

Course Descriptions - Fall 2021

Applied Construction Math I

TECM 1001

16 Sessions

48 Hours

This course is designed for students who have little math skills (grade school level), or who have not had a math course for several years. Upon completion, this course will provide an understanding of fundamental operations using whole numbers, fractions, decimals, and percentages. Basic math skills are strengthened through applications found in the construction industry. Students are introduced to logical problem solving.

Backflow Awareness (16 CEU hours)

PFPB 2000

2 Sessions

16 Hours

Student must have a current Backflow Prevention Assembly Testers License

This course offers Texas Commission of Environmental Quality (TCEQ) continuing education hours for those who have already received their BPAT license. The course consists of 16 hours of class and lab work, which will include all new and updated information from the industry and governmental bodies. The class is split with 4 hours in the lab and 12 hours in the classroom.

Note 1: Students must bring a copy of the 10th Edition USC Manual for Cross-Connection Control, as required by TCEQ. Books are available for purchase upon request. Contact CEF office for book cost and to request a copy PRIOR to the first day of class. 972.574.5200

Note 2: This course also meets TCEQ Backflow continuing education requirements for Irrigation/Landscape Inspector License.

Backflow Practical Skills Refresher (8 CEU hours)

PFPB 1000

1 Sessions

8 Hours

Student must have a current Backflow Prevention Assembly Testers License

This course offers Texas Commission of Environmental Quality (TCEQ) continuing education hours for those who have already received their BPAT license. The course consists of 8 hours of class and lab work, which will include all new and updated information from the industry and governmental bodies. The class is split with 7 hours in the lab and 1 hour in the classroom. Students will receive the newly revised 10th Edition of the USC Manual for Cross-Connection Control, as required by TCEQ.

Note 1: Students must bring a copy of the 10th Edition USC Manual for Cross-Connection Control, as required by TCEQ. Books are available for purchase upon request. Contact CEF office for book cost and to request a copy PRIOR to the first day of class. 972.574.5200

Note 2: This course also meets TCEQ Backflow continuing education requirements for Irrigation/Landscape Inspector License.

Backflow Prevention Assembly Tester License

PFPB 1047

5 Sessions

40 Hours

Prerequisite: 2-years experience in a water-related industry such as plumbing, sprinkler fitting, fire alarm, irrigation, etc

This course offers Texas Commission of Environmental Quality (TCEQ) certification in Backflow Prevention. Using our new state-of-the-art classrooms and labs with expert instruction that is required for certification and testing of backflow assemblies in the state of Texas. The course consists of 40 hour semester. Course topics include history of backflow prevention, testing and repair of assemblies, (RPZA; DCVA; PVB; and SRVB) cross connection control program with state and local ordinance information and all related subjects. Course is approved for 8-hour CEU in Customer Service Inspectors License, Irrigator License, Wastewater Operators License, Water Operators License and Water Treatment Specialist License.

Lunch is provided all 5 days.

Note: This course also meets TCEQ Backflow requirements for Irrigation/Landscape Inspector License.

Basic Commercial Blueprint Reading

DFTG 1023

10 Sessions

30 Hours

This course is designed for office, in the field personnel and is recommended for professional support staff for specialty and general contractors. Topics include: Evolution of the Construction Project- The Development of the Drawings & Specifications; Background Principles (Cracking the Code); Drawing Types Used in All Categories of Drawings; Reading Drawings for Information; Overview of Architectural & MEP Drawings and Specifications.

Commercial Field Engineering I

SRVY 1015

16 Sessions

56 Hours

Prerequisite: English or Spanish Math & Reading Test or Applied Construction Math Class & ESL Placement Test.

All testing must be completed no later than Friday August 20, 2021.

The course will introduce the students with a working knowledge of the materials, methods, and equipment including drawings used in construction buildings today. Using the Construction Materials, Methods, and Techniques as a guide, this course will cover Chapter 1- 42.

