It has come to our attention that ETSU has been given permission to pursue a **B.S. Engineering in Mechatronics**. Furthermore, it is our understanding that this program is intended to be an interdisciplinary branch of engineering that focuses on the integration of mechanical, electrical and electronic engineering systems, and also includes a combination of robotics, electronics, computer science, telecommunications, systems, control, and product engineering.

The SKF Lubrication Business Unit, with a factory location under the Alemite brand in Johnson City, Tennessee is a leader in the design, manufacture, and supply of highly engineered automatic lubrication systems as well as lubrication tools and equipment. SKF worldwide has employees in 130 countries developing bearing technology and services that make rotation more reliable and sustainable. At our factory location in Johnson City, TN, we recently hired 2 graduates from ETSU with a B.S. in Engineering Technology.

From an industry standpoint, future focus will be on robotics, controls, instrumentation, and advanced manufacturing processes. At SKF Lubrication in Johnson City, we absolutely believe we could use someone from this program in the next few years, especially with our planned migration to Fanuc robots and program driven machining. Like many employers in this area, we need hi tech workers and workforce development is critical to success. For that reason, please consider this our letter of support for ETSU's development of a new engineering degree with focus on Mechatronics.

Sincerely,

A handwritten signature in black ink, appearing to read "Daniel Leathers".

Daniel Leathers
Manufacturing Engineering Manager

A handwritten signature in blue ink, appearing to read "Nancy McGinty".
Nancy McGinty
Human Resources Manager

SKF Lubrication Management
Alemite, LLC
167 Roweland Drive
Johnson City TN 37601

EAST TENNESSEE STATE UNIVERSITY
BOARD OF TRUSTEES

INFORMATION ITEM

DATE: November 18, 2022

ITEM: Overview of ETSU Global Year: Ecuador 2022-23

COMMITTEE: Academic, Research, and Student Success

PRESENTED BY: Dr. Christopher Keller
Dean of Honors College
Senior International Officer
Professor of English

Dr. Megan Quinn
Associate Professor, Biostatistics and Epidemiology
Coordinator, Global Health Initiatives
College of Public Health

Staff will provide an overview of the ETSU Global Year: Ecuador, 2022-23 program. Sponsored and led by ETSU's Center for Global Engagement, the ETSU Global Year Program is a comprehensive internationalization effort at ETSU that provides the campus, curricula, and surrounding community with a rich, complex sense of place and global interconnectedness through a year-long series of events, course enhancements, projects, and initiatives that focus on a single country.

The Global Year, in addition to supporting efforts to internationalize the campus and the curriculum, helps fulfill ETSU's vision of "developing a world-class environment to enhance student success and improve the quality of life in the region and beyond" and its values of respect for "diversity of people and thought," and its affirmation of "the contributions of diverse people, cultures, and thought to intellectual, social, and economic development." The program also strives to support ETSU's mission to provide "enriching experiences in honors education, student research and creative activity, study abroad, service learning, and community-based education."



ETSU Global Year: Ecuador

Board of Trustees Meeting
November 18, 2022

ETSU Global Year Overview

The ETSU Global Year Program is a comprehensive internationalization effort at ETSU that provides the campus, curricula, and surrounding community with a rich, complex sense of place and global interconnectedness through a year-long series of events, course enhancements, projects, and initiatives that focus on a single country.



The first ETSU Global Year Program will focus on Ecuador. This choice was based on many factors, especially the quality of ETSU's partner institution the Universidad de San Francisco de Quito.



College of Arts and Sciences

- Roy Andrade
 - Appalachian Studies
- Matthew Fehskens
 - Literature & Language
- Andrew Joyner
 - Geosciences
- Wil Tollefson
 - Geosciences
- Ante Ursic
 - Theatre & Dance



Clemmer College

- Jean Swindle
 - Educational Foundations & Special Education



College of Clinical and Rehabilitative Health Sciences

- James Boone
- Lisa Dunkley



College of Medicine

- David Wood



College of Public Health

- Beth O'Connell



Faculty Spotlight

- Matthew Fehskens
- Beth O'Connell



Matthew Fehskens

- Areas of interest
 - Linguistics, Spanish language, Ecuadorian culture and poetry, study abroad
- Plans for Global Year
 - Study abroad (July 2023)
 - Spanish language study/ track
 - COIL



Beth O'Connell

- Areas of interest
 - Water research, low resource public health, evaluation
- Plans for Global Year
 - Student internships
 - Collaborative grants
 - Study abroad (June 2023)
 - Research collaborations with USFQ faculty
 - Future Fulbright opportunities



