Department of Engineering Technology

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Degree Programs Offered

Bachelor of Science (BS), major in Concrete Industry Management
Bachelor of Science (BS), major in Construction Science and Management
Bachelor of Science (BS), major in Technology Management (Electronics Technology Concentration)
Bachelor of Science (BS), major in Technology Management (Manufacturing Technology Concentration)
Bachelor of Science (BS), major in Technology Management (Teacher Certification in Technology Education, Grades 6-12)
Bachelor of Science in Technology (BST), major in Engineering Technology (Construction Engineering Technology Specialization)
Bachelor of Science in Technology (BST), major in Engineering Technology (Electrical Engineering Technology Specialization)
Bachelor of Science in Technology (BST), major in Engineering Technology (Environmental Engineering Technology Specialization)
Bachelor of Science in Technology (BST), major in Engineering Technology (Manufacturing Engineering Technology Specialization)
Bachelor of Science in Technology (BST), major in Engineering Technology (Mechanical Engineering Technology Specialization)

Minor Offered

Technology

The mission of the Department of Engineering Technology is to prepare students for technical/professional careers in industry and education. The mission is accomplished through a dedicated faculty offering programs in specialized areas with a formal, technical focus. Upon graduation, students are prepared to assume positions of professional responsibility in the areas of manufacturing, construction, concrete industry management, computer aided technologies, electronics, and education. Fourteen well-equipped technical laboratories serve to educate students in the techniques and processes used by contemporary world class industries.

The Bachelor of Science major in Concrete Industry Management (CIM) prepares students who are grounded in basic construction management, who are knowledgeable in concrete technology and techniques and who are able to manage people and systems to promote products and devices related to the concrete industry. CIM professionals find a wide array of opportunities in the concrete industry including positions in sales, operations, technical services and construction management. This degree program is accredited by the National Steering Committee (NSC) of CIM.

The Bachelor of Science major in Construction Science and Management (CSM) prepares students to enter professional careers in the construction industry. Graduates may become construction and project managers, estimators, schedulers, field engineers, general and/or subcontractors, code inspectors, home and commercial contractors, material suppliers and technical sales representatives. Students learn the technical aspects of how construction projects are completed through classes in residential building, engineering and industrial construction, and they learn how to manage construction through the required business minor and courses in estimating, scheduling and project management. Career opportunities are many in this industry, which comprises 16% of the Gross National Product. This degree program is accredited by the American Council for Construction Education (ACCE).

The Bachelor of Science major in Technology Management prepares students for professional management positions in industry, or to become public school teachers in the field of Technology Education. Industry bound graduates will be prepared for work involving materials, processes, product design and development, quality management, safety management, supply chain issues, facility planning, and similar concepts in industrial management. Graduates of the Technology Education track will be prepared to teach a variety of industry and technology related subjects in Texas public schools. This degree has three specializations, Manufacturing Technology, Electronics Technology, and Technology Education. Students interested in pursuing the Bachelor of Science in Technology Management should see a faculty advisor in the Department of Engineering Technology for more details.

The Bachelor of Science in Technology major in Engineering Technology provides students with the technical background to work with engineers in planning production processes, developing tooling, establishing quality assurance procedures, developing safety programs, establishing work methods, and setting time standards. Students can specialize in Electrical Engineering Technology, Construction Engineering Technology, Environmental Engineering Technology, Manufacturing Engineering Technology, and Mechanical Engineering Technology. The Bachelor of Science in Technology major in Industrial Technology prepares students for work in industry in materials, processes, industrial safety, and concepts of industrial management. This degree has program majors in Manufacturing, and General Technology. The General Technology major, under Industrial Technology, can be customized to meet specific student needs offering opportunities in electronics, industrial safety, education, etc. Students interested in exploring such opportunities should see an Engineering Technology Department advisor for more details.

Teacher Certification

A student seeking certification to teach at the secondary level must take CI 3325, 4332, 4343, 4370, RDG 3323 and EDST 4681. The student who has further questions should see the undergraduate advisor in Engineering Technology.

Bachelor of Science (BS)
Major Concrete Industry Management
(Minor in Business Administration)
Minimum required: 120 semester hours

General Requirements:

1. A minimum of 9 writing intensive hours and a total of 36 advanced hours are required to graduate. An advanced course is one that is numbered above 3000 and below 5000.
2. Departmental requirements that also satisfy the general education core curriculum requirements for the following components: Mathematics- MATH 2417; Life & Physical Science- CHEM 1341 and PHYS 1315; and Social & Behavioral Science- ECO 2301. See the Academic Services section of this catalog for the English literature requirements.
3. If two years of the same modern language are taken in high school, then no additional language hours will be required for the degree. In the absence of such high school language, two semesters of the same modern language must be taken at the college level.

Freshman Year - 1st Semester		Freshman Year - 2nd Semester		Sophomore Year - 1st Semester		Sophomore Year - 2nd Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
US 1100	1	ENG 1320	3	ENG Literature	3	POSI 2320	3
ENG 1310	3	HIST 1310	3	HIST 1320	3	COMM 1310	3
POSI 2310	3	MATH 2417	4	MATH 2321	3	MATH 2328	3
CHEM 1141, 1341	4	PHYS 1315/1115	4	CSM 2342	3	CSM 2313	3
CSM 1260	2			PHYS 1325/1125	4	CIM 3420	4
Total	13	Total	14	Total	16	Total	16

Sophomore Year - Summer Session		Junior Year - 1st Semester		Junior Year - 2nd Semester		Senior Year - 1st Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
TECH 2190	1	CIM 3340	3	ART, DAN, MU, or TH 2313	3	MKT 3343	3
		MGT 3303	3	FIN 3325	3	CIM 4398	3
		ACC 2301	3	CIM 3366	3	CIM 4310	3
		TECH 2351	3	CIM 4330	3	CIM 4340	3
		CIM 3330	3		3	CSM 4369	3
						TECH 3364	3
Total	1	Total	15	Total	12	Total	18

Senior Year - 2nd Semester	
Course	Hr
ENGR 3315	3
TECH 4380	3
ECO 2301	3
BLAW 2361	3
PHIL 1305 or 1320	3
Total	15

Bachelor of Science (BS)
Major in Construction Science and Management
(Minor in Business Administration)
Minimum required: 120 semester hours

General Requirements:

