

Newport-Mesa Unified School District
Office of Secondary Curriculum and Instruction
High School Course of Study

Course Title	<i>Construction Technology IAB Re-Write</i>	Course Code	<i>IT368-369</i>
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Transcript Title:	Constr Tech I		Grades Levels:	9-12	Board Adoption Date:	
Content Area:	CTE – Construction		GPA Scale:	4.00	Date Course Submitted:	3/29/18
Credential Required:	CTE	Graduation Subject Areas:		Applied Skill/Electives		
UC/CSU “A-G” Area Approvals:		No	School Site/person that wrote and submitted the course:			Mike Rafferty
Recommend Skills:						
Next course(s):	Construction Technology II					

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DATE: July 2017

INDUSTRY SECTOR: Building and Construction Trades

PATHWAY: Residential and Commercial Construction (123)

CBEDS TITLE: Introduction to Building and Construction Trades

CBEDS Code: 7300

HOURS:

Total	Classroom	Laboratory/CC/CVE
180	60	120

JOB TITLE	ONET CODES	JOB TITLE	ONET CODES
Carpenters	47-2031.00	Construction Laborers	47-2061.00
Construction Carpenters	47-2031.01	Helpers - Carpenters	47-3012.00
Rough Carpenters	47-2031.02		

COURSE DESCRIPTION: Construction I is an instructional hands on program that prepares an individual for employment and/or continued education in the occupations of Carpentry using hand tools and power tools. Construction Technology I is a basic course teaching fundamentals of safety, tools, math, and basic carpentry. The class focuses on the manner in which residential and commercial structures are designed and built. The pathway includes instruction in the way in which these structures are built (Class B California License).

PREREQUISITES:

High School Name:	Site Prerequisite:
Estancia High School	N/A

A – G APPROVAL: ☐ Yes ☒ No ☐ Desired

ARTICULATION: not articulated

High School Name:	College Name:	College Course Title:
Estancia High School	N/A	N/A

LEVEL: ☒ Introductory ☐ Concentrator ☐ Capstone

CERTIFICATION:

High School Name:	Embedded/Leads to:	Description:
Estancia High School	Employment eligibility	NCCER, OSHA

METHOD OF STUDENT EVALUATION:

- ✓ Pre and Post test
- ✓ Student Projects

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- ✓ Written work
- ✓ Observation record of student performance
- ✓ Completion of assignments and worksheets

METHOD OF INSTRUCTION:

- ✓ Lecture
- ✓ Group and individual applied projects
- ✓ Demonstration
- ✓ Field Trips
- ✓ Guest Speaker

RECOMMENDED TEXTS:

1. **NCCER Core Curriculum: Introductory Craft Skills**
ISBN: 97-0-13-412143-6; Fifth edition, 2015.

CALIFORNIA CAREER TECHNICAL EDUCATION MODEL CURRICULUM STANDARDS

California Department of Education CTE Standards website: <http://www.cde.ca.gov/ci/ct/sf/ctemcstandards.asp>

Building and Construction Trades KNOWLEDGE AND PERFORMANCE ANCHOR STANDARDS

1.0 Academics

Analyze and apply appropriate academic standards required for successful industry sector pathway completion leading to postsecondary education and employment. Refer to the Building and Construction Trades academic alignment matrix for identification of standards.

2.0 Communications

Acquire and accurately use Building and Construction Trades sector terminology and protocols at the career and college readiness level for communicating effectively in oral, written, and multimedia formats. (Direct alignment with LS 9-10, 11-12.6)

2.1 Recognize the elements of communication using a sender–receiver model.

2.2 Identify barriers to accurate and appropriate communication.

2.3 Interpret verbal and nonverbal communications and respond appropriately.

2.4 Demonstrate elements of written and electronic communication such as accurate spelling, grammar, and format.

2.5 Communicate information and ideas effectively to multiple audiences using a variety of media and formats.

2.6 Advocate and practice safe, legal, and responsible use of digital media information and communications technologies.

3.0 Career Planning and Management

Integrate multiple sources of career information from diverse formats to make informed career decisions, solve problems, and manage personal career plans. (Direct alignment with SLS 11-12.2)

3.1 Identify personal interests, aptitudes, information, and skills necessary for informed career decision making.

3.2 Evaluate personal character traits such as trust, respect, and responsibility and understand the impact they can have on career success.