Introduction to Field Engineering; PART I-Chapter 1-2 Building Structures System; Construction, Standards; PART II-Chapter 4-6 Material, Building Site, Soils Foundations; PART III-Chapter 7-9 Concrete, Cast In Place Concrete, Pre-Cast; PART III-Chapter 10-14 Masonry Mortars, Masonry Construction; PART IV-Chapter 15-23 Metals, Steel Frame Construction, Wood Plastic and Composites; PART V-Chapter 24-27 Thermal Moisture Protection, Roofing Systems; PART V-Chapter 28-34 Glass, Doors, Windows, Interior Finishes, Floors; PART VI-VII-Chapter 35-38 Specialties, Equipment and Conveying Systems; PART VII-VIII-Chapter 39-42, Plumbing, Mechanical, Electrical; Division 01 to Division 05 Structural Drawings; Division 06 to Division 10 Structural and Architectural Drawings; and Division 11 to Division 16 Architectural Drawings.

Commercial Field Engineering II

SRVY 1001

18 Sessions

80 Hours

Prerequisite: Commercial Field Engineering I

This course covers the basic mathematical principles used for field surveying and measurement as applied to basic construction field engineering. Topics include: Dimensional; Conversions to Decimal Equivalents Unit Conversion, Algebra, Geometry-Perimeters, Area, Volumes; Trigonometry-Sine, Cosine & Tangents Right triangles; Law of Sine, Cosine Solving Oblique triangles; Instrument Setup Level Loops Records & Documentation Cut Fill Computation; Coordinate Geometry; Traverse Computations; Traverse Data Collection, Instrument set up; Horizontal Curves; and Vertical Curves.

Note: All students are required to attend one (1) additional 4 hour class.

Commercial Field Engineering VI

CNBT 2075

18 Sessions

80 Hours

Prerequisite: Commercial Field Engineering V

This course including lab covers an overview of the automated processes of office and field work commonly used by Field Engineers on construction sites today. This practical application of theory will focus on the handling of large amounts of design and as-built data using total station, data collector, and engineering & drafting computer software. Topics include: Start job in Carlson/ Drawing Set-up/Layer Set-up; Draw/Edit Commands: Ortho, Draw, Current Layer, Save, Offset, Osnap; Draw/Edit Commands: Erase, Move, Copy, Scale, Rotate, Mirror; Draw/Edit Commands: Trim, Extend, Fillet, Chamfer; REVIEW; Points Commands: Draw-Locate Points, List Points, Set Coordinate File; Clip Board, Insertion Point, CAD File from Architect, Plot/Print; Survey Commands: Enter Deed Description, Annotate Commands; Export Points, Data Collector Job Set-up, Import Points to Data Collector; 2D Stake-out, 3D Stake-out, Survey (Data Collection); Export Points from Data Collector, AS-Built Layer, Import Points; and Draw/Locate Points, Line Work, Text, Leaders.

Note: All students are required to attend one (1) additional 4 hour class.

Commercial HVAC Service I-A

HART 1007

18 Sessions

80 Hours

Prerequisite: English or Spanish Math & Reading test or Applied Construction Math class; ESL test or class.

The course topics are Basic Safety; Introduction to HVAC; Trade Mathematics; Basic Electricity; Fasteners, Hardware, and Wiring; Basic Cooper & Plastic Pipe Practices; and Soldering & Brazing.

Note 1: EPA Section 608 Universal Certification is highly recommended to graduate from this program.

Note 2: Graduation Requirement: Students enrolled in HVAC I-B will be required to take the EPA Section 608 Refrigerant Recovery Exams. This EPA Section 608 Refrigerant Recovery class is MANDATORY for all students enrolled in HVAC I-B, unless the student has already received the EPA Core and Type II Certification. Proof of EPA Certification is required.

Note 3: All students are required to attend one (1) additional class of 4 hour class

Commercial HVAC Service III-A

HART 2036

18 Sessions

80 Hours

Prerequisite: Commercial HVAC Service Level II-B

The course topics are Introduction to Hydronic Systems; Commercial Hydronic Systems; Customer Relations; Heat Pumps; Troubleshooting Heat Pumps; and Troubleshooting Cooling.

Note: All students are required to attend one (1) additional class of 4 hour class

Commercial HVAC Service IV-A

CBFM 2011

18 Sessions

80 Hours

Pre-requisite: Commercial HVAC III-B

Course topics are Construction Drawings & Specifications, Air Quality Equipment, Indoor Air Quality, Commercial Airside Systems, System Air Balancing, and Energy Conservation Equipment.