1. A minimum of 9 writing intensive hours and a total of 36 advanced hours are required to graduate. An advanced course is one that is numbered above 3000 and below 5000.
2. Departmental requirements that also satisfy the general education core curriculum requirements for the following components: Mathematics- MATH 2417; Life & Physical Sciences- CHEM 1341 and PHYS 1315; Language, Philosophy & Culture- PHIL 1320; and Social & Behavioral Sciences- ECO 2301. See the Academic Services section of this catalog for the English literature requirements.
3. If two years of the same modern language are taken in high school, then no additional language hours will be required for the degree. In the absence of such high school language, two semesters of the same modern language must be taken at the college level.
4. Effective Fall 2010: No "D" grades received at other institutions will be credited towards the major.
5. Effective Fall 2010: Students will enter the 30 semester hour Pre-Construction Curriculum, which will consist of MATH 2328, MATH 2417, CHEM 1341/1141, PHYS 1315/1115, PHYS 1325/1125, CSM 1260, CSM 2313, CSM 2342 and CSM 2360. No grade lower than a "C" will be accepted and a 2.5 GPA must be maintained in these classes before a student will be allowed to enroll in advanced level Construction courses.
6. After completing the Pre-Construction Curriculum, students will be allowed to enter the Bachelor of Science Degree in Construction Science and Management, and will be allowed to enroll in the following Construction classes: CSM 2160, CSM 3360, CSM 3361, CSM 3363, CSM 3366, CSM 3367, CSM 4360, CSM 4361, CSM 4364, CSM 4368 and CSM 4369.

Freshman Year - 1st Semester		Freshman Year - 2nd Semester		Sophomore Year - 1st Semester		Sophomore Year - 2nd Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
CSM 1260	2	MATH 2328	3	CHEM 1341/1141	4	COMM 1310	3
PHYS 1315/1115	4	PHYS 1325/1125	4	ACC 2301	3	TECH 2351	3
MATH 2417	4	CSM 2342	3	CSM 2313	3	CSM 2360	3
US 1100	1	ENG 1320	3	BLAW 2361	3	ECO 2301	3
ENG 1310	3	POSI 2320	3	PHIL 1320	3	HIST 1310	3
POSI 2310	3						
Total	17	Total	16	Total	16	Total	15

Sophomore Year - Summer		Junior Year - 1st Semester		Junior Year - 2nd Semester		Senior Year - 1st Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
TECH 2190	1	CSM 4313	3	CSM 3360	3	CSM 4368	3
		CSM 3366	3	CSM 3363	3	MGT 3303	3
		CSM 3361	3	ENG Literature (see gen. req. 2)	3	CSM 4369	3
		HIST 1320	3	CSM 3367	3	TECH 4380	3
		CSM 2160	1	CSM 4361	3	CSM 4364	3
Total	1	Total	13	Total	15	Total	15

Senior Year - 2nd Semester	
Course	Hr
CSM 4360	3
ART,DAN,MU, or TH 2313	3
MKT 3343	3
CIS 3317	3
Total	12

Bachelor of Science (BS)
Major in Technology Management
(Concentration in Electronics Technology)
Minimum required: 120 semester hours

General Requirements:

1. A minimum of 9 writing intensive hours and a total of 36 advanced hours are required to graduate. An advanced course is one that is numbered above 3000 and below 5000.
2. Departmental requirements that also satisfy the general education core curriculum requirements for the following components: Mathematics - MATH 1315; Life & Physical Sciences - CHEM 1341 and PHYS 1315; and Social & Behavioral Sciences - ECO 2301. See the Academic Services section of this catalog for the English Literature requirement.
3. If two years of the same modern language are taken in high school, then no additional language hours will be required for the degree. In the absence of such high school language, two semesters of the same modern language must be taken at the college level.

Freshman Year - 1st Semester		Freshman Year - 2nd Semester		Sophomore Year - 1st Semester		Sophomore Year - 2nd Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
MATH 1315	3	MATH 2328	3	ECO 2301	3	TECH 3370	3
ART, DAN, MU, or TH 2313	3	PHYS 1315, 1115	4	ENGR 1313	3	TECH 2310	3
ENG 1310	3	ENG 1320	3	ENGR 2300	3	TECH 2344	3
POSI 2310	3	POSI 2320	3	TECH 2370	3	TECH 2351	3
COMM 1310	3	CHEM 1341, 1141	4	PHYS 1325, 1125	4	TECH 3373	3
US 1100	1						
Total	16	Total	17	Total	16	Total	15

Sophomore Year - Summer		Junior Year - 1st Semester		Junior Year - 2nd Semester		Senior Year - 1st Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
TECH 2190	1	TECH 4374	3	TECH 3357	3	MGT 3303	3
		TECH 4372	3	TECH 3345	3	TECH 4395	3
		TECH 3364	3	TECH 4392	3	TECH 4399	3
		ENG Literature (see gen. req. #2)	3	TECH 4373	3	HIST 1320	3
		PHIL 1320	3	HIST 1310	3		
		PFW	1				
Total	1	Total	16	Total	15	Total	12

Senior Year - 2nd Semester	
Course	Hr
MGT 4330	3
TECH 4396	3
TECH 4380	3
TECH 4398	3
Total	12

Bachelor of Science (BS)
Major in Technology Management
(Concentration in Manufacturing Technology)
Minimum required: 120 semester hours

General Requirements:

1. A minimum of 9 writing intensive hours and a total of 36 advanced hours are required to graduate. An advanced course is one that is numbered above 3000 and below 5000.
2. Departmental requirements that also satisfy the general education core curriculum requirements for the following components: Mathematics - MATH 1315; Life & Physical Sciences - CHEM 1341 and PHYS 1315; and Social & Behavioral Science - ECO 2301. See the Academic Services section of this catalog for the English Literature requirements.
3. If two years of the same modern language are taken in high school, then no additional language hours will be required for the degree. In the absence of such high school language, two semesters of the same modern language must be taken at the college level.

