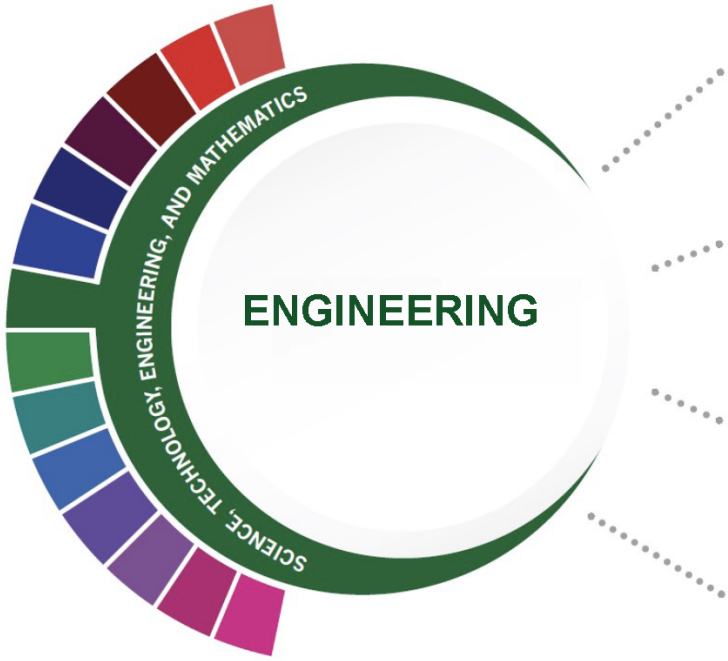

9th	Engineering Design and Presentation I
10th	Engineering Design and Problem Solving Applied Math for Technical Professionals
11th	Practicum in STEM 1st time
12th	Practicum in STEM 2nd time

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
Autodesk Certified Professional or User (ACU)-Inventor	Engineer, Professional	Electrical and Electronics Engineering	Electrical and Electronics Engineering	Electrical and Electronics Engineering
Certified SolidWorks Associate (CSWA)	Fluid Power Systems Designer	Drafting and Design Technology/ Technician, General	CAD/CADD Drafting and/or Design Technology/ Technician	Mechanical Engineering
Certified Engineering Technician-Audio Systems	Certified Biomedical Auditor	Engineering Technology	Bioengineering and Biomedical Engineering	Bioengineering and Biomedical Engineering
	Certified Cost Estimator/ Analyst		Construction Engineering Technology/ Technician	

Additional industry-based certification information is available on the TEA CTE website. For more information on postsecondary options for this program of study, visit TXCTE.org.

Occupations	Median Wage	Annual Openings	% Growth
Aerospace Engineers	$110,843	481	9%
Industrial Engineers	$97,074	1,263	10%
Mechanical Engineers	$91,107	1,535	11%
Chemical Engineers	$112,819	474	9%
Electrical Engineers	$98,405	1,137	10%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Participate in competitions like Skills USA	Engineering internship Job shadow a machinist

The Engineering program of study focuses on the design, development, and use of engines, machines, and structures. CTE learners will learn how to apply science, mathematical methods, and empirical evidence to the innovation, design, construction, operation, and maintenance of different manufacturing systems.

The Science, Technology, Engineering, and Mathematics (STEM) Career Cluster focuses on planning, managing, and providing, scientific research and professional and technical services, including laboratory and testing services, and research and development services.

Successful completion of the Engineering program of study will fulfill requirements of the Business and Industry or STEM endorsement if the math and science requirements are met. Revised - July 2020

Texas Education Agency

COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITES (PREQ) COREQUISITES (CREQ)	GRADE
Engineering Design & Presentation	13036500 - 1 credit	None	9
Engineering Design & Problem Solving	13037300 - 1 credit	PREQ Engineering Design & Presentation COREQ Applied Math for Technical Professionals	10-11
Applied Math for Technical Professionals	12701410 - 1 credit	PREQ Engineering Design & Presentation COREQ Engineering Design & Problem Solving PRE or COREQ Geometry	10-11
Practicum in STEM	13037405 - 3 credits - 1st time 13037415 - 3 credits - 1st time	PREQ Engineering Design & Problem Solving & Applied Math for Technical Professionals	11-12

Collin College
Electrical Engineering Technology Crosswalk

COURSE CODE	COLLEGE COURSE	HIGH SCHOOL COURSE	SEMESTER	YEAR (Recommended)
CETT 1407	Fundamentals of Electronics	Engineering Design & Presentation	Fall	9th
CETT 1425	Digital Fundamentals	Engineering Design & Presentation	Spring	9th
TECM 1343	Technical Algebra & Geometry	Applied Math for Technical Professionals	Fall/Spring	10th
ENTC 1171	Introduction to Engineering Technology Topics	Engineering Design & Problem Solving	Fall	10th
RBTC 1405	Robotic Fundamentals	Engineering Design & Problem Solving	Spring	10th
CETT 1445	Microprocessors	Practicum in STEM 1st time	Fall	11th
CETT 1409	AC/DC Circuits		Fall	11th
CETT 2471	Emerging Technologies in Engineering		Spring	11th
INTC 1307	Instrumentation Test Equipment		Spring	11th
DFTG 1372	Solidworks (Fusion 360)	Practicum in STEM 2nd time	Fall	12th
CETT 1457	Linear Integrated Circuits		Fall	12th
RBTC 2345	Robot Application		Spring	12th
EECT 2439	Communications Circuits		Spring	12th

