College of Engineering and Technology 2017-2022 Strategic Plan

Unit Mission: The College of Engineering and Technology enthusiastically embraces the Three Commitments of the ECU Strategic Plan and the associated Institutional Priorities. The College has three internal priorities that define our mission and guide our investment of time, effort, and resources: maximize student success, enhance academic excellence, and advance research and scholarship – for the benefit of our students, the economy and communities of Eastern North Carolina, and society as a whole.

Commitment 1: Maximize Student Success

University Goal 1.1: We will leverage our leadership in distance education to improve accessibility for key student populations. We will establish targeted programs supporting seamless transitions to ECU for active military, veterans, and transfers. We will encourage the return of “part-way home” students to complete their degrees. We will lead the UNC System in the enrollment and graduation of students from rural counties.

University Goal 1.3: We will develop programs to grow the number of enrolled and graduating low-income students…]

Unit Objective 1: We will annually increase the number of CET courses offered online or hybrid formats, or in face-to-face format with significant online content.

Metrics:
1. Number of CET courses offered in online or hybrid formats, or in face-to-face format with significant online content.
2. Numbers of students (total and from key populations including rural, low-income, part-way home) enrolled in CET and/or ECU distance education courses.

Actions:
1. (1.1) We will establish the CET Teaching Innovation Program to solicit and fund faculty proposals to develop and implement innovations in educational technology to facilitate student access to CET courses. This may include developing new online and hybrid courses, using technology to infuse face-to-face courses with significant online content and facilitate classroom active learning, and other technology-based approaches to facilitating student access and active engagement.
2. (1.2) We (via the CET Student Success Center) will implement advising processes utilizing Degree Works Plans for each student to (1) identify course needs and optimal modes of delivery to maximize student access, and (2) provide customized advice to each student to help them identify online
and hybrid course offerings that enable increased access to CET or ECU courses.

3. (1.3) By 2019, we will create (in the CET Student Success Center) a specialist position focused on “Transfer and Degree Completion Programs” who will spearhead efforts to develop targeted transition and degree completion programs involving school districts, community colleges, military installations, and companies.

4. (1.4) We will fund CET Teaching Innovation Fellows and Student Success Center staff to establish and develop a transition and degree completion initiative, the CET On Your Time Program. This initiative will develop and promote summer-session and regular-term online/hybrid courses, develop dynamic curriculum flowcharts and DegreeWorks plans, and provide specialized advising to help students plan and make progress towards their degrees while engaged in internship and co-op experiences, regular summer employment, or full-time employment.

**Unit Objective 2:** We will annually maintain or increase the numbers of active military, veteran, and transfer students enrolled in CET degree or certificate programs.

**Metric:**
1. Numbers of active military, veteran, and transfer students enrolled in at least one course fulfilling a requirement of a CET degree or certificate program.

**Unit Actions:**
1-4. 1.1-1.4 (see above)

**Unit Objective 3:** We will create a database of CET “part-way home” students, establish a degree-planning dialogue with those having a viable degree pathway, and assist those students to enroll in a course that will count towards an ECU degree.

**Metrics:**
1. Existence of a continuously updated database of CET part-way home students
2. Numbers of CET part-way home students engaged in degree-planning dialogue, enrolled in courses counting towards an ECU degree, and part-way home graduates

**Actions:**
1-4. 1.1-1.4 (see above)
5. (3.5) The CET Student Success Center will create and maintain a database of CET part-way home students and lead efforts, in collaboration with faculty, to engage part-way home students in our degree completion initiative, the CET On Your Time Program.
6. (3.6) As a part of the CET Opportunity 2022 advancement campaign, we will prioritize and solicit donor support for CET Part-Way Home
Scholarships to assist students with demonstrated financial need and realistic degree completion prospects.

Unit Objective 4: Each year, we will maintain or increase the numbers of students from rural counties enrolled in, and graduating from CET degree programs.

