

# 2023-2029 STRATEGIC PLAN

UNIT/DEPARTMENT/COLLEGE/DIVISION: College of Science & Engineering



## I. Background

Texas State University has historically developed an extensive strategic plan to address the long-range vision, mission, goals, and expectations of what the university should become by the end of the planning cycle. To make sure that critical concerns receive full attention in the near future, the president has highlighted a series of University Imperatives: elevate student success; advance to Carnegie R1 status; increase global and online enrollment; grow the Round Rock Campus; and reduce administrative burdens. These imperatives, included as initiatives in the 2023-2029 Strategic Plan, require the full attention of the entire university community in developing an operational plan to ensure progress and attainment of these imperatives in a timely manner.



## II. Instructions

1. Continue to consider long-range strategic actions, for the upcoming six years, that your unit, department, college, or division can contribute to the university as a whole. Pay special attention to any actions that address the University Imperatives and note that actions contributing toward the University Imperatives will receive greater consideration for funding.
2. It is anticipated that this strategic plan will be updated in two years to coincide with the Texas legislative session

rather than at the mid-cycle (three year) point as has been done in the past. Therefore, actions that are intended to be completed in the near future (within two years) should be described in greater detail. Think of these actions as milestones for completing your long-range strategic plans.

3. Please note that strategic actions are not always adding programs and processes; strategic actions also include deleting, discontinuing, or reframing programs and practices. You may want to include action plans to reallocate resources and reposition activities to better utilize resources toward more productive ends.

4. Continue to add your strategic actions on this *2023-2029 Strategic Plan* template under each goal in order of priority for your unit, department, college, or division. Funding priority will be given to the highest-ranking actions, yet please note that not all highest-ranking actions may be approved. Items ranked lower on your list of actions for each goal and your overall priorities may receive authorization and funding over higher ranked items.

5. In addition to stating your mission and explaining your planning process, describe the proposed actions as clearly as possible; provide a reasonable timeframe for developing and implementing these actions; provide a rough estimate of the new resources required, expected cost, and source of revenue while knowing that a more detailed plan and budget will be worked out before authority to proceed is granted; establish realistic and measurable assessment criteria or key performance indicators to measure progress toward the achievement of the action; and link the proposed action to the appropriate initiative in the 2023-2029 Strategic Plan.



### III. Mission Statement

State your administrative unit/department/college/division mission statement.

The College of Science and Engineering has a threefold mission:

To teach core concepts and promote literacy in science and mathematics for a diverse student body, while providing students with advanced knowledge and skills for careers in science, technology, engineering, mathematics, and related fields including education.

To support high-quality teaching and internationally recognized research programs in an inclusive, equitable, and accessible environment for students, staff, and faculty.

To serve the citizens of Texas and the nation with educational and research programs that embrace opportunities for innovation in solving regional and global challenges.



#### IV. Process

**Explain, in a brief paragraph, the process used to develop your plan, including the nature and extent of faculty and staff involvement.**

The College of Science and Engineering developed priorities focused on actions that should begin in Fall 2023 with measurable outcomes within the next two years. This emphasis on near-term planning seems appropriate with the arrival of a new dean sometime in fall 2023 who should be involved in shaping the six year plan. Department chairs and directors met with their faculty to develop their action plans. They provided their top three actions to the college and the results were shared across the departments and programs. Department chairs, directors, associate/assistant deans, and the dean met to discuss and jointly develop the top five priorities for the next two years.



#### V. Action Plans Related to University Goals and Initiatives

**University Goal 1: Supporting Student Success**

*1.1 Expand efforts supporting academic preparedness and excellence*

*1.2 Strengthen student engagement, sense of belonging, and wellbeing*



COSE	Implement a “Foundations of Chemistry” course for students who are not prepared for General Chemistry I. A pre-test will separate students into General Chemistry I or Foundations of Chemistry (GenEd course). This will reduce the DFW rate for Gen Chem I.	Beginning 2023	None	Click or tap here to enter text.	Click or tap here to enter text.	Reduced DFW rate	1.1
<p><b>University Goal 2: Advancing Academic Excellence</b></p> <p><i>2.1 Increase enrollment at all levels with emphasis on international, transfer, online, and graduate students</i></p> <p><i>2.2 Offer new and innovative academic programs that meet the economic and cultural needs of the state</i></p> <p><i>2.3 Expand degree programs and infrastructure to increase enrollment on the Round Rock Campus</i></p> <p><i>2.4 Invest in faculty excellence by increasing the capacity and development of all faculty</i></p>							
Area (Dept., Unit, College, or Division)	Planned Actions	Timeframe (of development and implementation)	New Resources Requested (personnel, facilities, and operational funding)	Expected Cost	Source of Resources (new, reallocation of existing funds, fee, philanthropic, etc.)	Assessment Criteria (outcome when achieved or key performance indicator)	University Initiative
COSE	<b>Increase Enrollment of MS Students:</b> Continue to recruit diverse and excellent master’s level graduate students by advocating for tuition remission/stipends and for increased salaries of graduate instructional assistants.	Beginning 2023	Personnel	\$850K	New	# of new MS students	2.1
COSE	<b>Grow the Round Rock Campus:</b> Beginning Fall 2023 increase the undergraduate and graduate course offerings in Computer	Beginning 2023	Personnel	\$300K for FY24 and \$300K for FY25	New	Increasing # of students enrolled each	2.3