Student Engagement

- Honors College
- Faculty-Led Study Abroad
- Semester Study Abroad
- Research
- Medical Brigades
- Language Study
- COIL Classrooms
- Fulbright Opportunities
- Community-Engaged Learning



Next Steps

- Global Year 2022-2023
 - Monthly events
 - Education abroad
 - Community engaged learning



EAST TENNESSEE STATE UNIVERSITY
BOARD OF TRUSTEES

INFORMATION ITEM

DATE: November 18, 2022

ITEM: BlueSky Tennessee Institute Update

COMMITTEE: Academic, Research, and Student Success

PRESENTED BY: Dr. Tony Pittarese
Dean, College of Business and Technology
Bradley Leon
BCBST BlueSky Tennessee Institute Executive Director

In 2019, ETSU formed an academic partnership with BlueCross BlueShield of Tennessee (BCBST) to address workforce pipeline needs in informational technology. The BlueSky Tennessee Institute allows students to earn an ABET-accredited Computing degree in a little over two years. The program features job-embedded learning opportunities, mentorship of students by BCBST executive leadership, and intensive advising and academic support activities that drives student progress and ongoing success. An initial cohort of 32 students was admitted in summer 2022 and will graduate in December 2024.

As a part of the partnership, BCBST constructed educational space in their Chattanooga corporate headquarters and turned that space over to ETSU to operate as the BlueSky Chattanooga Center. Two ETSU Computing faculty members work full time in Chattanooga teaching in-person computing classes to BlueSky students. (Other general education coursework is delivered virtually through ETSU Online.)

While the BlueSky program is open to all interested students, the program focuses recruiting activities on five priority Hamilton County schools that have high populations of African American, Latinx, underrepresented, and low-income students. Students enrolled in the first cohort will have *all* their educational expenses covered by scholarship funds provided from four external partners. A goal is to recruit additional funding support to continue this opportunity for future cohorts.

The first round of admissions interviews for the second student cohort was held in early November. Recruitment for two additional BlueSky faculty members is underway. Program leaders will provide Trustees with an overview of program activities to date and a discussion of lessons learned. The ETSU College of Business and Technology hopes to adapt this model to encompass additional partners and other programs of study.



BlueSky Tennessee Institute



WHY BLUESKY?

BCBST has more open tech jobs than can be filled locally

925

IS employees



231

Outsourced jobs



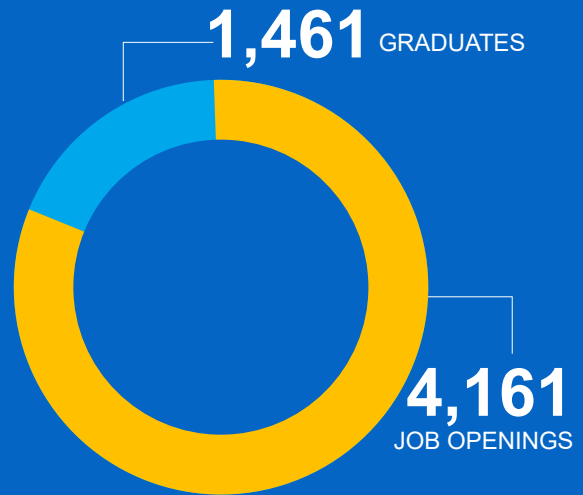
50

Open jobs



Tennessee universities aren't producing enough qualified computing graduates

- In 2019 there were **4,161 job openings** for graduates with less than 2 years' experience
- There were only **1,461 graduates**



Objectives

- Increase supply of software developers and data security specialists
- Ensure students have skillset to meet workplace needs and be productive immediately
- Improve economic and social mobility in local community