Freshman Year - 1st Semester		Freshman Year - 2nd Semester		Sophomore Year - 1st Semester		Sophomore Year - 2nd Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
MATH 1315	3	MATH 2328	3	ART, DAN, MU, or TH 2313	3	PHYS 1325, 1125	4
TECH 1363	3	CHEM 1341, 1141	4	ENGR 1313	3	TECH 2310	3
ENG 1310	3	ENG 1320	3	ENGR 2300	3	TECH 2344	3
POSI 2310	3	POSI 2320	3	PHYS 1315, 1115	4	TECH 2351	3
COMM 1310	3	TECH 1393	3			TECH 2370	3
US 1100	3						
Total	16	Total	16	Total	13	Total	16

Sophomore Year - Summer		Junior Year - 1st Semester		Junior Year - 2nd Semester		Senior Year - 1st Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
TECH 2190	1	ENG Literature (see gen. req. #2)	3	TECH 3357	3	MGT 3303	3
		TECH 3364	3	TECH 4362	3	TECH 4395	3
		TECH 4374	3	TECH 4373	3	TECH 4330	3
		PHIL 1320	3	TECH 3345	3	TECH 4380	3
		ECO 2301	3	HIST 1310	3	HIST 1320	3
		PFW	1				
Total	1	Total	16	Total	15	Total	15

Senior Year - 2nd Semester	
Course	Hr
MGT 4330	3
TECH 4396	3
TECH 4392	3
TECH 4398	3
Total	12

Bachelor of Science (BS)
Major in Technology Management
(Teacher Certification in Technology Education, Grades 6-12)
Minimum required: 122 semester hours

General Requirements:

1. A minimum of 9 writing intensive hours and a total of 36 advanced hours are required to graduate. An advanced course is one that is numbered above 3000 and below 5000.
2. Departmental requirements that also satisfy the general education core curriculum requirements for the following components: Mathematics- MATH 1315; Life & Physical Sciences- CHEM 1341 and PHYS 1315; and Social & Behavioral Sciences- ECO 2301. See the Academic Services section of this catalog for the English Literature requirements.
3. If two years of the same modern language are taken in high school, then no additional language hours will be required for the degree. In the absence of such high school language, two semesters of the same modern language must be taken at the college level.

Freshman Year - 1st Semester		Freshman Year - 2nd Semester		Sophomore Year - 1st Semester		Sophomore Year - 2nd Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
MATH 1315	3	MATH 2328	3	PHYS 1315, 1115	4	PHYS 1325, 1125	4
ART, DAN, MU, TH 2313	3	CHEM 1341, 1141	4	ENGR 1313	3	TECH 2310	3
ENG 1310	3	ENG 1320	3	ENGR 2300 or CSM 2342	3	TECH 2344	3
POSI 2310	3	POSI 2320	3	Social & Behavioral Science (see gen.req. 2)	3	TECH 2351	3
COMM 1310	3	PHIL 1320	3	CIS 1323	3	TECH 2370	3
US 1100	1						
Total	16	Total	16	Total	16	Total	16

Sophomore Year - Summer		Junior Year - 1st Semester		Junior Year - 2nd Semester		Senior Year - 1st Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
CSM 2313	3	CSM 2360	3	TECH 4362	3	CI 4343	3
HIST 1310	3	TECH 4373 or 4374	3	TECH 3322	3	CI 4370	3
		TECH 4380	3	HIST 1320	3	RDG 3323	3
		TECH 1363	3	MC 4312	3	TECH 4395	3
		CI 3325	3	CI 4332	3	ENG Literature (see gen. req. #2)	3
		PFW	1				
Total	6	Total	16	Total	15	Total	15

Senior Year - 2nd Semester	
Course	Hr
EDST 4681	6
Total	6

Bachelor of Science in Technology (BST)
Major in Engineering Technology
(Construction Engineering Technology Specialization)
Minimum required: 120 semester hours

General Requirements:

1. A minimum of 9 writing intensive hours and a total of 36 advanced hours are required to graduate. An advanced course is one that is numbered above 3000 and below 5000.
2. Departmental requirements that also satisfy the general education core curriculum requirements for the following components: Mathematics- MATH 2471, Life & Physical Sciences- CHEM 1341 and CHEM 1342, and Social & Behavioral ScienceS-ECO 2301. See the Academic Services section of this catalog for the English literature requirements.
3. If two years of the same language are taken in high school, then no additional language hours will be required for the degree. In the absence of such high school language, two semesters of the same modern language must be taken at the college level.

Freshman Year - 1st Semester		Freshman Year - 2nd Semester		Sophomore Year - 1st Semester		Sophomore Year - 2nd Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
CHEM 1141, 1341	4	CHEM 1142, 1342	4	HIST 1310	3	TECH 2351	3
MATH 2471	4	MATH 2472	4	CSM 2342	3	ENG 1320	3
US 1100	1	CSM 2313	3	ECO 2301	3	HIST 1320	3
ENG 1310	3	PHYS 1430	4	PHYS 2425	4	CSM 2360	3
POSI 2310	3			COMM 1310	3	TECH 2344	3
Total	15	Total	15	Total	16	Total	15

Sophomore Year - Summer		Junior Year - 1st Semester		Junior Year - 2nd Semester		Senior Year - 1st Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
TECH 2190	1	CS 1428	4	CSM 3367	3	CSM 4369	3
		POSI 2320	3	ART/DAN/MU/TH 2313	3	IE 3320	3
		CSM 3360	3	MGT 3303	3	CSM 4368	3
		PHIL 1320	3	CSM 4361	3	CSM 4364	3
		CSM 3361	3	ENG Lit (see gen. req. 2)	3	TECH 3364	3
Total	1	Total	16	Total	15	Total	15

Senior Year - 2nd Semester	
Course	Hr
MGT 4330	3
ENGR 3315	3
CSM 4360	3
TECH 4380	3
Total	12

Bachelor of Science in Technology (BST)
Major in Engineering Technology
(Electrical Engineering Technology Specialization)
Minimum required: 122 semester hours

General Requirements:

1. A minimum of 9 writing intensive hours and a total of 36 advanced hours are required to graduate. An advanced course is one that is numbered above 3000 and below 5000.
2. Departmental requirements that also satisfy the general education core curriculum requirements for the following components: Mathematics- MATH 2471, Life & Physical Sciences- CHEM 1341 and CHEM 1342, and Social & Behavioral Sciences-ECO 2301. See the Academic Services section of this catalog for the English literature requirements.
3. If two years of the same language are taken in high school, then no additional language hours will be required for the degree. In the absence of such high school language, two semesters of the same modern language must be taken at the college level.