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	Science, add more electives and focus on recruiting students to the RRC. Add upper division mathematics courses offered at RRC to support a minor in mathematics often completed by Computer Science majors. Plan and prepare for lower division course offerings in Construction Science and Management and in select engineering programs.					semester at RRC	
COSE	New research-based MS program in Engineering Technology. Create three BS degrees out of the five ET concentrations. These would include a BS in Civil and Environmental Engineering Technology, BS in Mechanical and Manufacturing Engineering Technology, and BS in Electrical (and maybe Electronics) Engineering Technology.	Beginning 2024	Personnel	\$1M	New	Increased enrollment in ET BS and MS programs	2.2
COSE	Explore developing new ABET-accredited undergraduate engineering degrees, add high-value concentrations to existing engineering programs, redesign existing engineering programs, and obtain accreditation for the Mechanical Engineering program to meet the State of Texas' growing demand for a talented	Beginning 2024	Personnel	Click or tap here to enter text.	Click or tap here to enter text.	New programs identified, accreditation received	2.2

	workforce with engineering degrees.						
<p><b>University Goal 3: Expanding Discovery, Innovation, Creativity, and Research</b></p> <p><i>3.1 Position Texas State University to achieve Carnegie R1 status</i></p> <p><i>3.2 Target and secure multi-year and multimillion-dollar awards to increase and diversify the university's research portfolio</i></p> <p><i>3.3 Enhance the university's intellectual property (IP) portfolio and commercialization efforts</i></p> <p><i>3.4 Build relationships with private sector, industry, government, and educational partners</i></p>							
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COSE	<p><b>Increase the Number of Doctoral Programs:</b> Fall 2023 submit proposals to the THECB for new doctoral programs in Mathematics, Integrated Molecular and Biophysical Chemistry, and Civil Engineering. Increase core faculty and continue planning and preparation for new doctoral programs in Electrical Engineering, Mechanical and Manufacturing Engineering, and Construction Management.</p>	Beginning 2023	Personnel	<p>Math: \$6M over 5 years (\$1.6M first two years), IMBC: \$7M over 5 years (\$1.3M first two years), CE: \$10.5M over 5 years, \$3.7M first two years</p>	New	Double # of doctoral degrees awarded by CoSE	3.1

COSE	<b>Increase and Diversify the Research Profile:</b> Selectively add new faculty lines to support existing doctoral programs to build capacity to compete for multimillion dollar and/or interdisciplinary grants. Selectively hire new faculty with programs that enhance the university's IP portfolio. In addition, increase the size of the existing doctoral programs by enhancing doctoral student support and modifying admission requirements to allow highly qualified students with BS degrees to be considered for admission.	Beginning 2023	Personnel	\$750K annually	New	# of individual awards in excess of \$1M, # of disclosures, # of students enrolled in BS to PhD	3.2
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**University Goal 4: Enriching Community, Collaboration, and Partnerships**  
*4.1 Enhance the regional, national, and international reputation of the university*  
*4.2 Build community relations, collaborations, and partnerships with external stakeholders*  
*4.3 Increase engagement in activities and programs that promote a welcoming community and a sense of belonging*