Key pillars

Program design and curriculum

Student support

Student pipeline

Enablers

Stakeholder communication and engagement

Facilities

Program staffing

Governance

Program accreditation and approvals

Partnership design

Financial model



Technical Skills

Foundational Technical Skills	Advanced Cyber Security Skills	Advanced Development Skills	Quality Assurance Skills	Workplace (Soft) Skills
Computer fundamentals, terminology, and roles	Advanced network security	Complex code management	Software test lifecycle practices and principles	Communication
Programming fundamentals / secure coding principles	Advanced development skills - ethical hacking	Application launch and exception handling	Application performance monitoring & diagnostics / Performance tuning	Problem solving and decision-making
Basic database structure	Advanced security principles (including access mgmt. principles)	Advanced middleware / API	Testing techniques (black/white box, boundary testing)	Professional etiquette
Operating system basics	Digital forensics	Architecture infrastructure	Integration & extension of vendor-dev software	Independent starter, initiator
Data correlation	Defensive technologies	Advanced data communication and networking	Test case design & execution / Test automation & performance script development	Effective teaming
Coding best practices	Public key infrastructure & cryptography	Data analytics and BI	Automation performance execution and reporting analysis	Time management and efficiency
Development lifecycle (DevOps, Agile, User requirements)	Advanced Excel/Access	Interactive programming (BPM, WAS)	Defect management practices and principles	Feedback and improvement mindset
Basic security principles	Automation	Safe scaled Agile	Automation performance execution and reporting analysis	Emotional intelligence, including conflict management
Networking fundamentals		Mobile development	Intro to Environment Management	Stress management and work/life balance
Fundamentals of testing		Cloud development		Community engagement
		AI/machine learning		



BlueSky Technical Skills and Mastery Requirements mapped to required courses in the program
I = Introduced – Skill is covered at an introductory level in the domain of class content and projects
R = Reinforced – Skill is reinforced in class content and projects (prior knowledge extended)
E = Emphasized – Skill is a focal element of class content and is covered extensively at an advanced level
P = Proposed – Content is proposed to be covered as a part of an internship course on site with BCBS

Draft
Confidential

		CSCI 1210	CSCI 1250	CSCI 1260	CSCI 1400	CSCI 1510	CSCI 1900	CSCI 2020	CSCI 2150	CSCI 2910	CSCI 3020	CSCI 3400	CSCI 3410	CSCI 3500	CSCI 3700	CSCI 3850	CSCI 4047	CSCI 4250	CSCI 4350	CSCI 4537	CSCI 4607	CSCI 4757	CSCI 4770	CSCI 4905
Foundational Technical Skills	Computer fundamentals, terminology, and roles	I	I	I	I	I		R				I	R	R	R					R	I	E		
	Basic database structure								I	R	E												R	E
	Development lifecycle (DevOps, Agile, User requirements)		I	R						R					R	R		I	E			R	R	
	Programming fundamentals		I	I	R			I	R	E							I							E
	Networking fundamentals					I						E	R	R							R	R		
	Fundamentals of testing			I												R		R	E				E	R
	Operating system basics				I					E														
	Coding best practices		I	I	R					R			I	I					R			I	E	
	Basic security principles									I			E	E	R				E	E	E		R	
	Data correlation						I		R	R							E							
Advanced Cyber Security Skills	Secure coding principles		I	I						R			I	I					R	I	I	R		
	Advanced Excel/Access																							P
	Advanced network security											I	E	I							I	E		
	Defensive technologies												E	E							E	E		
	Digital forensics													I	E									
	Advanced security principles													E	E					R		E		
	Access management principles													R	E					R		E	R	
	Public key infrastructure													R	E							I	R	
Automation													E	I							I	E		
Advanced Development Skills	Complex code management			I															R	E			R	
	Advanced data communication and networking										I	E												R
	Data analytics and BI											I				R	I	E						
	AI/machine learning														I									P
	Mobile development															R	E							P
Architecture infrastructure										E													P	



BlueSky provides a holistic student experience



SUPPORTED

- Success coaching
- Connections to wrap-around services
- Extracurricular activities
- Community environment
- BlueCross trainee program



EQUIPPED

- Technical, workplace and life skills
- Hands-on, team projects
- Real-world applications



ENGAGED

- Mentorship and project experience with BlueCross
- Work portfolio
- Job offer upon graduation



PREPARED

- Building and enhancing professional relationships
- Developing confidence to excel in the workplace
- Foundation for technical and workplace "life" skills

Intrusive Advising Model

LEARN. CONNECT. EVOLVE. THRIVE.

