

CONSTRUCTION TECHNOLOGY (CNST)

CNST A100 1.5 Units (27 lecture hours)

Principles of Construction

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

An introductory course to construction covering, hand and power tools, building code development and applications, blueprints, license and contract law, jobsite safety and construction trades. Graded or Pass/No Pass option.

CNST A108 1 Unit (20 lecture hours; 10 lab hours)

Solar Panels for Small Projects

Grading Mode: Standard Letter

Transfer Credit: CSU.

Solar Panels for Small Projects is a 5 week course that introduces solar energy basics for small, off-grid photo voltaic installations. The course will cover solar energy fundamentals, electricity and safety basics, PV modules, system components, and system sizing. Students will plan out their own project or a small sample project. A small kit system will be available for hands-on demonstrations. No prior experience needed. Same as ARCH A108. Students completing CNST A108 may not receive credit for ARCH A108.

CNST A112 3 Units (27 lecture hours; 81 lab hours)

Stair Framing

Advisory: CNST A180 or CNST A240.

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

Topics of instruction include stair design, building codes, calculations, layout and construction. Practical instruction is given in the use of tools and materials through construction laboratory work. Graded or Pass/No Pass option.

CNST A114 4 Units (54 lecture hours; 54 lab hours)

Cabinet Making

Grading Mode: Standard Letter

Transfer Credit: CSU.

Introduction to wood as a building material. Introduction to basic wood and machine tools to bring forth the structural and visual potential of the material. The basic skill set includes two-dimensional design and drawing concept development, furniture history, and studio practices. Two items are p.m. selected by the staff as a platform for skill mastery demonstration.

CNST A116 4 Units (54 lecture hours; 54 lab hours)

Furniture Making and Design

Grading Mode: Standard Letter

Transfer Credit: CSU.

The student will design, construct, and manufacture furniture and related products. Same as ART A116. Students completing CNST A116 may not receive credit for ART A116.

CNST A125 5 Units (54 lecture hours; 108 lab hours)

Additions and Remodeling

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

An introductory course to the fundamentals of residential remodeling and additions. Topics of instruction include: planning and design, blueprint reading, permit process, and building codes. Practical instruction is given in the use of tools and materials through hands on laboratory work. Graded or Pass/No Pass option.

CNST A150 4 Units (54 lecture hours; 54 lab hours)

Electronics for Electricians

Grading Mode: Standard Letter

Transfer Credit: CSU.

Introduction to basic DC and AC circuits and electronic devices. Covers history of electronics, basic electricity, math, circuit theory, circuit components, digital electronics, schematics, test equipment. Labs will cover practical applications of all covered topics.

CNST A154 2 Units (18 lecture hours; 54 lab hours)

Drywall & Taping

Grading Mode: Standard Letter

Transfer Credit: CSU.

The study of various aspects of interior drywall, including layout and installation of drywall, cornerbead and bullnose trim. Students will learn how to estimate drywall projects. They will tape the interior of a house using hand tools. Students will be introduced to professional tools such as bazooka™s, 7 & 12 inch boxes, corner angles and corner finishers, mud runners and hand tools, texture application using a 10 gallon texture sprayer and smaller hoppers. Students will apply several different textures such as knockdown, orange peel, splatter and roller finish. Patch and drywall repair to match existing finishes.

CNST A155 2 Units (18 lecture hours; 54 lab hours)

Intro to Home Automation

Advisory: CNST A275.

Grading Mode: Standard Letter

Transfer Credit: CSU.

Wiring for interior low voltage systems, including layout and construction methods, code requirements, both sizing and installation standards, emphasis on material conservation practices and compliance with the National Electrical Code.

CNST A156 2 Units (36 lecture hours)

National Electrical Code

Grading Mode: Standard Letter

Transfer Credit: CSU.

This course is designed to provide those currently working in the electrical field with training that will keep them current with NEC standards that are updated every three years. Hours earned in this course may be applied toward the mandatory 32 hours of training required for license renewal.

CNST A157 **4 Units (36 lecture hours; 72 lab hours)**
Photovoltaic System Installation
Grading Mode: Standard Letter
Transfer Credit: CSU

Presents principles of Photovoltaic Systems and incorporates hands on activities for all topics. Solar Energy fundamentals and applications, electricity and safety basics, PV modules, system components, system sizing, electrical design, mechanical design and performance analysis and troubleshooting.

CNST A158 **4 Units (45 lecture hours; 51 lab hours)**
Photovoltaic System Installation 2
Prerequisite(s): CNST A157.

Grading Mode: Standard Letter
Transfer Credit: CSU

Presents principles of Photovoltaic Systems and incorporates hands on activities for all topics. Solar Energy fundamentals and applications, electricity and safety basics, PV modules, system components, system sizing, electrical design, mechanical design and performance analysis and troubleshooting.

CNST A161 **4 Units (36 lecture hours; 72 lab hours)**
Solar Water and Pool Heating Installation
Grading Mode: Standard Letter
Transfer Credit: CSU.