Note: All students are required to attend one (1) additional class of 4 hour class

Construction Site Leadership I

CNBT 1009

12 Sessions

48 Hours

Introduction of Fundamentals of Crew Leadership will teach the skills to be an effective leader, including the ability to communicate effectively; provide direction to your crew, and effectively plan and schedule the work of your crews.

Electrical I-A

ELPT 1021

18 Sessions

80 Hours

Pre-Requisite: English or Spanish Math Test or Applied Construction Math Class and English or Spanish Reading Test and ESL Placement Test if tests are taken in Spanish.

All TABE Testing must be completed no later than Friday August 20, 2021.

The course Topics are Occupational Overview: The Electrical Industry; Basic Safety; Safety for Electricians; Introduction to Hand Tools; Introduction to Power Tools; Hand Bending; Device Boxes; Introduction to Basic Rigging, Introduction to Construction Math; Introduction to Electrical Circuit; Electrical Test Equipment; Basic Communication Skills; and Basic Employability Skills.

Note: All Electrical students are required to attend one additional class of 4 hour class

Electrical II-A

HART 1001

18 Sessions

80 Hours

Pre-requisite: Electrical I-B

The course topics are Alternating Current; Motors: Theory & Application; Electrical Lighting; Conduit Bending; and Pull and Junction Boxes.

Note: All Electrical students are required to attend one additional class of 4 hour class

Electrical III-A

ELPT 1045

18 Sessions

80 Hours

Pre-requisite: Electrical II-B

The course topics are Load Calculations – Branch & Feeders Circuits; Conductor Selection and Calculation; Practical Applications of Lighting; Hazardous Locations; Overcurrent Protection; and Calculations Review.

Note: All Electrical students are required to attend one additional class of 4 hour class

Electrical IV-A

ELPT 1041

18 Sessions

80 Hours

Pre-requisite: Electrical III-B

This level is crucial for Journeyman Exam Preparation. Course topics are: Load Calculations - Feeders & Services, Health Care Facilities, Standby & Emergency Systems, Basic Electronic Theory, and Fire Alarm Systems.

Note: All Electrical students are required to attend one additional class of 4 hour class

Electrical Journeyman Prep

ELPT 2001

12 Sessions

48 Hours

Pre-requisite - All Required: (1) At least three (3) years experience in Electrical Trade. (2) Basic math skills with ability to solve simple algebraic equations.

This class will consist of an intensive NEC review of Services and Service Equipment; Wiring Methods and Installation; Cabinets, Panelboards, Switchboards, Boxes and Conduit Bodies; Conductors; Motors and Generators; Utilization Equipment and Devices; Special Occupancies and Uses; Ambient Temperature and Other Conductor Derating Factors; Low Voltage Systems NEC requirements; and Hazardous locations.

Note: Students must have a copy of the 2020 NEC edition.

Electrical Master Prep

ELPT 1040

13 Sessions

52 Hours

Pre-requisite - All Required: (1) At least three (3) years experience in Electrical Trade and preferably some classroom hours. (2) Basic math skills with ability to solve simple algebraic equations. (3) Journeyman's License

Recommended: Some classroom hours

This class will consist of an intensive NEC review of Services and Service Equipment; Wiring Methods and Installation; Conductors; Special Occupancies and Uses; Ambient Temperature Derating; electrical calculations of single family, multi-family and two family dwellings, electrical calculations of commercial structures, i.e. schools, offices, stores, banks, marinas, etc.

Note: Students must have a copy of the 2020 NEC edition.

English as a Second Language I

COMG 1000

16 Sessions

48 Hours

Pre-requisite: None required

This course prepares students to communicate orally in both public and work environments. Emphasis is placed on developing language functions, pronunciation, listening skills, and improving social and intercultural skills.

NOTE: Test-Out available for Level I at no extra charge.

Este curso prepara al alumno para comunicarse con confianza en situaciones sociales y en el trabajo. Se desarrollan las varias funciones del lenguaje, se mejora la pronunciación y comprensión auditiva y se practica la comunicación social y transcultural.

Aprobación por medio de examen disponible para Nivel I sin cargo extra.