Dual Credit Engineering Design & Presentation (CETT 1407) Fundamentals of Electronics
Recommended Grade Placement: 9
Credit(s): .5
Prerequisite: Dual Credit Admission Criteria
Applies concepts of electricity, electronics, and digital fundamentals; supports programs requiring a general knowledge of electronics. Lab required. 4 credit hours. (W)

Dual Credit Engineering Design & Presentation (CETT 1425) Digital Fundamentals
Recommended Grade Placement: 9
Credit(s): .5
Prerequisite: Dual Credit Admission Criteria
An entry level course in digital electronics to include numbering systems, logic gates, Boolean algebra, and combinational logic. Lab required. 4 credit hours. (W)

Dual Credit Applied Math for Technical Professionals (TECM 1343) Technical Algebra & Trigonometry
Recommended Grade Placement: 10
Credit(s): 1
Prerequisite: Dual Credit Admission Criteria
Algebraic and trigonometric applications used in technical/industrial settings. Lab required. 3 credit hours. (W)

Dual Credit Engineering Design & Problem Solving (ENTC 1171) Introduction to Engineering Technology Topics
Recommended Grade Placement: 10
Credit(s): 1
Prerequisite: Dual Credit Admission Criteria; others listed in course description
Fundamentals of DC circuits and AC circuits operation including Ohm's law, Kirchhoff's laws, networks, transformers, resonance, phasors, capacitive and inductive circuit analysis techniques. Lab required. Prerequisites: CETT 1307, ENTC 1171, and TECM 1343. 4 credit hours. (W)

Dual Credit Engineering Design & Problem Solving (RBTC 1405) Robotic Fundamentals
Recommended Grade Placement: 10
Credit(s): 1
Prerequisite: Dual Credit Admission Criteria; others listed in course description
An introduction to flexible automation. Topics include installation, repair, maintenance, and development of flexible robotic manufacturing systems. Lab required. 4 credit hours. (W)

Dual Credit Practicum in STEM (CETT 1445) Microprocessor
Recommended Grade Placement: 11
Credit(s): 1
Prerequisite: Dual Credit Admission Criteria; others listed in course description
An introductory course in microprocessor software and hardware: architecture, timing sequence, operation, and programming. Discussion of appropriate software diagnostic language and tools. Lab required. Prerequisites: CETT 1425 and CETT 1307, or consent of Associate Dean/Director. 4 credit hours. (W)

Dual Credit Practicum in STEM (CETT 1409) AC/DC Circuits

Recommended Grade Placement: 10
Credit(s): 1
Prerequisite: Dual Credit Admission Criteria; others listed in course description
Fundamentals of DC circuits and AC circuits operation including Ohm's law, Kirchhoff's laws, networks, transformers, resonance, phasors, capacitive and inductive circuit analysis techniques. Lab required. Prerequisites: CETT 1307, ENTC 1171, and TECM 1343. 4 credit hours. (W)

Dual Credit Practicum in STEM (CETT 2471) Emerging Technologies in Engineering

Recommended Grade Placement: 11
Credit(s): 1
Prerequisite: Dual Credit Admission Criteria; others listed in course description
Topics address identified emerging technology developments, skills, knowledge pertinent to the technology or occupation and relevant to the professional development of the student. Lab required. Prerequisites: CETT 1409 and CETT 1425, or consent of Associate Dean/Director. 4 credit hours. (W)

Dual Credit Practicum in STEM (INTC 1307) Instrumentation Test Equipment

Recommended Grade Placement: 11
Credit(s): 1
Prerequisite: Dual Credit Admission Criteria; others listed in course description
Theory and application of instrumentation test equipment. Emphasizes accuracy, limitations of instruments, and calibration techniques. Lab required. Prerequisite: CETT 1409 or consent of Associate Dean/Director. 3 credit hours. (W)

Dual Credit Practicum in STEM (DFTG 1372) SOLIDWORKS Essentials

Recommended Grade Placement: 12
Credit(s): 1
Prerequisite: Dual Credit Admission Criteria; others listed in course description
A study of mechanical drafting and design using SOLIDWORKS mechanical design automation software to build parametric models of parts and assemblies. The course teaches how to make drawings of those parts and assemblies through the use of dimensioning and tolerancing, sectioning techniques and orthographic projection. Lab required. 3 credit hours. (W)

Dual Credit Practicum in STEM (CETT 1457) Linear Integrated Circuits

Recommended Grade Placement: 12
Credit(s): 1
Prerequisite: Dual Credit Admission Criteria; others listed in course description
CETT 1457 Linear Integrated Circuits
A study of the characteristics, operations and testing of linear integrated circuits. Applications include instrumentation and active filtering. Lab required. Prerequisite: CETT 1409 or consent of Associate Dean/Director. 4 credit hours. (W)

Dual Credit Practicum in STEM (RBTC 2345) Robot Application, Set-up, and Testing

Recommended Grade Placement: 12
Credit(s): 1
Prerequisite: Dual Credit Admission Criteria; others listed in course description
A course that provides the student with laboratory experience in the installation, set-up, and testing of robotic cells. Topics include maintenance. Prerequisite: RBTC 1405. Lab required. 3 credit hours. (W)

Dual Credit Practicum in STEM (EECT 2439) Communication Circuits

Recommended Grade Placement: 12

Credit(s): 1

Prerequisite: Dual Credit Admission Criteria; others listed in course description

A study of communications systems with emphasis on amplitude modulation, frequency modulation, phase modulation, and digital pulse modulation. Discussion of several types of modulators, demodulators, receivers, transmitters, and transceivers. Lab required. Prerequisites: CETT 1425 and CETT 2471. 4 credit hours. (W)