

# CONSTRUCTION TECHNOLOGY (CSTR)

## **CSTR 005 F Construction Technology Lab 0.5-2 Units**

**Corequisite(s):** CSTR 006 F or CSTR 007 F or CSTR 014 F or CSTR 015 F or CSTR 016 F or CSTR 020 F or CSTR 022 F or CSTR 028 F or CSTR 030 F or CSTR 031 F or CSTR 032 F or CSTR 033 F or CSTR 034 F or CSTR 035 F or CSTR 038 F or CSTR 040 F or CSTR 041 F or CSTR 042 F or CSTR 050 F or CSTR 060 F or CSTR 065 F or CSTR 100 F or CSTR 102 F or CSTR 104 F or CSTR 108 F or CSTR 110 F or CSTR 112 F or CSTR 116 F, with a grade of C or better.

Open Entry/Open Exit. 27-108 hours lab per term. This course offers students the opportunity to further develop their skills at hand and power tool operations, and to devote more time to construction projects. One-half unit credit will be given for each twenty-seven hours of lab participation. (Degree Credit)

## **CSTR 006 F Residential Plumbing and Mechanical Systems 3 Units**

54 hours lecture per term. This course covers the fundamentals of residential plumbing, heating, ventilation and air conditioning (HVAC). (Degree Credit)

## **CSTR 007 F Residential Electrical Systems 2 Units**

27 hours lecture and 27 hours lab per term. This course is an introduction to load center sizing, wiring circuits and grounding systems used in residential construction. Lab exercises will cover the wiring of lighting and power circuits, dedicated circuits, grounding and troubleshooting. (Degree Credit)

## **CSTR 014 F Contractors License Law 3 Units**

54 hours lecture per term. This course covers the problems in the legal and practical aspects of contracting: Contractors' License Law, the Mechanic's Lien Law, labor code, Worker's Compensation, and Insurance. Business management for both the private and public sector will also be covered. This course will prepare the student to pass the Law and Business Exam required for a Contractor's License in the State of California. (Degree Credit)

## **CSTR 015 F Construction Management 3 Units**

54 hours lecture per term. This course covers the organization and problems associated with managing a building construction business. Topics will include sales, bidding, contracts, purchasing, scheduling, safety, and community relations. (Degree Credit)

## **CSTR 016 F Business Administration for the Construction Industry 3 Units**

54 hours lecture per term. This course provides the student with instruction in the practical aspects of business administration concepts and practices within the construction industry. The course surveys successful operating techniques, business structure, business plans, ownership, accounting, marketing, finance, taxation and business regulations. (Degree Credit)

## **CSTR 020 F Remodeling and Additions Construction I 4 Units**

**Prerequisite(s):** CSTR 100 F with a grade of C or better.

36 hours lecture and 108 hours lab per term. This course is an introduction to the fundamentals of residential room additions and remodeling construction with an emphasis on print reading, starting the job, tools, materials, scheduling, estimating, job progress and people relations. Instructions on tie-ins, foundations, plumbing, framing, roofing, electrical and mechanical areas will also be covered. (Degree Credit)

## **CSTR 022 F Remodeling and Additions Construction II 4 Units**

**Prerequisite(s):** CSTR 102 F and CSTR 102 F, with a grade of C or better  
36 hours lecture and 108 hours lab per term. This course will provide advanced experiences in finish work in remodeling and additions to include patching and finish carpentry, electrical, plumbing, and heating. (Degree Credit)

## **CSTR 028 F Introduction to Alternative Energy 3 Units**

54 hours lecture per term. This course provides an overview of the world energy situation and a study into alternate energy sources. Solar water heating, solar space heating and cooling, photovoltaics, geothermal, wind generators, nuclear, transportation energy types and others will be studied. (Degree Credit)

## **CSTR 030 F Construction Plans Reading (formerly Construction Blueprint Reading) 3 Units**

54 hours lecture per term. This course provides an interpretation of architectural working drawings as they relate to residential and light commercial construction. The meaning of various lines, symbols, and conventions as well as construction documents will be covered. Students entering this program may enter a variety of construction related fields such as Carpentry, Masonry, or Construction Inspection. (Degree Credit)

## **CSTR 031 F International Building Code 3 Units**

54 hours lecture per term. This course covers topics from the most recently-published International Building Code. This course is designed to give the student a view of the origins of the codes, why we need them, who enforces them, and generally how they work. Students will study the building codes as they pertain to commercial and industrial construction. Field trips may be required outside of regularly-scheduled class time. (Degree Credit)

## **CSTR 032 F Uniform Plumbing Code 3 Units**

54 hours lecture per term. This course covers topics from the most recent Uniform Plumbing Code as published by the International Association of Plumbing and Mechanical Officials. (Degree Credit)

## **CSTR 033 F Commercial Construction Blueprint Reading 3 Units**

**Advisory:** Knowledge and understanding of residential blueprints.

54 hours lecture per term. This course emphasizes the interpretation of commercial architectural drawings as they relate to commercial construction industry. Contract documents, specifications, site work, structural steel construction, reinforced concrete, mechanical systems, and electrical systems will be covered. (Degree Credit)

## **CSTR 034 F National Electrical Code 3 Units**

54 hours lecture per term. This course covers topics of instruction which will follow the content of the most recent National Electrical Code as published by the National Fire Protection Association. (Degree Credit)

## **CSTR 035 F California Accessibility and Energy Codes 3 Units**

54 hours lecture per term. This course offers an interpretation and application of the California Code of Regulations (Title 24) as it pertains to various types of structures within the building industry. Special emphasis will be placed on California Energy Regulations and modifications for the disabled for accessibility requirements. Field trips may be required during class time. (Degree Credit)