English as a Second Language II

COMG 1001

16 Sessions

48 Hours

Pre-requisite: English as a Second Language I

Students are taught to communicate orally in public and work environments. Emphasis is placed on developing language functions, pronunciation, listening skills, improving social and intercultural communication skills. Students acquire reading skills, vocabulary development, critical thinking skills, and the use of resources.

Continuación de ESL I. Este curso prepara al alumno para comunicarse con confianza en situaciones sociales y en el trabajo. Se desarrollan las varias funciones del lenguaje, se mejora la pronunciación y comprensión auditiva y se practica la comunicación social y transcultural. Los cursos instruye a los estudiantes, desarrollo de vocabulario, pensar en forma crítica y el uso de los varios recursos disponibles en la institución.

EPA Refrigeration Recovery Certification Training & Exam

HART 1043

1 Sessions

8 Hours

This course includes training and testing for Core, Types I, II, and III, required by the United States Environmental Protection Agency (EPA).

Course topics include: Refrigerant Transition and Recovery Certification.

Lunch is included.

Test is available in English or Spanish. A Spanish supplement to the English student handbook is available, upon request.

Note 1: ATTENTION STUDENTS ENROLLED IN COMMERCIAL HVAC

SERVICE I-A will receive this training and the exam in Commercial HVAC Service I-B. Enrollment is not needed in this class.

Note 2: The instructor highly recommends that students pick up and study their EPA Section 608 book at least 2 weeks prior to the start of class. A book will not be issued until the class is paid. Early registration is encouraged.

Note 3: Students will need to bring their EPA Section 608 Book to the class. Students possessing an EPA Refrigerant Recovery card for one or more types, must present the card to the Instructor the day of class, otherwise the student will be required to take all four types.

Pipefitting I-A

PFPB 1008

18 Sessions

80 Hours

Pre-requisite: English Math Test or Applied Construction Math Class and English Reading Test

Course topics will include: Orientation to the Pipefitting Craft; Basic Safety; Ladders and Scaffolds; Introduction to Hand Tools; Pipefitting Hand Tools; Introduction to Power Tools; Pipefitting Power Tools; and Introduction to Basic Rigging.

Note: All students are required to attend one additional class of 4 hour class

Pipefitting II-A

WLDG 1035

18 Sessions

80 Hours

Pre-requisite: Pipefitting I-B

Course topics will include: Piping Systems; Drawings and Detail Sheets; Identifying and Installing Valves; Pipefitting Trade Math; and Threaded Pipe Fabrication.

Note: All students are required to attend one additional class of 4 hour class

Pipefitting III-A

PFPB 2041

18 Sessions

80 Hours

Pre-requisite: Pipefitting II-B

Course topics will include: Introduction to Basic Rigging; Rigging Practices; Standards and Specifications; Advanced Trade Math; Pipe Off Sets (PF Math Guide); and Motorized Equipment Two.

Note: All students are required to attend additional four hour classes.

Piping Isometric

PFPB 1006

16 Sessions

48 Hours

This class defines an Isometric Drawing, it incorporates commercial drawings, mechanical pipe and plumbing details and shows how to draw in an isometric format. Emphasis is stressed on how to utilize isometrics in construction day to day operations, including planning of material take offs, scheduling manpower, equipment and etc.

Plumbing I-A

PFPB 1013

18 Sessions

80 Hours

Pre-Requisite: English or Spanish Math Test or Applied Construction math Class and English or Spanish Reading Test and ESL Placement Test.

All Testing must be completed no later than Friday August 20, 2021.

The course topics are: Basic Safety; Plumbing Safety; Introduction to Plumbing Profession; Introduction to Hand Tools; Introduction to Power Tools; Tools of the Plumbing Trade; Introduction to Construction Math; Introduction to Plumbing Math; Copper Tube & Fittings and Cast Iron Pipe and Fittings.

Note: All students are required to attend two additional 4 hour classes.

Plumbing II-A

PFPB 1043

18 Sessions

80 Hours

Pre-requisite: Plumbing I-B

The course topics are: Plumbing Math Two; Reading Commercial Drawings; Structural Penetrations, Insulation, and Fire Stopping; Installing & Testing DWV Piping; Installing Roof, Floor & Area Drains; and Types of Valves.

Note: All students are required to attend two additional 4 hour classes.