Technologies for Solar Water Heating and Solar Swimming Pool Heating for residential, commercial and agricultural applications. Solar concepts, system types and system components. Solar collector mounting, component installation, checkout and start-up procedures. Pool systems components, installation, operation, and economics.

CNST A165 **3 Units (54 lecture hours)**
Construction Safety/CAL OSHA
Grading Mode: Standard Letter
Transfer Credit: CSU.

Regulations related to general construction safety. Meets the requirements and follows the guidelines for 30-hour OSHA Construction Outreach Training. U.S. Department of Labor cards will be issued upon successful completion of this course.

CNST A170 **3 Units (54 lecture hours)**
Introduction to Construction
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

Fundamentals of the construction industry; terminology and procedures; an overview of trades, skills, and processes. Graded or Pass/No Pass option.

CNST A180 **5 Units (54 lecture hours; 108 lab hours)**
Building Construction 1
Grading Mode: Standard Letter
Transfer Credit: CSU.

Technical and practical experience to complete floor and wall framing of a building including wall layout, wall construction, ceiling joists and an introduction to roof framing. Estimating of materials and basic building layout are also covered.

CNST A185 **5 Units (54 lecture hours; 108 lab hours)**
Building Construction 2
Advisory: CNST A180 or entry level residential construction experience.

Grading Mode: Standard Letter
Transfer Credit: CSU.

The study of roof design and cutting. The use of the framing square in roof layout. Pre-fabrication techniques in housing with field research assignments. Frame estimating for the building trades and the application of various roofing materials are also covered.

CNST A189 **1.5 Units (27 lecture hours)**
Blueprint Reading
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

Develop blueprint reading skills in all aspects of residential construction to acquire realistic understanding of prints and sketches as a means of communication in construction. Graded or Pass/No Pass option.

CNST A190 **4 Units (72 lecture hours)**
Blueprint Reading and Drafting
Grading Mode: Standard Letter
Transfer Credit: CSU.

Develop blueprint reading and drafting skills in all aspects of residential construction to acquire realistic understanding of prints and sketches as a means of communication in construction.

CNST A194 **1.5 Units (27 lecture hours)**
Introduction to Building Codes
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

An introductory course in Building Codes. Covers building code development from model codes to state code adoptions. Topics include residential building, plumbing, mechanical and green codes. Graded or Pass/No Pass option.

CNST A195 **3 Units (54 lecture hours)**
Residential Code
Grading Mode: Standard Letter
Transfer Credit: CSU.

A complete analysis of the Residential Code and city and county related building codes. Special ordinances and land usage are also covered.

CNST A196 Green Building Codes Grading Mode: Standard Letter, Pass/No Pass Transfer Credit: CSU <p>A complete analysis of the California Green Building Code. Special local Green Building ordinances are also covered along with a comparison of the International Green Building Code. Same as ARCH A196; students completing CNST A196 may not receive credit for ARCH A196. Graded or Pass/No Pass option.</p>	1.5 Units (27 lecture hours)	CNST A210 Concrete Construction Grading Mode: Standard Letter Transfer Credit: CSU. <p>Concrete flatwork and foundations, hands-on surveying, forming and finishing concrete; poured-in-place reinforced concrete, concrete stairs; estimating concrete.</p>	5 Units (54 lecture hours; 108 lab hours)
CNST A197 California Energy Code Grading Mode: Standard Letter, Pass/No Pass Transfer Credit: CSU <p>A complete analysis of the California Energy Code. Special local Energy Code ordinances are also covered along with a comparison of the International Energy Code. Explanation of the State's energy and compliance forms. Same as ARCH A197; students completing CNST A197 may not receive credit for ARCH A197. Graded or Pass/No Pass option.</p>	1.5 Units (27 lecture hours)	CNST A211 Decorative Concrete Grading Mode: Standard Letter, Pass/No Pass Transfer Credit: CSU. <p>An introductory course in decorative concrete. Topics covered include: stamped concrete, decorative borders, staining, stencils, engraving, polishing, and overlays. Graded or Pass/No Pass option.</p>	3 Units (36 lecture hours; 54 lab hours)
CNST A198 Energy Audit Grading Mode: Standard Letter, Pass/No Pass Transfer Credit: CSU. <p>This course introduces the student to energy conservation methods for residential HVAC systems. It covers energy auditing procedures used to analyze the performance of residential buildings and the relationship to HVAC system design, including installation techniques, system performance, and potential energy efficiency gains. It will focus on developing the student's knowledge and skills to better understand the concept of whole building performance, and will demonstrate current technologies utilized to measure and verify system performance of HVAC equipment for the purpose of meeting local, state, and federal requirements for improved energy efficiency. The use of specialized tools, instruments and diagnostic procedures for system performance testing of space conditioning equipment is covered. Graded or Pass/No Pass option.</p>	3 Units (45 lecture hours; 27 lab hours)	CNST A220 Construction Estimating Grading Mode: Standard Letter Transfer Credit: CSU. <p>Construction estimating including bid preparation, material quantity take-off and analysis, subcontractor bids, bidding practices and final bid form compilation and submittal.</p>	3 Units (54 lecture hours)
CNST A199 Current Topics in Construction Technology Grading Mode: Standard Letter, Pass/No Pass Transfer Credit: CSU <p>Current issues in the field of construction technology, rotating through a variety of topics, such as residential/commercial/industrial electrical wiring, structured wiring, and general carpentry. This course may be taken four times. Graded or Pass/No Pass option.</p>	1-4 Units (9-72 lecture hours; 0-54 lab hours)	CNST A225 Land and Building Development Grading Mode: Standard Letter Transfer Credit: CSU. <p>A general survey of land development principles and procedures used prior to the actual construction of structures. Site analysis and planning, regulatory controls, obtaining entitlements, grading, road and street designs, utility systems, principles of real property, and project financing will be covered. Same as ARCH A225. Students completing CNST A225 may not receive credit for ARCH A225.</p>	3 Units (54 lecture hours)
CNST A209 Concrete Flatwork Grading Mode: Standard Letter, Pass/No Pass Transfer Credit: CSU. <p>Concrete flatwork, hands on forming, placement and a variety of concrete finishes. Graded or Pass/No Pass option.</p>	2.5 Units (27 lecture hours; 54 lab hours)	CNST A230 Construction Inspection Grading Mode: Standard Letter Transfer Credit: CSU. <p>Inspection procedures and techniques of testing. A study of the various building code requirements in the International Residential Code, and Title 24 of the California State Code. Plans, specifications, earthwork, grading foundations, concrete and framing are covered.</p>	3 Units (54 lecture hours)
		CNST A240 Specialty Trades Grading Mode: Standard Letter Transfer Credit: CSU. <p>This introductory course covers interior and exterior building finishes and stairs, including layout fabrication and installation of stairs; an introduction to framing, pre hung door and window installation; drywall, and stucco plastering. Building codes are included.</p>	5 Units (54 lecture hours; 108 lab hours)