## **CSTR 038 F Uniform Mechanical Code 3 Units**

54 hours lecture per term. This course covers topics of instruction which will follow the content of the most recent Uniform Mechanical Code as published by the International Conference of Building Officials. This course will study the codes related to commercial and industrial construction. (Degree Credit)

**CSTR 039 F Commercial Mechanical Code****3 Units**

54 hours lecture per term. This course has been designed for the individual who deals with the design of heating, cooling, ventilation and refrigeration in larger, more complex type buildings. Training received in this course will make the individual aware of the areas where the Building and Mechanical Codes overlap. (Degree Credit)

**CSTR 040 F Building Design - Hazard Materials****3 Units**

54 hours lecture per term. This course is designed to introduce the student to the provisions of the Building and Fire Codes affecting the storage, handling and use of hazardous materials. Emphasis will be placed on the requirements for the safety aspects of the codes and recognized standards for solutions. Instruction will focus on problem solving with compliance to the building standards. (Degree Credit)

**CSTR 041 F International Residential Code****3 Units**

54 hours lecture per term. This course covers topics from the most recently-published adoption of the International Residential Code. Students will study the International Residential Code (IRC) as a comprehensive, stand-alone residential code that creates minimum regulations for one- and two-family dwellings of three stories or less. This course brings together all buildings, plumbing, mechanical, fuel gas, energy and electrical provisions for one- and two-family residences. Students will study the residential codes as they pertain to residential construction. (Degree Credit)

**CSTR 042 F Residential Steel Frame Construction****4 Units**

54 hours lecture and 54 hours lab per term. This is a comprehensive course that covers the fundamentals of utilizing light frame steel for residential and light commercial. Course emphasizes the safe use of hand and power tools, construction terminology, plan interpretation, and construction practices for foundation systems, and wall, ceiling, and roof framing. Field trips may be required outside of regularly-scheduled class time. (Degree Credit)

**CSTR 050 F Computer Design Software for the Contractor****2 Units**

27 hours lecture and 45 hours lab per term. This course provides the student with instruction in the concepts and practices associated with using computer architectural design software to prepare students in the preparation of designs, blueprints, and material lists for the construction industry. Students will create programs that demonstrate features and functions using the architectural design software. (Degree Credit)

**CSTR 060 F Computer Estimating in Construction****3 Units**

36 hours lecture and 54 hours lab per term. This course provides the student with instruction in the concepts and practices with using computer estimating software for construction estimator positions within the construction industry. Students will process programs that demonstrate features and functions of the estimating software. Knowledge and understanding of blueprint reading is beneficial. (Degree Credit)

**CSTR 065 F Construction Project Scheduling****3 Units**

36 hours lecture and 54 hours lab per term. This course provides the student with instruction in the concepts and practices associated with using project scheduling software currently used in the construction industry. Students will learn the practical application practices and demonstrate their ability to use the software and concepts associated with construction scheduling. Field trips may be required outside of regularly-scheduled class time. (Degree Credit)

**CSTR 100 F Residential Construction****4 Units**

54 hours lecture and 54 hours lab per term. This course emphasizes the safe use of hand and power tools, construction terminology, plan interpretation and construction practices in: ground work, foundation systems, wall framing, ceiling framing, roof framing, and roofing materials. Field trips may be required outside of regularly-scheduled class time. (CSU) (Degree Credit)

**CSTR 102 F Residential Finish Carpentry****4 Units**

54 hours lecture and 54 hours lab per term. This course covers units of instruction to include tool usage and safety, terminology, drywall installation and finishing, setting of door frames and hanging doors, installation of casing and base, finish hardware, paneling, railings, stairs, and trim/detail. Field trips may be required outside of regularly-scheduled class time. (CSU) (Degree Credit)

**CSTR 104 F Concrete and Masonry****3 Units**

45 hours lecture and 27 hours lab per term. This is a basic concrete construction course which includes use of concrete and masonry tools and forming, placing, finishing, and testing concrete. Field trips may be required outside of regularly-scheduled class time. (CSU) (Degree Credit)

**CSTR 108 F Surveying for Builders****2 Units**

18 hours lecture and 54 hours lab per term. This is a course for builders and contractors, both general and sub. It includes surveying instruments, surveying practice for construction limited to plot layouts, simple topography as on hillside lots, establishing grade points, using bench marks and other references. Basic applied trigonometry will be reviewed. (CSU) (Degree Credit)

**CSTR 110 F Residential Estimating****3 Units**

54 hours lecture per term. This course stresses residential blueprint reading, estimating, and material listing. Includes site preparation, foundations, framing, exterior finish, interior finish, roofing, hardware, and various specialty trade subcontracts. (CSU) (Degree Credit)

**CSTR 112 F Construction Materials, Specifications and Purchasing****2 Units**

36 hours lecture per term. This course covers the study of building materials as used in modern building construction and how they are represented in working drawings and specifications. (CSU) (Degree Credit)

**CSTR 116 F Residential Construction Practice I****4 Units**

**Prerequisite(s):** CSTR 100 F with a grade of C or better.

36 hours lecture and 108 hours lab per term. This course provides actual practice in the construction of a house project. Course emphasizes the correct and safe use of tools, rough framing problems, rough electrical, rough plumbing, mechanical systems, roofing, flashing, and exterior finish. (CSU) (Degree Credit)

**CSTR 118 F Residential Construction Practice II****4 Units**

**Prerequisite(s):** CSTR 102 F and CSTR 116 F, with a grade of C or better

36 hours lecture and 108 hours lab per term. This course provides actual practice in the finish work of the house project. Course work includes insulating, drywalling, door installation, finish hardware, finish plumbing, finish electrical, finish trim, painting, and any finishing processes that are deemed necessary to complete a house project. (CSU) (Degree Credit)