Construction Engineering (CONE) B.S.

Construction Engineering (CONE) B.S. Web Site (https://www.tamuc.edu/programs/construction-engineering-bs/)

The U.S. Department of Education defines a Construction Engineering educational program as:

A program that prepares individuals to apply scientific, mathematical, and management principles to the planning, design, and building of facilities and structures. Includes instruction in civil engineering, structural principles, site analysis, computer-assisted design, geology, evaluation and testing, materials, contracting, project management, graphic communications, and applicable laws and regulations.

Construction engineering is involved in the planning, management, and building of structures and facilities essential to societies and communities as well as the overall improvement in the standard of living. The availability of construction engineers is imperative to the rebuilding and maintaining of the infrastructure in the United States, while at the same time developing an emerging infrastructure to support the continued population growth and environment. Federal, state, and local agencies project a faster than average growth rate for construction engineers over the next decade.

Graduates of the Bachelor of Science in Construction Engineering program at Texas A&M University-Commerce will...

- Engage in life-long growth within the construction profession as evidenced by, but not limited to, continuing education, participation in professional societies and conferences, industry certifications, or graduate education.
- Serve as a catalyst for technology within the construction profession as evidenced by, but not limited to utilization of industry accepted project controls software, responsibility for developing recommendations for industry accepted systems, or serving as a liaison between company, vendors, and technology user groups.
- Meet professional requirements necessary for engineering licensure.

Construction engineering at Texas A&M University-Commerce emphasizes the application of engineering and scientific concepts and principles required in the construction industry. In addition the program will consider current and future sustainable technologies.

Construction Engineering Student Outcomes:

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

3. an ability to communicate effectively with a range of audiences

4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

The Bachelor of Science in Construction Engineering is accredited by: The Engineering Accreditation Commission of ABET, http://www.abet.org

Freshman

Fall	Hours	Spring	Hours
ENG 1301	3	ENG 1302	3
CHEM 1311	3	HIST 1301	3
CHEM 1111	1	Component Area	3
MATH 2413	4	MATH 2414	4
ENGR 110	3	PHYS 2425	4
ENGR 1304	3		
	17		**17**

Sophomore

Fall	Hours	Spring	Hours
HIST 1302	3	PSCI 2305	3
MATH 2415	4	ECO 2302	3
PHYS 2426	4	CONE 221	3
ENGR 2303	3	ENGR 213	3

	Hours		Hours
ENGR 2304	3	ENGR 2308	3
	17		**15**

Junior

Fall	Hours	Spring	Hours
PSCI 2306[*]	3	MATH 2318	3
Literature, Philosophy, & Culture[*]	3	CONE 322	3
MATH 2320[*]	3	CONE 332	3
CONE 321	3	CONE 341	3
CONE 331	3	CONE 351	3
	15		**15**

Senior

Fall	Hours	Spring	Hours
CONE 413	3	undefined	3
CONE 414	3	CONE 423	3
CONE 441	3	CONE 424	3
CONE 470	3	CONE 432	3
ENGR 411	3	CONE 471	3
	15		**15**

Total Hours: 126

Core Curriculum Courses

See the Core Curriculum Requirements (http://coursecatalog.tamuc.edu/undergrad/core-curriculum-requirements/)	42

Required courses in the major

ENGR 110	Introduction to Engineering and Technology	3
ENGR 1304	Computer-Aided Design (CAD)	3
ENGR 2304	Computing for Engineers	3
ENGR 2303	Engineering Mechanics- Statics and Dynamics	3
ENGR 2308	Engineering Economic Analysis	3
ENGR 213	Engineering Probability and Statistics	3
ENGR 411	Engineering Management	3
CONE 221	Building Construction	3
CONE 321	Construction Estimating	3
CONE 322	Construction Planning and Scheduling	3
CONE 331	Mechanics of Materials	3
CONE 332	Structural Analysis and Design	3
CONE 341	Engineering Hydrology & Hydraulics	3
CONE 351	Surveying for Construction	3
CONE 413	Design and Construction of Steel Structures	3
CONE 414	Design and Construction of Concrete Structures	3
CONE 424	Construction Accounting and Financial Management	3
CONE 432	Design and Construction of Foundations	3
CONE 433	Construction Project Controls	3
CONE 441	Highway and Heavy Construction	3
CONE 470	Preparation for Construction Engineering Capstone Project	3
CONE 471	Construction Engineering Capstone Project	3

Required support courses

CHEM 1311	General and Quantitative Chemistry I [*]	
CHEM 1111	General and Quantitative Chemistry Laboratory I [*]	
MATH 2413	Calculus I (4 sch) [*]	
MATH 2414	Calculus II	4
MATH 2415	Calculus III	4
MATH 2320	Differential Equations	3
MATH 2318	Linear Algebra	3
ECO 2301	GLB/US-Prin Macro Economics (3 sch) [*]	
or ECO 2302	Principles of Micro Economics	

PHYS 2425	University Physics I (4 sch) [*]	
PHYS 2426	University Physics II (4 sch) [*]	4
Total Hours		**126**

[*]   These courses should be used to satisfy the Core Curriculum Requirements in Social and Behavioral Science, Natural Sciences, and Mathematics, respectively; otherwise, the credit hours required to earn the B.S. in CONE will exceed 126.

A grade of "C" or higher must be earned in all courses in this Major.