ACADEMIC	SOCIAL	PROFESSIONAL & PERSONAL DEVELOPMENT	CRISIS MANAGEMENT
<p>Objectives</p> <p>To provide consistent support and feedback related to student's academic progress</p> <p>To identify which supports and services are needed as early as possible</p>	<p>Objectives</p> <p>To create a positive climate and culture inside and outside of the classroom</p> <p>To provide students with regular social engagement opportunities to develop and cultivate relationships</p>	<p>Objectives</p> <p>To equip students with additional skills for career success</p> <p>To guide students in understanding and developing their strengths and talents</p>	<p>Objectives</p> <p>To have a problem-solving approach to crisis situations</p> <p>To increase stability for students</p>



Signing Day 2022



Scholarship Opportunities

Financial Support to date

- BCBST Foundation
- Benwood Foundation
- State of Tennessee
- Community Foundation of Chattanooga





Cohort One



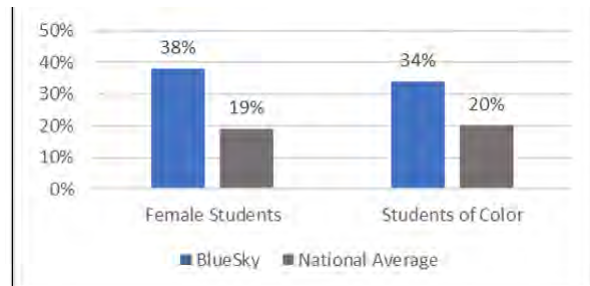
Cohort 1 Statistics

32 students

- 12 (38%) are female
- 11 (34%) are students of color
- 16 (50%) are from high priority schools in Hamilton County

National Comparisons

- 19% of bachelor's degree earners are female
- 9% are Black
- 11% are Hispanic





Some Lessons Learned

Employer recruitment processes need to evolve to reach current students. Start early.

Mutually beneficial partnerships—higher education, business, charitable foundations, students/families—can help all groups better achieve goals.

Candid, specific discussions with businesses regarding needs can yield powerful solutions.

This pattern—strong academics, internships, mentorship, job-embedded learning, financial support to students—can be scaled to meet company need.



Questions?

EAST TENNESSEE STATE UNIVERSITY
BOARD OF TRUSTEES

INFORMATION ITEM

DATE: November 18, 2022

ITEM: Overview of New and Expanded Student Success Initiatives

COMMITTEE: Academic, Research, and Student Success

PRESENTED BY: Dr. Megan Roberts
Executive Director of Academic Advisement

Dr. Bill Kirkwood
Associate Vice President, Student Life and Enrollment

Staff will provide a brief overview of initiatives to support the university's undergraduate students progress toward their degrees. ETSU offers a wide range of services and help for students and the presentation will focus on initiatives new and expanded for the fall 2022 semester.



EAST TENNESSEE STATE
UNIVERSITY

Student Success Initiatives

Dr. Bill Kirkwood & Dr. Megan Roberts

Student Success Data

Fall-to Fall Retention FTFT Freshmen		6-Year Graduation Rates FTFT Freshmen	
2017	73%	2012	44%
2018	72%	2013	50%
2019	78%	2014	50%
2020	67%	2015	51%
2021	72%	2016	55%

Source: State of the University Address, 10.14.2022



Early Outreach to Freshmen

Incoming first-time freshmen with high school GPAs under 3.0

- Students: 526
- Appointments Made: 233
- Response Rate: 44%
- Referral to CFAA: 27% (campaign) vs. 9% (not in campaign)



Individualized Graduation Plans

Show which courses to choose, time to graduation

Built weeks 3-6 of the semester

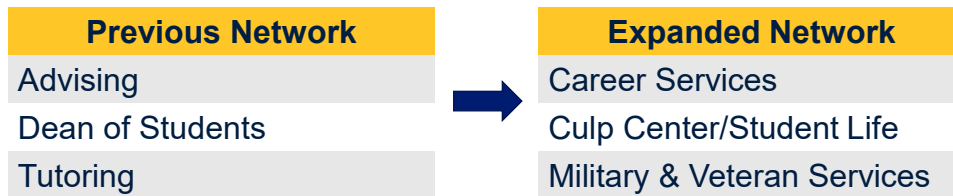
Metrics:

- Increased credit hour production
- Semesterly re-enrollment rates
- Year-to-year retention rates



Coordinated Care Network

Centralized referral system
 Student resource utilization
 Case management documentation



Coordinated Care Network

Student	Referral Reason	Closed Reason	Comments
Student A	Refer to CFAA for Tutoring	Appointment made; student didn't attend	02/09/2022 11:00 AM low exam and overall course grade ~ 02/09/2022 1:16 PM Emailed student about tutoring, SI, and academic coaching ~ 02/15/2022 6:44 PM CFAA Learning: Called student and set up tutoring appointment for BIOL 1110 on 2/21