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3.3 Explore how information and communication technologies are used in career planning and decision making.

3.4 Research the scope of career opportunities available and the requirements for education, training, certification, and licensure.

3.5 Integrate changing employment trends, societal needs, and economic conditions into career planning.

3.6 Recognize the role and function of professional organizations, industry associations, and organized labor in a productive society.

3.7 Recognize the importance of small business in the California and global economies.

3.8 Understand how digital media are used by potential employers and postsecondary agencies to evaluate candidates.

3.9 Develop a career plan that reflects career interests, pathways, and postsecondary options.

4.0 Technology

Use existing and emerging technology to investigate, research, and produce products and services, including new information, as required in the Building and Construction Trades sector workplace environment. (Direct alignment with WS 11-12.6)

4.1 Use electronic reference materials to gather information and produce products and services.

4.2 Employ Web-based communications responsibly and effectively to explore complex systems and issues.

4.3 Use information and communication technologies to synthesize, summarize, compare, and contrast information from multiple sources.

4.4 Discern the quality and value of information collected using digital technologies, and recognize bias and intent of the associated sources.

4.5 Research past, present, and projected technological advances as they impact a particular pathway.

4.6 Assess the value of various information and communication technologies to interact with constituent populations as part of a search of the current literature or in relation to the information task.

5.0 Problem Solving and Critical Thinking

Conduct short, as well as more sustained, research to create alternative solutions to answer a question or solve a problem unique to the Building and Construction Trades sector using critical and creative thinking, logical reasoning, analysis, inquiry, and problem-solving techniques. (Direct alignment with WS 11-12.7)

5.1 Identify and ask significant questions that clarify various points of view to solve problems.

5.2 Solve predictable and unpredictable work-related problems using various types of reasoning (inductive, deductive) as appropriate.

5.3 Use systems thinking to analyze how various components interact with each other to produce outcomes in a complex work environment.

5.4 Interpret information and draw conclusions, based on the best analysis, to make informed decisions.

6.0 Health and Safety

Demonstrate health and safety procedures, regulations, and personal health practices and determine the meaning of symbols, key terms, and domain-specific words and phrases as related to the Building and Construction Trades sector workplace environment. (Direct alignment with RSTS 9-10, 11-12.4)

6.1 Interpret policies, procedures, and regulations for the workplace environment, including employer and employee responsibilities.

6.2 Use health and safety practices for storing, cleaning, and maintaining tools, equipment, and supplies.

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6.3 Set up a work area, or shop, to avoid potential health concerns and safety hazards, including but not limited to electrical (shock), wires (tripping), fumes (lung health), noise (hearing loss), fire (burns), and so forth, incorporating ergonomics.

6.4 Practice personal safety when lifting, bending, or moving equipment and supplies.

6.5 Demonstrate how to prevent and respond to work-related accidents or injuries; this includes demonstrating an understanding of ergonomics.

6.6 Maintain a safe and healthful working environment.

6.7 Be informed of laws/acts pertaining to the Occupational Safety and Health Administration (OSHA).

6.8 Report hazards found on the job site to supervisor/teacher.

6.9 Locate, and adhere to, Material Safety Data Sheet (MSDS) instructions.

6.10 Maintain proper use of safety apparel at all times, including but not limited to, eye protection, hearing protection, skin protection, head protection, footwear and protection from airborne particulate matter.

6.11 Comply with the safe handling, storage and disposal of chemicals, materials and adhesives in accordance with local, state, and federal safety and environmental regulations (OSHA, Environmental Protection Agency [EPA], Hazard Communication [HazCom], Material Safety Data Sheets [MSDS], etc.).