Plumbing III-A

PFPB 1053

18 Sessions

80 Hours

Pre-requisite: Plumbing II-B

The course topics are: Applied Math; Sizing & Protecting the Water Supply System; Potable Water Supply Treatment; and Types of Venting.

Note: All students are required to attend two additional 4 hour classes.

Plumbing IV-A

PFPB 1055

18 Sessions

80 Hours

Pre-requisite: Plumbing III-B

The course topics are: Business Principles for Plumbers, Fundamentals of Crew Leadership, Water Pressure Booster & Recirculation System, and Indirect & Special Waste.

Note: All students are required to attend one additional 4 hour classes.

Plumbing Journeyman Exam Prep

PFPB 2005

1 Sessions

8 Hours

This seminar provides a review of subjects that are needed to pass the written exam for a plumber's journeyman license. It also includes hands-on experience for the preparation of the practical section of the exam. This seminar will also include a demonstration on our custom designed house, comparable to the 2-story house used in the State of Texas Plumbing Exam in Austin.

Lunch is included.

Sheet Metal I-A

MCHN 1001

18 Sessions

80 Hours

Pre-requisite: English Math and Reading Tests

The course topics are Sheet Metal Layout and Processes; Parallel Line Development; Installation of Ductwork; Installation of Air Distribution Accessories; Introduction to Construction Drawings; Basic Communication Skills; and Basic Employability Skills.

Note: All students are required to attend one additional 4 hour classes.

Sheet Metal III-A

MCHN 2071

18 Sessions

80 Hours

Pre-requisite: Sheet Metal II-B

The course topics are Sheet Metal Job Specifications; Commercial Air Systems; Principles of Airflow; Using Construction Drawings in Sheet Metal; Air Testing and Balancing; Blanket Insulation for Ducts; and Board Insulation For Ducts.

Note: All students are required to attend one additional 4 hour classes.

Spanish for Construction Sites

COMG 1011

8 Sessions

16 Hours

This is a comprehensive Spanish language program that provides immediate access to functional language skills for non-Spanish-speaking construction site personnel. This course will also cover the many issues involved with effectively supervising Spanish-speaking employees. The language component utilizes phonetic encoding to present the most important Spanish commands, questions, and phrases pertinent to the construction site.

STP 1-Leadership & Motivation

BMGT 1020

6 Sessions

24 Hours

This course will describe the value of effective supervision of workers and improve the construction supervisor's ability to lead and motivate others. Topics include: The dollar and sense of people in construction: the role of the construction supervisor; Helping people perform better; Motivating and leading others; Positive feedback; Training and orienting crew members; Teams and team building; Leadership skills in action.

STP 2 - Communication

BMGT 1022

6 Sessions

24 Hours

Pre-requisite: None Required

The course presents a body of knowledge and skills that today's construction supervisors need in order to be effective communicators on their job site. Topics include; Effective Communication; Learning to Listen; Carrying on Conversations; Persuasion, Negotiation, and Confrontation; Communicating with Your Crew; Putting it in Writing; Meetings that Work; Electronic Communication; and Improving Communication.

STP 3 - Planning & Scheduling

CNBT 1072

5 Sessions

20 Hours

Pre-requisite: None Required

This course will help construction supervisors understand ways in which planning and scheduling saves time and money, while increasing quality in the construction process. Topics include: Preparing the project plan; Communicating the plan; The critical path; Computer use in scheduling; Using the schedule on the jobsite; Updating the construction schedule; The schedule as documentation and Using planning and scheduling.

STP 4 - Contract Documents

CNBT 1073

5 Sessions

20 Hours

Pre-requisite: None Required

This course will provide information about contract documents and construction law to help supervisors recognize the roles and responsibilities of all contracted parties, to develop and the understanding of how contract documents can be helpful to solve problems and resolve conflicts, and to develop positive relationships between all parties in the construction process. Topics include: Introduction to contract documents and construction law; Creating a positive environment through partnering; Contractual relationships; Contract forms and documents; Managing general conditions; Good documentation practices Changes; Differing site conditions; Time impacts; and Negotiation of resolutions.