Metrics:
1. Number of enrolled CET students and graduates from rural counties in North Carolina

Actions:
1-4. 1.1-1.4 (see above)
5. (4.5) As a part of the CET Student Success Center, we will create the CET First Year Program (FYP), hire an associate director (within the SSC) for Prospective and First Year Students, and hire graduate staff assistants and/or undergraduate work-study students tasked with K-12 outreach and prospective student engagement.
6. (4.6) We will fund CET Teaching Innovation Faculty Fellows and Student Success Center staff to establish and develop outreach and bridge programs designed to familiarize rural and low-income students with CET degree and career opportunities, guide students into appropriate bridge programs to build credential strength, and recruit prospective students to ECU and the CET FYP.
7. (4.7) As a part of the CET Opportunity 2022 advancement campaign, we will prioritize and solicit donor support for CET Access Scholarships to assist students from rural communities or having demonstrated financial need.

Unit Objective 5: Each year, we will maintain or increase the numbers of low-income students enrolled in, and graduating from CET degree programs.

Metrics:
1. Number of low-income students enrolled in, and graduating from CET degree programs

Actions:
1-4. 1.1-1.4 (see above)
5. (4.5) As a part of the CET Student Success Center, we will create the CET First Year Program (FYP), hire an associate director (within the SSC) for Prospective and First Year Students, and hire graduate staff assistants and/or undergraduate work-study students tasked with K-12 outreach and prospective student engagement.
6. (4.6) We will fund CET Teaching Innovation Faculty Fellows and Student Success Center staff to establish and develop outreach and bridge programs designed to familiarize rural and low-income students with CET degree and career opportunities, guide students into appropriate bridge programs to build
credential strength, and recruit prospective students to ECU and the CET FYP.
7. (4.7) As a part of the CET Opportunity 2022 advancement campaign, we will prioritize and solicit donor support for CET Access Scholarships to assist students from rural communities or having demonstrated financial need.

University Goal 1.2: We will improve retention and graduation rates.

University Goal 1.3: We will be a national leader as a “best value” in undergraduate and graduate education while minimizing student debt and cultivating an institutional culture of timely graduation…

Unit Objective 6: Each year, we will achieve increases in first-time, full-time freshman to sophomore retention rate in each CET undergraduate degree program and averaged across all CET degree programs.

Metric:
1. First-time, full-time freshman-to-sophomore retention rates

Actions:
1. (6.1) We will create the CET First Year Program (FYP) within the CET Student Success Center and hire an assistant director for Prospective and First Year Programs. This staff member will lead efforts to develop student recruiting and retention initiatives, including first-year advising programs, predictive analytics tools, and intervention strategies.
2. (6.2) We will increase CET Student Success Center staffing to include first-year advising specialists, faculty mentors, graduate staff assistants, undergraduate peer mentors, and supplemental instruction tutors, to develop and implement FYP initiatives. FYP Faculty Fellows are faculty mentors specializing in introductory course instruction, freshman engagement, and developing and implementing FYP initiatives.

Unit Objective 7: Each year, relative to the previous year, we will achieve increases in five-year graduation rate in each CET undergraduate degree program and averaged across all CET degree programs.

Metric:
1. Five-year graduation rates (from any accredited institution) of first-time, full-time freshmen

Actions:
1-2. 6.1, 6.2 (see above)
3. (7.3) We will acquire or develop a student success management system, the Student Success Dashboard, a customer relationship management software platform focused on student success, including predictive analytics
capability, DegreeWorks plans, and other functionality enabling SSC staff and faculty to track the progress of every CET student towards degree completion and provide just-in-time advice, supplemental instruction, and other interventions as needed.

**Unit Objective 8:** Our advising processes and practices will encourage and support student utilization of online, hybrid, and face-to-face courses, at ECU and other institutions, during summer sessions, including pre-freshman enrollment

**Metric:**
1. Number of CET students (total and from key populations including rural, low-income, part-way home, rural) enrolled in summer session courses, at any institution, fulfilling ECU/CET degree program requirements

**Actions:**
1. (1.4) (see above, repeated here) We will fund CET Teaching Innovation Fellows and Student Success Center staff to establish and develop a transition and degree completion initiative, the **CET On Your Time Program**. This initiative will develop and promote summer-session and regular-term online/hybrid courses, develop dynamic curriculum flowcharts and DegreeWorks plans, and provide specialized advising to help students plan and make progress towards their degrees while engaged in internship and co-op experiences, regular summer employment, or full-time employment.
2. (7.3) (see above)

**University Goal 1.3:** We will be a national leader as a “best value” in undergraduate and graduate education while minimizing student debt and cultivating an institutional culture of timely graduation… We will be a national leader in the assessment of learning outcomes and the use of innovative teaching strategies.