Freshman Year - 1st Semester		Freshman Year - 2nd Semester		Sophomore Year - 1st Semester		Sophomore Year - 2nd Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
CHEM 1141, 1341	4	CHEM 1142, 1342	4	CS 1428	4	EE 2420	4
MATH 2471	4	ENGR 2300	3	ENGR 1313	3	TECH 3364	3
US 1100	1	MATH 2472	4	PHYS 1430	4	PHYS 2425	4
ENG 1310	3	ENG 1320	3	COMM 1310	3	POSI 2320	3
POSI 2310	3	HIST 1310	3	HIST 1320	3	TECH 2344	3
Total	15	Total	17	Total	17	Total	17

Sophomore Year - Summer		Junior Year - 1st Semester		Junior Year - 2nd Semester		Senior Year - 1st Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
TECH 2190	1	TECH 2370	3	TECH 3373	3	TECH 4380	3
		EE 3420	4	ART, DAN, MU, or TH 2313	3	TECH 3345	3
		IE 3320	3	ENG Lit (see gen. req. 2)	3	MGT 3303	3
		TECH 2351	3	PHIL 1320	3	TECH 4372	3
		ECO 2301	3	TECH 3370	3		
Total	1	Total	16	Total	15	Total	12

Senior Year -2nd Semester	
Course	Hr
MGT 4330	3
TECH 4392	3
TECH 4373	3
TECH 4398	3
Total	12

Bachelor of Science in Technology (BST)
Major in Engineering Technology
(Environmental Engineering Technology Specialization)
Minimum required: 124 semester hours

General Requirements:

1. A minimum of 9 writing intensive hours and a total of 36 advanced hours are required to graduate. An advanced course is one that is numbered above 3000 and below 5000.
2. Departmental requirements that also satisfy the general education core curriculum requirements for the following components: Mathematics- MATH 2471, Life & Physical Sciences- CHEM 1341 and CHEM 1342, and Social & Behavioral Sciences-ECO 2301. See the Academic Services section of this catalog for the English literature requirements.
3. If two years of the same language are taken in high school, then no additional language hours will be required for the degree. In the absence of such high school language, two semesters of the same modern language must be taken at the college level.

Freshman Year - 1st Semester		Freshman Year - 2nd Semester		Sophomore Year - 1st Semester		Sophomore Year - 2nd Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
CHEM 1141, 1341	4	CHEM 1142, 1342	4	ENGR 1313	3	PHYS 2425	4
MATH 2471	4	ENGR 2300	3	PHYS 1430	4	ECO 2301	3
US 1100	1	MATH 2472	4	TECH 2330	3	COMM 1310	3
ENG 1310	3	ENG 1320	3	HIST 1320	3	POSI 2320	3
POSI 2310	3	HIST 1310	3	CS 1428	4	TECH 2344	3
Total	15	Total	17	Total	17	Total	16

Sophomore Year - Summer		Junior Year - 1st Semester		Junior Year - 2nd Semester		Senior Year - 1st Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
TECH 2190	1	IE 3320	3	TECH 4380	3	MFGE 2332	3
		TECH 2351	3	GEO 2410	4	TECH 4330	3
		ART, DAN, MU, or TH 2313	3	MGT 3303	3	TECH 3345	3
		ENG Lit (see gen. req. 2)	3	TECH 3364	3	CSM 4368	3
		PHIL 1320	3			GEO 4350	3
Total	1	Total	15	Total	13	Total	15

Senior Year - 2nd Semester	
Course	Hr
ENGR 3315	3
TECH 4392	3
GEO 4313	3
MGT 4330	3
TECH 4398	3
Total	15

Bachelor of Science in Technology (BST)
Major in Engineering Technology
(Manufacturing Engineering Technology Specialization)
Minimum required: 123 semester hours

General Requirements:

1. A minimum of 9 writing intensive hours and a total of 36 advanced hours are required to graduate. An advanced course is one that is numbered above 3000 and below 5000.
2. Departmental requirements that also satisfy the general education core curriculum requirements for the following components: Mathematics- MATH 2471, Life & Physical Sciences- CHEM 1341 and CHEM 1342, and Social & Behavioral Sciences-ECO 2301. See the Academic Services section of this catalog for the English literature requirements.
3. If two years of the same language are taken in high school, then no additional language hours will be required for the degree. In the absence of such high school language, two semesters of the same modern language must be taken at the college level.
4. 3 hours of Manufacturing Engineering Technology electives – 3 hours from: ENGR 3373, TECH 4392, TECH 3357, or TECH 4374.

Freshman Year - 1st Semester		Freshman Year - 2nd Semester		Sophomore Year - 1st Semester		Sophomore Year - 2nd Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
CHEM 1141, 1341	4	CHEM 1142, 1342	4	ENGR 1313	3	PHYS 2425	4
MATH 2471	4	ENGR 2300	3	PHYS 1430	4	TECH 2310	3
US 1100	1	MATH 2472	4	CS 1428	4	TECH 2351	3
ENG 1310	3	ENG 1320	3	ART, DAN, MU, or TH 2313	3	COMM 1310	3
TECH 1363	3	TECH 1393	3			TECH 2344	3
Total	15	Total	17	Total	14	Total	16

Sophomore Year - Summer		Junior Year - 1st Semester		Junior Year - 2nd Semester		Senior Year - 1st Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
TECH 2190	1	Mfg. ET Elective (see gen. req #4)	3	TECH 4362	3	TECH 4395	3
		IE 3320	3	TECH 3364	3	ENG Literature (see gen. req. 2)	3
		ECO 2301	3	PHIL 1320	3	TECH 4330	3
		HIST 1310	3	POSI 2320	3	TECH 3345	3
		POSI 2310	3	HIST 1320	3	MGT 3303	3
Total	1	Total	15	Total	15	Total	15

Senior Year - 2nd Semester	
Course	Hr
TECH 4380	3
ENGR 3315	3
MGT 4330	3
TECH 4396	3
TECH 4398	3
Total	15

Bachelor of Science in Technology (BST)
Major in Engineering Technology
(Mechanical Engineering Technology Specialization)
Minimum required: 123 semester hours

General Requirements:

1. A minimum of 9 writing intensive hours and a total of 36 advanced hours are required to graduate. An advanced course is one that is numbered above 3000 and below 5000.
2. Departmental requirements that also satisfy the general education core curriculum requirements for the following components: Mathematics- MATH 2471, Life & Physical Sciences- CHEM 1341 and CHEM 1342, and Social & Behavioral Sciences- ECO 2301. See the Academic Services section of this catalog for the English literature requirements.
3. If two years of the same language are taken in high school, then no additional language hours will be required for the degree. In the absence of such high school language, two semesters of the same modern language must be taken at the college level.