STP 5 Improving Productivity & Managing Project Cost

BMGT 1021

8 Sessions

30 Hours

Pre-requisite: None Required

This course covers understanding how project estimates are compiled, how to compare actual project costs with those estimated and how to control costs to meet the estimate. This course also details how productivity is measured, how the supervisor plays a major role in increasing jobsite productivity and how a small increase in productivity can have a significant impact on the time and cost of a project.

Topics include: Construction estimates; Who controls project costs; Reporting and analyzing actual costs; Planning for cost control; Cost control strategies; Labor cost variances; Working with project partners; Managing risk and loss potentials; Cost control strategies; Post-project evaluations; Benchmarking construction productivity; Improving productivity through pre-planning; New skills for effective supervision; Personnel management; Equipment management for productivity improvement; Jobsite productivity, planning and scheduling; Quantifying lost labor productivity; and Record keeping, control, changes, and defect analysis.

STP 6 Risk Management & Problem Solving

OSHT 1015

6 Sessions

24 Hours

Pre-requisite: None Required

This course will cover the roles and responsibilities of a construction supervisor in accident prevention and loss control. Topics include: Safety leadership, communication and expectations; Planning for site safety, Site safety management; Site security and protection; Multi-employer jobsite safety; Construction risk management; Safety and human resources; and Regulatory procedures, record keeping and documents.

Water Treatment Specialist (8 CEU hrs)

EPCT 1015

2 Sessions

16 Hours

This 16 hour course counts towards 8 Texas Commission of Environmental Quality (TCEQ) continuing educations hours for those who have already received their WTS license. The course consists of class and lab work, and includes all new and updated information from the industry and governmental bodies. The class is split with 4 hours in the lab and 12 hours in the classroom.

Lunch will be provided.

Note: Students must bring a copy of the 10th Edition USC Manual for Cross-Connection Control, as required by TCEQ. Books are available for purchase upon request. Contact the CEF office for book cost and to request a copy PRIOR to the first day of class.

Welding Construction I-A

WLDG 1023

18 Sessions

80 Hours

Pre-Requisite: English or Spanish Math Test or Applied Construction Math Class and English or Spanish Reading Test and ESL Placement Test.

All Testing must be completed no later than Friday August 20, 2021.

Course topics will include: Basic Safety; Introduction to Hand Tools; Introduction to Power Tools; Basic Communication Skills; Basic Employability Skills; Oxyfuel Cutting; SMAW- Equipment and Set Up; Welding Quality; Base Metal Preparation; SMAW-Beads and Fillet Welds; SMAW - Groove Welds with Backing; Plasma Arc Cutting and SMAW-Open Root Groove Welds- Plate.

All students are required to attend two additional class of 4 hour class

Students are required to enroll in both Welding Construction I-A and Welding Construction I-B

Welding Construction I-B

WLDG 1007

18 Sessions

80 Hours

Pre-requisite: Welding Construction I-A

Course topics will include: Basic Safety; Introduction to Construction Math; Introduction to Construction Drawings; Introduction to Basic Rigging; Introduction to Material Handling; Oxyfuel Cutting; Welding Safety; Joint Fit-Up and Alignment; SMAW- Electrodes; SMAW - Beads and Fillet Welds; and Air Carbon Arc Cutting and Gouging

All students are required to attend two additional class of 4 hour class

Students are required to enroll in both Welding Construction I-A and Welding Construction I-B.

Welding Construction III-A

WLDG 2013

18 Sessions

80 Hours

Pre-requisite: Welding Construction II-A & B

Course topics will include: SMAW-Open Root Pipe Welds; SMAW- Stainless Steel Plate & Pipe Groove Welds; Preheat and Postheating of Metals; GTAW- Plate and GTAW - Carbon Steel Pipe.

Students are required to enroll in both Welding Construction III-A and Welding Construction III-B.

All students are required to attend two additional class of 4 hour class

Welding Construction III-B

WLDG 2070

18 Sessions

80 Hours

Pre-requisite: Welding Construction II A & B

Course topics will include: SMAW- Open Root Pipe Welds; SMAW - Stainless Steel Plate and Pipe Groove Welds; Physical Characteristics & Mechanical Properties of Metals; GTAW - Equipment and Filler Metals; GTAW- Plate; and GTAW- Carbon Steel Pipe.

Students are required to enroll in both Welding Construction III-A and Welding Construction III-B.

All students are required to attend two additional class of 4 hour class