**Unit Objective 9:** We will annually increase the numbers of CET instructors and courses utilizing a learning management system (e.g., Blackboard) or other educational technology to assess student mastery of course learning objectives and program outcomes, utilizing this data for program evaluation and continuous improvement as well as identifying students needing just-in-time advice, supplemental instruction, and other interventions.

**Metrics:**
1. Numbers of CET instructors and courses utilizing a learning management system, and the level of utilization (basic, intermediate, advanced)
2. Number of CET courses with advanced utilization of a learning management system to collect data on student mastery of course learning objectives and program outcomes

**Actions:**
1. (9.1) We will establish the **CET Teaching Innovation Program** to solicit faculty proposals for course release time for professional development to identify, develop, and implement the use of a learning management system in their courses for outcomes assessment and improving student success.

2. (9.2) We will annually review and update course learning objectives for each course and implement a **Student Learning Dashboard** (a component of the **Student Success Dashboard**) to collect quantitative data on student mastery of course learning objectives and program outcomes.

**Unit Objective 10:** We will provide instructors with time and resources to develop and implement promising, pedagogically sound, innovative teaching strategies in CET courses. The number of courses with documented implementation of innovative teaching strategies will increase annually through 2022.

**Metrics:**

1. Cumulative number of instructors designated as **CET Teaching Innovation Fellows**
2. Number of CET courses that implement innovative teaching strategies and number of impacted students

**Actions:**

1. (10.1) We will establish the **CET Teaching Innovation Program** to solicit faculty proposals to identify, develop, and implement innovative teaching strategies in CET courses. Selected faculty, designated as **CET Teaching Innovation Fellows**, will be given course release time and professional development funding for this purpose.

2. (10.2) As a part of the **CET Opportunity 2022** advancement campaign, we will prioritize and solicit donor support for **CET Teaching Innovation Fellowships** to provide release time and financial support for faculty professional development and implementation of innovative teaching strategies.

**University Goal 1.4:** We will reflect a global workplace and society by diversifying our faculty, staff, and students. We will increase the number of international students on our campus. We will provide 25 percent of ECU graduates with study abroad experience and increase scholarship opportunities to improve accessibility. We will increase those with competency in a second language and leverage our success with the Global Partners in Education.

**Unit Objective 11:** We will invest faculty and staff time and effort to build capacity for study abroad experiences in the context of CET courses and degree programs, aiming to achieve annual increases in program offerings and faculty/student participation.

**Metrics:**
1. Number of CET courses that offer, wholly or by inclusion of course modules, opportunity for study abroad by CET students
2. Number and percentage of CET students who have had a meaningful study abroad experience by the time they graduate

**Actions:**
1. (11.1) We will establish the **CET Teaching Innovation Program** to solicit and fund faculty proposals to identify, develop, and implement study abroad opportunities for CET students, including course modules and complete courses
2. (11.2) As a part of the **CET Opportunity 2022** advancement campaign, we will prioritize and solicit donor support for **CET Global Opportunity Scholarships** to assist students, especially those from rural communities and others with demonstrated financial need, to participate in study abroad opportunities originating from any ECU academic unit

**Commitment 2: Serve the Public**

**University Goal 2.1:** We will inspire our students to be engaged citizens and will be a national model for developing the leadership of faculty, staff, and students through engaged research and service.