Freshman Year - 1st Semester		Freshman Year - 2nd Semester		Sophomore Year - 1st Semester		Sophomore Year - 2nd Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
CHEM 1141, 1341	4	CHEM 1142, 1342	4	ENGR 1313	3	PHYS 2425	4
MATH 2471	4	ENGR 2300	3	PHYS 1430	4	TECH 2310	3
US 1100	1	MATH 2472	4	CS 1428	4	TECH 2351	3
ENG 1310	3	ENG 1320	3	ART, DAN, MU, or TH 2313	3	COMM 1310	3
TECH 1363	3	TECH 1393	3			TECH 2344	3
Total	15	Total	17	Total	14	Total	16

Sophomore Year - Summer		Junior Year - 1st Semester		Junior Year - 2nd Session		Senior Year - 1st Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
TECH 2190	1	ENGR 3373	3	TECH 3344	3	TECH 4395	3
		IE 3320	3	TECH 3364	3	TECH 3345	3
		ECO 2301	3	PHIL 1320	3	TECH 4365	3
		HIST 1310	3	POSI 2320	3	MGT 3303	3
		POSI 2310	3	HIST 1320	3	ENG Literature (see gen. req. 2)	3
Total	1	Total	15	Total	15	Total	15

Senior Year - 2nd Semester	
Course	Hr
TECH 4380	3
MFGE 4365	3
TECH 4396	3
MGT 4330	3
TECH 4398	3
Total	15

Minor in Technology

A minor in Technology requires 18 hours of Technology courses, of which 9 hours must be advanced. Courses will be determined by conference with a departmental faculty advisor or the Chair of the Department.

Driver and Traffic Safety Education Certification

Students seeking State of Texas Certification in Driver's Education must complete nine semester hours of TECH 4383, 4385, and 4393. For more information on this program contact the Director of the Traffic Safety Center.

Courses in Concrete Industry Management (CIM)

3330 Concrete Construction Methods. (3-0) This course covers forming, shoring, placing and reinforcing operations. Transporting, placing, consolidating, finishing, jointing and curing concrete for cast-in-place foundations, pavements, slabs on ground, structural frames, and other structural members are studied. Other topics include waterproofing concrete foundations and erecting precast concrete members. Prerequisite: CIM 3420.

3340 Understanding the Concrete Construction System. (3-0) A detailed look at how the concrete construction industry works. The course includes a review of model building codes, building officials and their function, concrete industry codes and standards, concrete construction processes, quality assurance systems, contract documents, estimating, construction scheduling and concrete construction markets. Prerequisite: MATH 2328 and CIM 3420.

3366 Applications of Concrete in Construction. (3-0) This course is a detailed study of the many uses of concrete in the construction of buildings, pavements and other facilities. Emphasis will be placed on the advantages, disadvantages, and unique problems faced by materials suppliers, contractors and design professionals when concrete is chosen for specific applications. Prerequisite: CIM 3330.

3420 Fundamentals of Concrete: Properties and Testing. (3-2) This course examines effects of concrete-making materials (aggregates, cements, admixtures, etc.) on the properties of fresh and hardened concrete. Concrete mixture proportioning calculations and statistical analysis of strength tests are also studied. Prerequisite: TECH 2342.

4210 Senior Concrete Lab. (1-2) This course provides students an opportunity to further develop their technical and laboratory knowledge and pursue a project of individual interest. A formal report/presentation will be required at the conclusion of the course. Prerequisite: CIM 4340.

4310 Senior Concrete Lab (1-3) This course provides students an opportunity to further develop their technical and laboratory knowledge and pursue a project of individual interest. A formal report/presentation will be required at the conclusion of the course. Prerequisites: CIM 3366 and CIM 3420 with grades of "C" or higher.

4320 Issues in Concrete and Construction Industry. (3-0) This course involves a case study approach to critically analyze various historical and current events in the concrete and construction industry. Particular emphasis will be placed upon developing a managerial decision-making process incorporating ethical, legal, financial and other business perspectives. Prerequisites: CIM 3340, MGT 3303, FIN 3325, and BLAW 2361.

4330 Management of Concrete Products – Ordering and Scheduling. (3-0). This course is designed to provide the student with a basic understanding of managing the ordering and delivery process common to all concrete products. Emphasis will be in planning, organizing and controlling at both the first-line supervisory and managerial levels. Prerequisites: CIM 3340 and MGT 3303.

4340 Concrete Problems: Diagnosis, Prevention and Dispute Resolution. (3-0) Course involves diagnosing/preventing problems related to concrete production, testing, construction and performance. Students learn to identify causes of fresh and hardened concrete problems, i.e. fast and slow setting, air content variations, low strength, cracking and scaling. Pre-job conferences and dispute resolution methods are examined. Prerequisite: CIM 3366.

4398 Capstone. (3-0) An intensive study of a problem(s) appropriate to the major/student's career interests. Requires knowledge from previous technical/business coursework. Solution(s) for the problem(s) will be presented to an industry committee. Presentation must emphasize depth of analysis, completeness/effectiveness of solution, and presentation skills. Prerequisite: CIM 4330. (WI)

Courses in Construction Science and Management (CSM)

1260 Introduction to the Construction and Concrete Industry. (2-0) This is an introductory course for Construction and Concrete Industry Management (CIM) majors. Residential, commercial, heavy, civil and highway construction is explored including the concrete industry. The role of the contractor, architect/engineer and owner are covered including contracts, careers, sustainability and economic importance of the construction industry.

2160 Introduction to Construction Surveying and Site Layout. (1-1) Common construction surveying and site layout techniques are studied using both optical levels and total stations. Benchmarks, building lines, property lines, differential and profiling are discussed in lecture with applied exercises performed in the laboratory. Prerequisite: Pre-Construction or Instructor's Approval.

2313 Fundamentals of Architectural Problem-Solving and Design. (2-2) This is an introduction to the language of architectural design. Use of the computer and CAD software in the design process. Elements of projection theory to include orthographic and perspective projection. Solving complex problems of building geometry. Section views and their relationship to architectural detailing. Emphasis on the successful integration of construction documents.

2342 Construction Materials and Processes. (3-1) This course will introduce students to various types of construction materials including ceramics, ferrous, non-ferrous, and organic materials used in construction. Their properties, working characteristics and processes used to manufacture and assemble these materials are studied. Laboratory activities are used to reinforce lecture material. Prerequisite: PHYS 1315/1115 or PHYS 1410 or PHYS 1430.