CNST A241 **5 Units (54 lecture hours; 108 lab hours)**
Finish Carpentry
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

This course covers interior and exterior building finishes, including door materials, construction, hardware and installation: interior and exterior millwork; molding, cabinetry and exterior siding. Graded or Pass/No Pass option.

CNST A250 **3 Units (54 lecture hours)**
Construction Supervision and Project Management
Grading Mode: Standard Letter
Transfer Credit: CSU.

The combination of designing, estimating, contracting, financing and building must be understood and practiced. Leadership in this field means being responsible for many people, their work and their safety.

CNST A252 **1.5 Units (27 lecture hours)**
Business Law for Contractors
Grading Mode: Standard Letter
Transfer Credit: CSU.

Legal aspects of the formation, operation, regulatory requirements, financing, and contracts for successfully operating a construction contracting business in California.

CNST A260 **5 Units (54 lecture hours; 108 lab hours)**
Masonry Construction
Grading Mode: Standard Letter
Transfer Credit: CSU.

Covers masonry materials, construction and blueprint reading with estimating, construction masonry block walls, paving, veneering, brick and stone pilasters, brick walls and planter boxes, stucco over masonry.

CNST A261 **5 Units (54 lecture hours; 108 lab hours)**
Masonry Construction II
Advisory: CNST A260.

Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

An advanced course in masonry. Covers flatwork with brick, stone and pavers, masonry stairs, arches, and advanced masonry veneer projects. Graded or Pass/No Pass option.

CNST A265 **4 Units (54 lecture hours; 54 lab hours)**
Plumbing 1
Grading Mode: Standard Letter
Transfer Credit: CSU.

A course designed to provide students with entry-level instruction involving the theory and skills of residential plumbing systems. Knowledge of basic principles, functions and design, as well as the physical ability to install and test the rough-in plumbing in a single family dwelling.

CNST A266 **4 Units (54 lecture hours; 54 lab hours)**
Plumbing 2
Grading Mode: Standard Letter
Transfer Credit: CSU.

A course designed to provide students with entry-level instruction involving the theory and skills of residential plumbing systems. Topics include basic principles, function, and design, as well as the installation of finish plumbing, repair and service of plumbing systems, and the installation of solar, spa, and sprinkler systems in a single family dwelling.

CNST A270 **1.5 Units (27 lecture hours)**
Contractor's License Law
Grading Mode: Standard Letter
Transfer Credit: CSU.

Preparation for the California State Contractor Examination in any classification. Includes state license law, civil code, civil procedure, labor law, contract law, and asbestos regulations.

CNST A275 **5 Units (54 lecture hours; 108 lab hours)**
Residential Electrical Wiring
Grading Mode: Standard Letter
Transfer Credit: CSU.

Residential electrical construction, wiring principles and practices, study and application of NEC code to comply with building requirements.

CNST A285 **2.5 Units (27 lecture hours; 54 lab hours)**
Light Steel Frame Construction
Grading Mode: Standard Letter
Transfer Credit: CSU.

An introductory hands-on course that covers the fundamentals of utilizing light frame steel for residential framing in place of wood. Raised floor construction, wall framing and trussed roof fabrication and installation including applicable building codes, blueprint reading, estimating, and inspections are covered.