**Unit Objective 12:** We will invest time and effort of faculty and staff to build capacity for research, scholarship, entrepreneurship, and professional service, resulting in annual increases in the numbers of engaged faculty members, undergraduates, and graduate students

**Metrics:**
1. Numbers of faculty members, undergraduates, and graduate students engaged in externally-focused research, scholarship, entrepreneurship, and professional service activities
2. Number of faculty members designated as **CET Faculty Scholars**
3. Number of collaborative research projects, company-focused development projects, and professional service projects involving CET faculty members and students

**Action:**
1. (12.1) We will establish the **CET Faculty Scholars Program** to solicit faculty proposals to develop and implement externally-focused research, scholarship, and professional service activities. Selected faculty, designated as **CET Faculty Scholars**, will be given course release time and seed funding to develop collaborative projects to engage in externally-focused research, scholarship, entrepreneurship, and professional service activities that benefit communities and companies in eastern North Carolina

**University Goal 2.5:** We will be a portal for professional development, continuing education, and lifelong learning opportunities that support the needs of our region’s people and businesses.
Unit Objective 13: We will invest time and effort of faculty and staff to build capacity for industry- and company-sponsored projects; provide continuing education opportunities via masters, certificate, and professional development coursework; and promote faculty- and student-led entrepreneurship, resulting in annual increases in the numbers of engaged faculty members, undergraduates, and graduate students, and external partners.

Metric:
1. Numbers of faculty members, students, and external partners engaged in industry- and company-sponsored projects, continuing education activities (certificate and professional development coursework), and faculty- and student-led entrepreneurship initiatives.

Action:
1. (13.1) The Center for Innovation in Technology and Engineering (CITE) will serve as the college’s nexus for industry engagement, professional development and continuing education, and entrepreneurship initiatives. CITE will provide central coordination and information sharing by establishing a comprehensive catalog of CET partnership activities of all kinds, coordinate faculty and student engagement with partners, and coordinate partner engagement with appropriate college functions (advancement, academic programs, Student Success Center, faculty research).

Commitment 3: Lead Regional Transformation

University Goal 3.1: We will grow ECU into the third-largest research institution in the UNC system by investing in our people, tools, and facilities. We will seek solutions to the challenges of our region, including health issues, coastal community resiliency, advanced manufacturing, and assisting the military.

Unit Objective 14: By 2022, we will increase research and scholarly activity by faculty and students in the college by at least 100%, aspiring to achieve annual research expenditures of at least $3 million by FY 2022.

Metrics:
1. Numbers of research- and scholarship-active faculty members, graduate students, and undergraduates.
2. Number and value of externally-funded research contracts and grants, value of research expenditures, value of research expenditures reports on NSF HERD survey.
3. Numbers of refereed journal publications, proceeding papers at selective conferences, industry- or agency-funded project reports, and patent applications.

Actions:
1. (14.1) We will recruit, hire, and support new tenure-track faculty members who will advance research and scholarship that addresses the challenges of our region and beyond.

2. (see 12.1 above, repeated here): We will establish the CET Faculty Scholars Program to solicit faculty proposals to develop and implement externally-focused research, scholarship, and professional service activities. Selected faculty, designated as CET Faculty Scholars, will be given course release time and seed funding to develop collaborative projects to engage in externally-focused research, scholarship, entrepreneurship, and professional service activities that benefit communities and companies in eastern North Carolina.

University Goal 3.4: We will enhance the campus-wide culture of innovation at ECU by leveraging our assets including the Miller School of Entrepreneurship.

Unit Objective 15: We will help build the ECU/Greenville innovation ecosystem by annually increasing the numbers of faculty and students engaged in innovation and entrepreneurship activities, especially in collaboration with the Miller School.

Metric:
1. Numbers of faculty members, students, and community partners (companies, agencies) engaged in innovation and entrepreneurship activities

Actions:
1. (15.1) The CET Teaching Innovation Program will solicit and fund faculty proposals to identify, develop, and implement collaborative projects focused on integrating innovation and entrepreneurship concepts in existing or new CET courses and degree programs.

2. (15.2) The CET Faculty Scholars Program will solicit and support faculty proposals to identify, develop, and implement collaborative projects leveraging the Miller School and other local resources to translate research and scholarship into entrepreneurship.