2360 Residential Construction Systems. (2-2) A residential construction course, which deals with interpreting plans and

specifications, along with studying site work, foundations, walls, roofing, ceilings, floor and finishing systems. Also, residential MEP systems are covered along with applicable building codes and construction financing. Prerequisite: CSM 2342 or Instructor's Approval.

3360 Structural Analysis. (3-3) This is a structural engineering fundamentals to include design loads, reactions, force systems, functions of a structure and the analysis of statically determinate and indeterminate structures by classical and modern techniques. Prerequisite: TECH 2351 with a grade of "C" or higher, or Instructor's approval.

3361 Commercial Building Construction Systems. (3-0) This is a commercial building construction systems class that deals with soils, site work, heavy foundations, steel, reinforced concrete and pre-cast structures along with common assemblies. Commercial MEP's are studied along with CSI master format, as-built and shop drawings, schedule of values, AIA documents and appropriate building codes. Prerequisite: Pre-Construction or Instructor's Approval.

3363 Heavy, Civil and Highway Construction Systems. (3-1) Selection, acquisition and capabilities of heavy construction equipment are presented. Applications of economics to performance characteristics and production of equipment is discussed. Sector-specific construction management methods are covered, including unit price estimating, equipment fleet design, repetitive scheduling and major components of highways, bridges and engineered facilities. Prerequisite: Pre-Construction or Instructor's Approval.

3366 Soils and Foundations. (3-0) Properties of subsurface materials and the principles of subsurface construction are studied. Topics include soil classification and testing, soil mechanics and foundation systems, including site layout, excavation, caissons, piles, slurry wall, slab and spread footings. Prerequisite: Pre-Construction and TECH 2351 with a grade of "C" or higher, or Instructor's Approval.

3367 Mechanical, Electrical, and Plumbing Systems. (3-1) This course covers typical Mechanical, Electrical and Plumbing (MEPs) systems found in residential and commercial construction along with design and installation methods used to conserve both energy and water in new and remodeled structures. Prerequisites: CSM 2313, 2342 and 2360 or Instructor's Approval.

4313 Advanced Architectural Design. (2-2) This is an architectural CAD techniques and principles of commercial construction class including exterior and interior drawings and details, essentials of plans, elevations, sections and perspective aspects of architectural documents. Structural, mechanical, electrical, plumbing, ADA and green building issues are discussed. Design and/or construction documents will be produced through group participation projects. Prerequisite CSM 2313.

4360 Senior Construction Contract Administration. (3-3) Student teams solve technical problems related to real-world, construction project typically supplied by an industry sponsor using skills from previous coursework. Typical areas covered are business ethics, proposals, owner contracts, alternate project delivery methods, bid packages, guaranteed maximum price (GMP), site logistics, scheduling and team building. Prerequisite: Pre-Construction coursework or MATH 2471 and TECH 4313, TECH 4361, TECH 4364, TECH 4369 or Instructor's Approval. Recommended TECH 4390.

4361 Construction Estimating. (2-2) The fundamentals of construction estimating are covered including feasibility, conceptual, square feet, cubic feet, unit in place, preliminary, engineering, range and contractor's detail bid estimates. Plans and specifications are used along with contemporary estimating software to develop estimates commonly used in the construction industry. Prerequisite: Pre-Construction and CSM 3361 or Instructor's Approval.

4364 Construction Project Management and Scheduling. (3-1) Concepts of construction management are studied beginning with contract documents through the effective management of manpower, machines, material and money necessary to complete construction projects on time and within budget. Gantt Charts and PERT/CPM schedules are developed, using contemporary software. Prerequisite: Pre-Construction and CSM 4361 or Instructor's Approval.

4368 Environmentally Conscious Design and Construction. (3-1) This course covers environmentally sustainable practices used in building design and construction. THE LEED system will be used to guide the course, which covers aspects of sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality and the CAD design process. Prerequisite: Pre-Construction or ID 2329 and CSM 2313 or Instructor's Approval. (WI)

4369 Construction Contracts, Liability, and Ethics. (3-0) Legal aspects of design and construction contract documents are presented, including contract formation, interpretation, rights and duties and changes. Legal liabilities are explored in the context of professional ethics for design firms and constructors. Prerequisite: Pre-Construction and recommended: MGT 3303 and/or MGT 3360 or Instructor's Approval.

Courses in Technology (TECH)

1330 Assembly Processes. (2-2) Basic assembly process to include gas, arc, resistance, thermite, induction, and forge welding; weld-ability, weld metallurgy, weld symbology, and weld testing; brazing; soldering; mechanical fastening to include threaded fasteners, rivets, shrink and press fits, seams, staples, crimping, and structural adhesives. Principles of joint design and cost estimation. An overview of electronics assembly processes and automated assembly.

1363 Manufacturing Processes I. (2-3) The course will provide an overview of the manufacturing processes. Major emphasis is placed on machining theory, setup and tooling. Metal forming and fabrication procedures are introduced. Joining and assembly includes welding, mechanical fastening, adhesive bonding and surface finishing concepts. Laboratory demonstrations and tutorials involve machining, joining and forming techniques.

1393 Manufacturing Processes II. (2-3) The course involves the fundamentals of casting and molding processes. Emphasis is placed on casting terminology, molding sand, molding processes, pattern making, coremaking and quality control. Ferrous and non-ferrous alloy composition and casting geometry are explored. Plastic and composite forming concepts are included. Microelectronic manufacturing principles and processes are introduced. Prerequisite: TECH 1363.

2190 Industrial Internship. (0-40) This course is a supervised experiential learning course in various technical disciplines as appropriate to a student's degree program. This work integrated learning course helps the student link theory with practice. Repeatable for credit. Prerequisites: 45 hours completed with at least 12 having been completed at Texas State and a minimum major GPA of 2.25.

2310 Introduction to Computer-Aided Design (CAD) (3-3) Principles of 3D modeling are introduced in the preparation of drawings for manufacturing processes. Emphasis includes the parametric solid modeling of machine elements and geometric dimensioning and tolerancing. The laboratory component involves production of engineering drawings and simulations connecting this course to computer-aided engineering. Prerequisite: ENGR 1313 or Instructor's Approval.