Academic Coaching

F21 118 students

F22 231 students

Coaching Sessions	F21 DFWs	Enrolled SP22
6+	8.4%	100%
0-5	24.8%	81%



FYE Course Initiative

Fall 2021 FYE Courses

CSCI 1510	Student in University
ENTC 1510	Student in University
ETSU 1011	Introduction to the University
ETSU 1020	Foundations of Student Success
PREH 1350	Health Professions Exploration



Fall 2022 Additions

BADM 1130	Introduction to Business
RHSC 1100	Surviving the Zombie Apocalypse



FYE Course Enrollment

F15	F19	F20	F22
28%	28%	54%	68%*

*As of 8.4.22
Source: EAB Navigate, EL files for all but F22

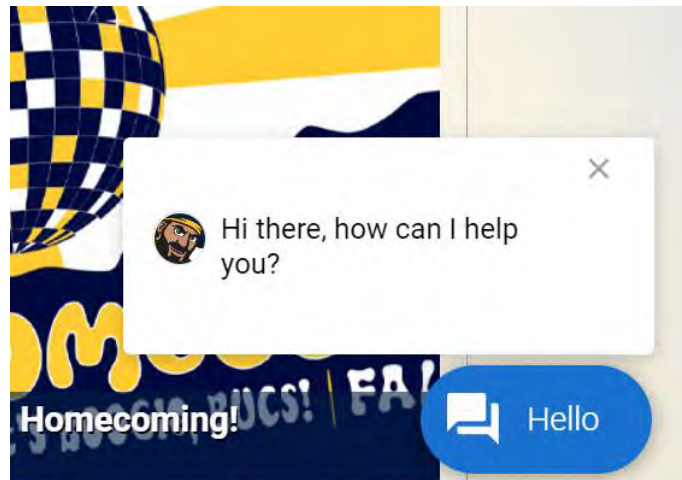


Peer Mentoring

F22: **892** FYE students are meeting with peer mentors



Bucky Bot



Bucky Bot

Aug. 1-Sept. 30: **7,543 users**



Bucky Bot: Use by Day



Bucky Bot: Use by Hour



In review

Responding to student data

Early advising for new students

Adopting best practices

Individualized degree plans

Expanding proven initiatives

Academic coaching

FYE courses/peer mentoring

Delivering help & information

Coordinated care network

University chatbot



EAST TENNESSEE STATE UNIVERSITY
BOARD OF TRUSTEES
ACADEMIC, RESEARCH, AND STUDENT SUCCESS COMMITTEE

MINUTES

November 18, 2022
Johnson City, Tennessee

The East Tennessee State University Board of Trustees' Academic, Research, and Student Success Committee met on Friday, November 18, 2022, at 8:00 a.m. in the East Tennessee Room of the D.P. Culp Student Center.

I. Call to Order

Committee Chair Janet Ayers called the meeting to order at 8:00 a.m.

II. Roll Call

Board Secretary Dr. Adam Green led the roll call. Since Committee Chair Janet Ayers participated remotely, in accordance with Tennessee Code § 8-44-108 section (c) (3), Dr. Green asked Committee Chair Ayers for the record if she could clearly hear so that she could participate in the meeting and if she would identify any persons present in the room with her from which she was participating in the meeting. She reported that she could hear and was alone. Those in attendance stated that they could hear Committee Chair Ayers. Additionally, Dr. Green stated that because a trustee is participating remotely, any votes must be taken by roll call.

Committee members present were:

Committee Chair Janet Ayers
Trustee Dr. Virginia Foley
Trustee Dr. Linda Latimer
Trustee Melissa Steagall-Jones
Absent: Trustee Charles Allen

Trustees Allen Archer, Dorothy Grisham, Dr. Lisa Piercey and Ron Ramsey also participated in the meeting.

III. Approval of the Academic, Research, and Student Success Committee Minutes from September 16, 2022

The minutes from the September 16, 2022, meeting of the Academic, Research, and Student Success Committee were approved as submitted with Trustee Foley making the motion and Trustee Steagall-Jones seconding the motion. The motion passed unanimously.

IV. Action Item: Approval of Expedited Letter of Notification Regarding Establishment of a B.S. in Mechatronics Engineering

Provost Kimberly McCorkle presented for the committee's discussion and approval an Expedited Letter of Notification (ELON) regarding the establishment of a Bachelor of Science in Mechatronics Engineering to be housed in the College of Business and Technology.