6.12 Demonstrate the proper care and safe use of hand, portable and stationary power tools.

7.0 Responsibility and Flexibility

Initiate, and participate in, a range of collaborations demonstrating behaviors that reflect personal and professional responsibility, flexibility, and respect in the Building and Construction Trades sector workplace environment and community settings. (Direct alignment with SLS 9-10, 11-12.1)

7.1 Recognize how financial management impacts the economy, workforce, and community.

7.2 Explain the importance of accountability and responsibility in fulfilling personal, community, and workplace roles.

7.3 Understand the need to adapt to changing and varied roles and responsibilities.

7.4 Practice time management and efficiency to fulfill responsibilities.

7.5 Apply high-quality techniques to product or presentation design and development.

7.6 Demonstrate knowledge and practice of responsible financial management.

7.7 Demonstrate the qualities and behaviors that constitute a positive and professional work demeanor, including appropriate attire for the profession.

7.8 Explore issues of global significance and document the impact on the Building and Construction Trades sector.

8.0 Ethics and Legal Responsibilities

Practice professional, ethical, and legal behavior, responding thoughtfully to diverse perspectives and resolving contradictions when possible, consistent with applicable laws, regulations, and organizational norms. (Direct alignment with SLS 11-12.1d)

8.1 Access, analyze, and implement quality assurance standards of practice.

8.2 Identify local, district, state, and federal regulatory agencies, entities, laws, and regulations related to the Building and Construction Trades industry sector.

8.3 Demonstrate ethical and legal practices consistent with Building and Construction Trades sector workplace standards.

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8.4 Explain the importance of personal integrity, confidentiality, and ethical behavior in the workplace.

8.5 Analyze organizational culture and practices within the workplace environment.

8.6 Adhere to copyright and intellectual property laws and regulations, and use and appropriately cite proprietary information.

8.7 Conform to rules and regulations regarding sharing of confidential information, as determined by Building and Construction Trades sector laws and practices.

9.0 Leadership and Teamwork

Work with peers to promote divergent and creative perspectives, effective leadership, group dynamics, team and individual decision making, benefits of workforce diversity, and conflict resolution as practiced in the SkillsUSA career technical student organization. (Direct alignment with SLS 11-12.1b)

9.1 Define leadership and identify the responsibilities, competencies, and behaviors of successful leaders.

9.2 Identify the characteristics of successful teams, including leadership, cooperation, collaboration, and effective decision-making skills as applied in groups, teams, and career technical student organization activities.

9.3 Understand the characteristics and benefits of teamwork, leadership, and citizenship in the school, community, and workplace setting.

9.4 Explain how professional associations and organizations and associated leadership development and competitive career development activities enhance academic preparation, promote career choices, and contribute to employment opportunities.

9.5 Understand that the modern world is an international community and requires an expanded global view.

9.6 Respect individual and cultural differences and recognize the importance of diversity in the workplace.

9.7 Participate in interactive teamwork to solve real Building and Construction Trades sector issues and problems.

10.0 Technical Knowledge and Skills

Apply essential technical knowledge and skills common to all pathways in the Building and Construction Trades sector, following procedures when carrying out experiments or performing technical tasks. (Direct alignment with WS 11-12.6)

10.1 Interpret and explain terminology and practices specific to the Building and Construction Trades sector.

10.2 Comply with the rules, regulations, and expectations of all aspects of the Building and Construction Trades sector.

10.3 Construct projects and products specific to the Building and Construction Trades sector requirements and expectations.

10.4 Collaborate with industry experts for specific technical knowledge and skills.

10.5 Demonstrate the basic care, proper maintenance, and use of hand, portable, and stationary tools related to the Building and Construction trades.

11.0 Demonstration and Application

Demonstrate and apply the knowledge and skills contained in the Building and Construction Trades anchor standards, pathway standards, and performance indicators in classroom, laboratory, and workplace settings, and through a career technical student organizations.