Area (Dept., Unit, College, or Division)	Planned Actions	Timeframe (of development and implementation)	New Resources Requested (personnel, facilities, and operational funding)	Expected Cost	Source of Resources (new, reallocation of existing funds, fee, philanthropic, etc.)	Assessment Criteria (outcome when achieved or key performance indicator)	University Initiative
CoSE	Enhance support for graduate students by providing additional support structures for academic	Beginning 2023	New	\$300K per year	New	# of graduate students retained	4.0



	advising, training and community building that will foster a more welcoming, inclusive, and enriching environment. Emphasis will be on increasing engagement for graduate international students and underrepresented students.						
<p><b>University Goal 5: Developing Infrastructure and Resources</b></p> <p><i>5.1 Position Texas State University as an employer of choice</i></p> <p><i>5.2 Provide infrastructure befitting a Carnegie R1 university</i></p> <p><i>5.3 Simplify administrative processes to increase efficiency</i></p> <p><i>5.4 Pursue innovative approaches to revenue generation and budgeting</i></p>							
Area (Dept., Unit, College, or Division)	Planned Actions	Timeframe (of development and implementation)	New Resources Requested (personnel, facilities, and operational funding)	Expected Cost	Source of Resources (new, reallocation of existing funds, fee, philanthropic, etc.)	Assessment Criteria (outcome when achieved or key performance indicator)	University Initiative
CoSE	<p><b>Provide Infrastructure Befitting a Carnegie R1 University:</b></p> <p>Provide funding for staff positions to support the increase in research expenditures and graduate student enrollment since 2017. Critically needed are additional technical support staff for research laboratories, budget analysts to assist with research programs, staff to support increased graduate enrollments and to market research</p>	Beginning 2023	Personnel	\$1M ongoing	New	Increase in: funded grants, graduate students recruited, graduate students retained, improved laboratory space	5.2

	successes. Conduct a research space audit to determine spaces that can be consolidated and/or renovated as well as highlight the need for new research spaces.						
CoSE	Increase staffing and M/O budget by any means available.	Beginning 2023	Operational	\$1M	New	Departments do not run out of M&O mid-year	5.2
CoSE	Professional advancement opportunities for staff including administrative, technical, and academic advisors.	Beginning 2023	Operational	\$500K	Click or tap here to enter text.	Number of staff retained	5.0
CoSE	Explore establishing a new and endowed College of Engineering featuring administrative capabilities and an innovative organizational structure that preserves our student-centered, hands-on learning culture, enables synergistic collaborations between the engineering disciplines, operates with reduced administrative burden, and adopts best practices from R1 universities.	Beginning 2023	Operational	Click or tap here to enter text.	New	Click or tap here to enter text.	5.2
CoSE	Work with the Construction Advisory Board and the CIM Patrons Board in discussions about raising money for an endowed professorship or two, and potentially fundraising for a new building for CSM and CIM.	Beginning 2023	Personnel	Donation	New	Number of new professorships	5.1



## VI. Planning Priorities

**Using university goals and initiatives as a guide, list and briefly describe up to five top priorities from your planned actions for the 2023-2029 planning cycle and indicate the university goal/initiative to which the unit's action is linked.**

- 1. Essential Doctoral Programs:** Double the number of doctoral programs on campus. Fall 2023, within the College of Science and Engineering, submit proposals to the THECB for three new doctoral programs in 1) Mathematics, 2) Integrated Molecular and Biophysical Chemistry, and 3) Civil Engineering. (3.1)
- 2. Increase Research Capabilities:** Fall 2023 and Fall 2024, annually add two new tenure-line faculty to each of the existing doctoral programs in Aquatic Resources and Integrated Biology, Computer Science, Materials Science and Engineering, and Mathematics Education. (3.1) and (3.2)
- 3. Support Undergraduate Programs with Large Enrollment:** Fall 2023 and Fall 2024, annually add one new tenure-line faculty and one teaching faculty line to improve the student/faculty ratio in three undergraduate programs with a high rate of enrollment growth: Construction Science and Management, Computer Science, and Mechanical Engineering. Fall 2022 enrollment for CSM was 600 students with potential to double with additional support. Undergraduate enrollment in Computer Science was 1557 for Fall 2022, with current enrollment trends pointing to over 2000 students in the program for Fall 2023. Over 800 new students have been admitted to the Mechanical Engineering program for Fall 2023. (2.1)
- 4. Student Success:** Allow the new Dean of CoSE to enhance student success by providing funding for a student success program that could include: A centralized advising center for pre-med/dent/pharm/PA/vet students administered by CoSE and available to all TXST students, additional funding for peer instruction to support large enrollment classes, and support for increased undergraduate student participation in research. (1.1) and (1.4)
- 5. Provide Infrastructure Befitting a Carnegie R1 University:** Provide funding for five new staff positions each year for the next two years. Critically needed are additional technical support staff for research laboratories, budget analysts to assist with research programs, staff to support increased graduate enrollments and to market research successes. Conduct a research space audit to determine spaces that can be consolidated and/or renovated as well as highlight the need for new research spaces. (5.2)