Dr. McCorkle outlined the established academic approval process as follows:

- The ELON has been reviewed and approved internally by the Academic Council and President Brian Noland.
- The ELON must be approved by the Board of Trustees. If approved, the ELON will be sent to the Tennessee Higher Education Commission (THEC) where it will be posted for public comment.
- Upon completion of all required program development processes, the new program will be presented to the Board of Trustees as a notification item before the proposed program implementation in Fall 2023.

Several members of the committee commended the work of staff in the Provost's Office and the College of Business and Technology for striving to meet workforce demands and for creating a stackable, portable credential that aligns with academic programs at Northeast State Community College. In response to questions posed by committee members, faculty from the department confirmed that representatives from local companies have offered letters of support and met with faculty and staff to discuss the proposed program. Provost McCorkle and faculty from the department also confirmed that ETSU has the facilities to launch the program but will need to purchase some additional equipment. Trustee Ayers encouraged faculty and staff to explore partnerships with local businesses to share space so that students may learn in real-world environments. President Noland noted that space needs and opportunities would be considered as part of the Facilities Master Planning process that is currently underway.

The committee voted to approve the ELON. Trustee Steagall-Jones made the motion, and Trustee Foley seconded the motion. The motion passed unanimously.

V. Overview of ETSU Global Year: Ecuador 2022-23

Dean Chris Keller and faculty provided an overview of the ETSU Global Year: Ecuador 2022-23 program. Sponsored and led by ETSU's Center for Global Engagement, the ETSU Global Year Program is a comprehensive internationalization effort at ETSU that provides the campus, curricula, and surrounding community with opportunities for global learning and interconnectedness through a year-long series of events, course enhancements, projects, and initiatives that focus on a single country. Committee members expressed support for the program. Board Chair Dr. Linda Latimer asked staff to elaborate on scholarship opportunities available to assist students in studying abroad. Staff outlined various sources of support including:

- educational study abroad scholarships
- undergraduate research funding
- reallocation of student fee revenue by some colleges to support study abroad opportunities

VI. BlueSky Tennessee Institute Update

Dean Tony Pitarese and Executive Director Leon provided an update on the BlueSky Tennessee Institute, ETSU's academic partnership with BlueCross BlueShield of Tennessee (BCBST) to address workforce pipeline needs in informational technology. Key points included:

- The program allows students to earn an ABET-accredited computing degree in a little over two years.
- An initial cohort of 32 students was admitted in summer 2022 and will graduate in December 2024.
- As a part of the partnership, BCBST constructed educational space in their Chattanooga corporate headquarters and turned that space over to ETSU to operate as the BlueSky Chattanooga Center.
- Students enrolled in the first cohort will have all their educational expenses covered by scholarship funds provided from four external partners.
- The first round of admissions interviews for the second student cohort was held in early November.
- Recruitment for two additional BlueSky faculty members is underway.

Trustees commended the program and asked questions regarding the eligibility and entrance requirements. Staff confirmed that requirements mirror those of the university and that students of all ages and backgrounds could be considered. Trustee Grisham discussed her visit to the BlueSky Tennessee Institute site and commended staff and partners for creating an extraordinary learning environment with wrap-around student support.

VII. Overview of New and Expanded Student Success Initiatives

Staff noted that retention rates dropped during the pandemic but are beginning to show signs of improvement. Staff members outlined a wide range of services and supports implemented during the fall 2022 semester to promote retention and progress toward degree. These include:

- Early outreach to freshmen
- Individualized graduation plans
- Development of a coordinated care network
- Additional academic coaching
- Expansion of first-year experience courses
- Expansion of peer mentoring
- Launch of an AI-powered chat bot to answer student questions

Trustee Piercey asked staff to elaborate on how they are aligning mental health services with student success efforts. Staff explained that course instructors and advisors refer students to the Dean of Students who then ensures students are connected with the ETSU Counseling Center.

VIII. Committee Discussions

During the general discussion period, committee members applauded the recent Symposium on Innovation and Education for the Bioeconomy held on campus on October 27 and organized by Professor David Golden and the ETSU Research Corporation. Board Chair Dr. Latimer noted she had received a great deal of positive feedback from the community and encouraged those in attendance to consider how the university can continue and expand upon this community engagement.

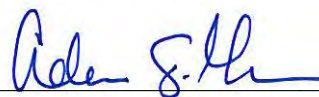
IX. Other Business

No other business was brought before the committee.

X. Adjournment

The committee was adjourned by Trustee Ayers.

Respectfully submitted,



Adam Green
Secretary of the Board of Trustees

Approved by the Board of Trustees at its February 17, 2023 meeting.