3. (15.3) We will create a space planning team to evaluate current usage of space designated for capstone and other team-based student projects, develop new concepts for space redevelopment and expansion (Building 43), and work with University Advancement to develop a renovation and facilities upgrade plan as an element of the CET Opportunity 2022 campaign.

4. (see 13.1 above, repeated here): The Center for Innovation in Technology and Engineering (CITE) will serve as the college’s nexus for industry engagement, professional development and continuing education, and entrepreneurship initiatives. CITE will provide central coordination and information sharing by establishing a comprehensive catalog of partnership activities of all kinds, coordinate faculty and student engagement with partners, and coordinate partner engagement with appropriate college functions (advancement, academic programs, Student Success Center, faculty research).
**University Goal 3.5:** We will emphasize critical workforce needs in the region and beyond, including STEM, K-12 teacher education and healthcare.

**Unit Objective 16:** By 2022, the CET will contribute to meeting critical STEM workforce needs by achieving a 25% increase in undergraduate enrollment, a 50% increase in graduate enrollment, and an overall 100% increase in enrollment of research-active MS and doctoral students.

**Metric:**
1. Numbers of enrolled undergraduate, graduate, and research-intensive graduate students.

**Unit Actions:**
1. 1.1.1-1.1.9, 1.2.1-1.2.3, 1.3.1-1.3.4, 2.1.1, and 3.1.1 1.1-1.4, 3.5, 3.6, 4.5-4.7, 6.1, 6.2, 7.3, 9.1, 9.2, 10.1, 10.2, 12.1, 14.1 (see above)
2. (16.19) As a part of the CET Student Success Center, we will develop, implement, and integrate enrollment management models for each degree program, student DegreeWorks plans, and faculty workload models to guide multi-semester plans for course/section offerings, instructor staffing, and classroom and lab scheduling
3. (16.20) We will hire additional tenure-track and fixed term faculty members needed to grow enrollment while maintaining optimal course section sizes and a 24:1 student-to-faculty ratio, supporting a culture that both promotes student-faculty engagement and advances research and scholarship
4. (16.21) We will create the CET Graduate Access Committee, an ad hoc college committee tasked with developing proposals for MS programs, spearheading efforts to create CET-focused tracks within existing interdisciplinary PhD programs, and shepherding these proposals through the approval process

**Unit Objective 17:** We will increase philanthropic support for CET students, faculty, programs, and facilities as a part of ECU’s Capital Campaign, aiming to raise $13 million by 2022.

**Metrics:**
1. Numbers of engaged alumni, friends, foundations, and corporate supporters
2. Fundraising totals

**Unit Action:**
1. (17.1) Collaborate with University Advancement to establish a capital campaign, CET Opportunity 2022, to support college priorities including student scholarships, student and faculty fellowships, and facility renovation and technology upgrades for the Student Success Center and the Center for Innovation in Technology and Engineering
**University Goal 3.6:** We will grow innovative and market-driven graduate programs including data science, mechanical engineering, and coastal engineering.

**Unit Objective 18:** We will work with Academic Affairs, the Graduate School, and collaborating academic units to create and build new graduate programs (including data science, mechanical engineering, and coastal engineering) that achieve both regional and global impact. By 2022, we will double the number of approved MS programs in the college and provide all CET faculty access to doctoral programs that can enroll their research-active graduate students.

**Metric:**
Numbers of MS and doctoral students enrolled in CET graduate programs and affiliated doctoral programs

**Unit Actions**
1. 2.1.1, 2.5.1, 3.1.1, and 3.4.1-3.4.2 12.1, 13.1, 14.1, 15.1, 15.2, 17.1 (see above)
2. (see 16.20 above, repeated here): We will hire additional tenure-track and fixed term faculty members needed to grow enrollment while maintaining optimal course section sizes and a 24:1 student-to-faculty ratio, supporting a culture that both promotes student-faculty engagement and advances research and scholarship
3. (see 16.21 above, repeated here): We will create the **CET Graduate Access Committee**, an ad hoc college committee tasked with developing proposals for MS programs, spearheading efforts to create CET-focused tracks within existing interdisciplinary PhD programs, and shepherding these proposals through the approval process