



TEXAS A&M UNIVERSITY
CORPUS CHRISTI

Type A Civil & Industrial Engineering Update

TEXAS A&M UNIVERSITY-CORPUS CHRISTI



A New Era of Innovation

Texas A&M University-
Corpus Christi is
establishing a new
College of Engineering

Infrastructure

- 5 labs to be used across 12 different Civil and Industrial Engineering courses
- Will provide hands-on opportunities to undergraduate students when pursuing research experience
- Will be used by faculty when pursuing externally funded research, for example, in areas of coastal resilience.



Laboratories

1. Construction Materials Testing Laboratory

- The lab equipment will be used for measurements and characterization of construction materials used in the construction of highway structures such as pavements, bridges, retaining walls, box culverts, etc.

2. Structure Dynamics Laboratory

- The laboratory equipment will provide students hands-on experience to reinforce understanding of the principles of structural engineering at the element and system levels of both concrete and steel structures.

3. Hydraulics and Hydrology Laboratory

- The laboratory equipment will be used for measurements of water flow through pipes and pumping systems, water flow through laboratory open channels. The equipment will also be used for field measurements, for example, flow through hydraulic structures, hydraulic processes, hydrological cycle, water distribution systems, reservoir, dams, and watersheds.

Laboratories cont.

4. **Augmented Reality Laboratory**

- The laboratory equipment will be used for simulation in an immersive environment on human perceptual, cognitive, and motor abilities relevant to human factors. The equipment will be used in class projects for students using human factors knowledge in simulation environments. The data acquired from the simulation environment can be used for experimental design and analysis in Industrial Engineering curriculum.

5. **Human Factors Laboratory**

- The laboratory equipment will be used for assessments of situation awareness, risk assessments, response execution, human-machine interactions, cognitive tasks, etc. Data acquired from Human Factors Laboratory can also be used in Kansei engineering consideration which translates human perceptions, impressions, and feelings into product design parameter considerations.

Breakdown of Funds

<u>Laboratory</u>	<u>Cost</u>
1. Construction Materials Testing Laboratory	\$1,279,711.93
2. Structure Dynamics Laboratory	\$25,000.00
3. Hydraulics and Hydrology Laboratory	\$238,969.24
4. Augmented Reality Laboratory	\$7,000.00
5. Human Factors Laboratory	\$29,981.68
TOTAL	\$1,580,662.85

Remaining Funds

<u>Fund Amount</u>	<u>Usage</u>
\$419,337.15	Remaining funds will be used for start-up support for Industrial Engineering faculty and additional laboratory equipment.



Completion Date

The laboratory set up
will be completed by
December 31, 2022.

New Faculty Acquisitions



Dr. Nancy Soliman
*Assistant Professor,
Civil Engineering*



Dr. Miguel Montoya
*Assistant Professor,
Civil Engineering*



Dr. Hongwei Hsiao
*Rogelio “Roger” Benavides
Chair of Industrial Safety*

**Additionally, two assistant professor positions, one in Civil Engineering and another in Industrial Engineering, will be hired for Fall 2022.*



Curriculum and Course Development

1. 12 new courses for Civil Engineering
 - Construction Materials Testing Laboratory
 - Structure Dynamics Laboratory
 - Hydraulics and Hydrology Laboratory
2. 14 new courses for Industrial Engineering
 - Augmented Reality Laboratory
 - Human Factors Laboratory

Enrollment Data

	Fall 2020	Fall 2021
Mechanical Engineering	333	269
Mechanical Technology	59	52
Electrical Engineering	91	90
Civil Engineering	11	48
Industrial Engineering	5	6
TOTAL	499	465

Graduate Data

1. 33% of Mechanical Engineering and 36% of Electrical Engineering graduates started their first job in the Coastal Bend.
2. 47% of Mechanical Engineering and 21% of Electrical Engineering graduates started their first job in the state outside the Coastal Bend.
3. No graduates for Industrial or Civil Engineering yet.



Matching Funds (or External Funding)

Sponsored
Research
Funding:

FY20 - \$1.13M

FY21 - \$1.71M

State
Legislative
Appropriations:

FY21 - \$1.15M

FY22 - \$1.1M