2330 Fundamentals of Material Removal. (3-0) An overview of the micro and macro structure of materials is studied. Assessment of materials with regard to their chemical and mechanical properties and how these properties relate to machining is explored. Machining conditions with regard to feed, speed, surface finish, tooling requirements, horsepower capabilities, time, and cost analysis complete the class. Prerequisite: MATH 1315.

2344 Power Technology. (2-2) This class deals with understanding the basic laws of thermodynamics. It probes the issues of efficiency and examines energy-converting devices from the inputs, processes, outputs model. Internal combustion engines, electric motors, hydraulic systems, pneumatic systems, wind electric systems, solar energy systems and gearing systems. Fuel analysis, lubricants and friction all comprise essential topics. Prerequisite: MATH 1315 and PHYS 1315/1115 or 1410 or PHYS 1430.

2351 Statics and Strength of Materials. (3-0) Course covers principles of statics and strength of materials to include forces, equilibrium, friction, centroids, and stress/strain relationships, axial stress and deformation, thermal stress and deformation, stress concentrations, factor of safety, torsional stress, beam stresses and combined stress. Prerequisites: TECH 2342 or ENGR 2300 and PHYS 1315/1115 or 1410 or 1430 with grades of C or higher.

2370 (ENGR 2305) Electricity/Electronics Fundamentals. (2-2) Fundamentals of safety, Ohm's Law, series, parallel, and series-parallel circuits, meters, relays, and basic transistor circuits.

3322 Development of Technology. (3-0) The role of technology in the development of Western World culture is studied from a technical perspective. Social repercussions resulting from the introduction of foundational technical developments are reviewed. Examples of technical areas examined are agriculture, transportation, manufacturing, engineering, defense, and communications. Readings focus discussions and papers on specific topics and encourage synthesis level understanding. (WI)(MC)

3344 Applied Thermofluids. (3-0) Basic concepts, first and second laws of thermodynamics, thermodynamic properties, heat transfer by conduction, convection and radiation, fluid statics and fluid dynamics are studied. Prerequisites: TECH 2344 and PHYS 1430.

3345 Principles of Lean Systems. (3-0) The course provides an in-depth understanding of the lean principles as they apply to manufacturing and service organizations with emphasis on lean tools and concepts such as Value Stream Mapping, 5S, kaizen, waste, takt/cycle time, visual control, six-sigma, mistake proofing, single piece flow, cell design and pull systems. Prerequisite: TECH 3364.

3357 Facilities Planning and Design. (3-0) This project-based course provides students with a practical knowledge of designing efficient facility layout and material handling system. Systematic layout planning (SLP) based on a product and process information is studied in depth. Simulation tools are used for flow analysis. Prerequisities: TECH 2310.

3373 Communication Systems. (3-0) This course deals with basic principles of communication systems. Specific topics include analysis of signals and systems, modulation techniques (digital and analog), analysis of transmitters and receivers, networking, and wireless communication systems. Prerequisites: TECH 2370 or EE 2400.

3364 Quality Assurance. (3-0) This course covers the principles of quality management to include basic probability and statistics concepts, control charts for attributes and variables, sampling plans, quality audits and costs. The laboratory component of this class includes exercises that provide exposure to basic metrology and data collection.

3370 Electronics. (2-2) A study of the characteristics of basic electronic circuits and their component parts. Course content includes the use of electronic test equipment, inductance, capacitance, reactance, impedance, rectification, switching, amplification, and electronic circuit fabrication. Prerequisite: TECH 2370 or EE 2400.

4197 Special Problems. (1-0) The investigation of a special topic by developing the problem, researching the topic, and presenting the findings as they apply to industry/technology. This course will be applicable to all areas of technology, and must be done only with the approval of the cooperating faculty member and Department Chair. Repeatable for credit with different emphasis.

4330 Foundry & Heat Treatment. (3-3) The technical aspects of foundry and heat treatment of ferrous and non-ferrous metals are reviewed. Students gain proficiency with interpretation of binary phase diagrams, mathematical modeling of gate and runner systems, micro-structural analysis, process cost evaluation, sand testing, investment casting and other technical processes. Prerequisites: TECH 2310, ENGR 2300 and TECH 2351 or MFGE 2332 or Instructor's Approval. (WI)

4345 Principles of Lean Systems. (3-0) The course provides an in-depth understanding of the lean principles as they apply to manufacturing and service organizations. with emphasis on lean tools and concepts such as Value Stream Mapping, 5S, kaizen, waste, takt/cycle time, visual control, six-sigma, mistake proofing, single piece flow, cell design and pull systems. Prerequisites: TECH 3364.

4362 Manufacturing Process Engineering. (1-3) This course will provide students with fundamentals of manufacturing processes engineering. Major emphasis will be placed on make-buy analysis, tolerance analysis and dimensional control, tool design, process and material selection, manufacturability

analysis, and process planning. Prerequisites: TECH 1393 and TECH 2310.

4365 Machine Elements: Dynamics and Design. (3-0) Principles of the design of mechanical components; theories of failure; material selection; design of shafts, gears, cams, fasteners, springs and brakes; dynamics; balancing of machinery and vibration control are studied . Prerequisites: TECH 2310 and TECH 2351.

4367 Polymer Properties and Processing. (3-1) Structure, physical & mechanical properties, design considerations and processing methods for polymer-based materials are presented. Processing methods include: injection molding, blow molding, thermoforming, compression molding, extrusion, filament winding, lay-up methods, vacuum bag molding and poltrusion. Prerequisite: ENGR 2300.

4372 Electronic Devices and Circuits. (2-2) Transistor configurations, field effect transistors and circuits, voltage regulation, amplifier feedback principles, operational amplifiers and circuitry, and unijunction transistors and applications. Prerequisite: TECH 2370 or EE 2400.

4373 Control Systems and Instrumentation. (2-2) A study of control systems, electrical switching, electrical generation, motors, wiring, illumination, and temperature controls as they apply to industry. Electronic product development and manufacturing are studied through classroom and laboratory activities. Prerequisite: TECH 2370 or EE 2400.

4374 Digital Systems. (2-2) Solid state digital electronics from basic concepts to current industrial needs in terms of logic gates (all types), number systems counters (all types), registers (all types), sequential control circuits, and shift register generator. Prerequisite: TECH 2370 or PHYS 2425.

4380 Industrial Safety. (3-0) Introduction to the field of industrial safety with emphasis on compliance with Federal and State regulations. Prerequisite: Junior standing. (WI)

4383 Driver and Traffic Safety Education I. (3-0) Content, methods, and materials for instruction in the classroom phase of driver education in Texas. Topics include Texas traffic law; Texas Education Agency standards for high school driver education; driver behavior, attitude, and psychomotor skills; and safety in the highway transportation system.

4385 Driver and Traffic Safety Education II. (3-3) Content, methods and materials for instruction in the laboratory phase of driver education in Texas. Topics include in-car instruction, multi-car range, and simulation. During laboratory sessions participants will observe in-car instructors, peer teach in the car, and teach a high school student how to drive. TECH 4383 and 4385 will be taken simultaneously. Prerequisites: TECH 4383 and a good driving record.

4387 Motorcycle Safety and Rider Education. (3-3) Techniques and methods of teaching beginner rider education. Includes classroom techniques as well as laboratory experience in on-street and off-street riding. Not applicable to the BS in Technology program.

4390 Internship. (0-40) Supervised on-the-job professional learning experience in construction, manufacturing, electronics, and other technical areas. This course provides practical work experience in their particular field of interest. Repeatable for credit. Prerequisites: Consult internship coordinator. (WI)

4391 Manufacturing Processes II. (1-3) Involves a wide variety of advanced manufacturing techniques. Included are the following areas: differential indexing, electrical discharge machining, precision grinding, specialized thread cutting, high energy rate forming, tool grinding, tool behavior analysis, tool cost evaluation, and numerical control programming. An emphasis may be placed on certain processes mentioned above in order to meet the specific needs of various classes. Prerequisites: TECH 2330, 4362; MATH 1315.

4392 Micro and Nano Manufacturing. (3-0) This class will cover the basic principles and techniques involved in micro and nano manufacturing. Emphasis will be placed on the process descriptions, terminology, equipment requirements, and processes for micro and nanosystems. Basic physics and process chemistry will be combined with control schemes to arrive at overall systems descriptions. Prerequisites: CHEM 1141 and CHEM 1341 and PHYS 1325 or PHYS 1420 or PHYS 2425.

4393 Driver and Traffic Safety Education III. (3-3) Content, procedures, and administration of multi-phase driver education programs. Topics include scheduling, maintenance and operation of laboratory equipment, record keeping, lesson plan development, and driver education for the handicapped. Practicum in classroom and/or simulation instruction. Not applicable to the Bachelor of Science in Technology degree program. Prerequisite: TECH 4383, 4385, and TECH 4393 may be taken simultaneously.

4394 Microelectronics Manufacturing II. (3-0) This is an intermediate level course in integrated circuit processing. Topics covered include: atomic models for diffusion, oxidation and ion implantation; topics related to thin film processes such as chemical vapor deposition, physical vapor deposition; planarization by chemical-mechanical polishing and rapid thermal processing; and process integration for bipolar and MOS device fabrication. Students will design processes and model them using a simulation tool such as SUPREM.

4395 Automated Manufacturing Systems I. (2-2) This course primarily deals with automation in industrial systems. In particular, this course focuses on automation and control technologies in manufacturing systems at machine and device levels. Included in its structure are areas such as fundamentals of industrial automation, sensors and actuators, numerical control, robotics, and PLC. Prerequisites: TECH 1393 and TECH 2310 or TECH 4373.

4396 Automated Manufacturing Systems II. (3-3) This course primarily deals with automation in industrial systems. In particular, this course focuses on automation and control technologies at a system level. This course includes topics such as simulation of manufacturing systems, flexible manufacturing systems, automated quality control, automated identification, and automated material handling. Prerequisites: TECH 4395.

4397 Special Problems. (3-0) The investigation of a special topic by developing the problem, researching the topic, and presenting the findings as they apply to industry/technology. This course will be applicable to all areas of technology, and must be done only with the approval of the cooperating faculty member and Department Chair. Repeatable for credit with different emphasis.

4398 Senior Design. (2-2) This course deals with application of technical and non-technical skills and knowledge using a multidisciplinary team-based approach for solving real-world problems related to product and process development. The topics include systematic product development, development of business plans, project management, cost estimation, documentation and presentation, prototyping, fabrication and concurrent engineering. Prerequisites: TECH 4395 or TECH 4372 or EE 3400 or GEO 4313. (WI)

4399 Seminar in Technology. (3-0) The topics for this course will vary. The course will involve the identification of the topic, its nomenclature, its processes, tools, equipment or materials, and its application to technology. The topic may apply to either the certification program or technology program or to both. A final report summary or presentation will conclude each seminar. Repeatable for credit with different emphasis.

Department of Mathematics

Math/Computer Science Building 470
T: 512.245.2551 F: 512.245.3425
www.txstate.edu/math/welcome.html

Degree Programs Offered

Bachelor of Arts (BA), major in Mathematics
Bachelor of Science (BS), major in Applied Mathematics
Bachelor of Science (BS), major in Mathematics
Bachelor of Science (BS), major in Mathematics (Teacher Certification in Mathematics, Grades 7-12)

Minor Offered

Applied Mathematics
Mathematics

The study of mathematics is more than four thousand years old and comprises an enormous body of knowledge. Mathematics remains a very active area of research continually giving rise to new theories and questions. The knowledge accumulated and the questions being considered concern both mathematics itself and its many applications.

Mathematics is a fundamental skill required at some minimal level of all educated people, and required in depth in many professions. The teaching objective of our Department includes the development of reasoning and computations skills, and the preparation of students for careers requiring a significant mathematical background.

Centers for Excellence

The department houses two Centers for Excellence. Mathworks, a center for innovation in mathematics and math education, designs and hosts programs for students from kindergarten to high school, conducts research on math curriculum, and provides training for teacher education students as well as current teachers. Mathworks received the 2001 Star Award for Closing the Gaps from the Texas Higher Education Coordinating Board and the 2007 Siemens Founders Award.

The mission of the Center for Mathematics Readiness is to provide students with a fresh perspective, immersing them into the world of Mathematics through infrastructure planning, content and curriculum, technical support and evaluation. This will ensure that all students are afforded the opportunity to succeed, not just in college, but in life as well.

Majors

The department offers the Bachelor of Science with a major in Mathematics with or without teacher certification, the Bachelor of Science with a major in Applied Mathematics, and the Bachelor of Arts with a major in Mathematics. Any major consists of 20 required credit hours and 18 additional credit hours, which vary with the student's program. See the degree plans below.