11.1 Utilize work-based/workplace learning experiences to demonstrate and expand upon knowledge and skills gained during classroom instruction and laboratory practices specific to the Building and Construction Trades sector program of study.

11.2 Demonstrate proficiency in a career technical pathway that leads to certification, licensure, and/or continued

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learning at the postsecondary level.

11.3 Demonstrate entrepreneurship skills and knowledge of self-employment options and innovative ventures.

11.4 Employ entrepreneurial practices and behaviors appropriate to Building and Construction Trades sector opportunities.

11.5 Create a portfolio, or similar collection of work, that offers evidence through assessment and evaluation of skills and knowledge competency as contained in the anchor standards, pathway standards, and performance indicators.

CR = Classroom LAB/CC = Laboratory/Shop/Community Classroom

I.	INTRODUCTION - Overview	CR	LAB/ CC	STANDARDS
	A Rules and Regulations B, Shop Tour 1. Emergency Wash 2. Fire Extinguishers 3. Chemicals Storage	5		Academic: LS11-12.6 WS 11-12.7 AD 12.7 CC 3 SEP 8 CTE Anchor: 1.0 2.0 6.0 CTE Pathway: D1.3
II.	Shop Health and Safety	CR	LAB/ CC	STANDARDS
	All Student will Pass a general written Safety Test and Specific test covering the following subjects. A. Proper Shop Behavior B. Proper Clothes and Attire. C. Movement around the Shop D. Specific machine Safety 1. Hand Tools 2. Hand held Power Tools 3. Machine Tools 4. Operation Specific Tools 5. Chemicals and MSDS Sheets	5	5	Academic: LS11-12.6 WS 11-12.7 AD 12.7 CC 3 SEP 8 CTE Anchor: 1.0 2.0 5.0 6.0 CTE Pathway: D1.3
III.	Basic Hand Tools	CR	LAB/ CC	STANDARDS

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	Students will demonstrate proper use of all in hand tools and pass a written test for the following units A. Hand Tools 1. T - Squares 2. Framing Squares 3. Tape Measure 4. Hand Saws 5. Files 6. Planers 7. Chalk Line	5	10	Academic: LS11-12.6 RLST11-12.3 AD 12.7 CC 3 SEP 8 CTE Anchor: 1.0 6.0 11.0 CTE Pathway: D6.0 D6.1, D6.2 D6.4 D6.5
IV.	Hand held power Tools	CR	LAB/ CC	STANDARDS
	Students will demonstrate proper use of all in hand held power tools and pass a written test for the following Units A. Circular saw B. Saber Saw C. Hand Drill D. Reciprocating Saw E. Job Specific specialty tools	5	10	Academic: LS11-12.6 RLST11-12.3 AD 12.7 CC 3 SEP 8 CTE Anchor: 1.0 6.0 10.0 11.0 CTE Pathway: D6.0 D6.1, D6.2 D6.4 D6.5
V.	Stationary Power machines	CR	LAB/ CC	STANDARDS
	Students will demonstrate proper use of all Stationary power Machines and pass a written test for the hand tool Units A. Table Saw B. Standing drill Press C. Planer D. Joiner E. Power Miter saw F. Band Saw G. Scroll Saw H. Table Router	5	20	Academic: LS11-12.6 RLST11-12.2 AD 12.7 CC 3 SEP 8 CTE Anchor: 1.0 6.0 11.0 CTE Pathway: D2.0 D2.1 D2.2 D6.0 D6.1 D6.2 D6.3 D6.4 D6.7 D6.9

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VI.	Basic House Framing	CR	LAB/ CC	STANDARDS
	I. Students Draw out a Floor Plan of a Basic House and layout the walls, windows, and doors. They will measure and identify and build, to code measurements the following Framing Parts. A. Floor Joists B. Wall Anatomy 1. Bottom/ Top Plate 2. King Stud 3. Header 4. Rough Sill 5. Cripple Stud 6. Jack and Trimmer Stud II. Students will design , layout and assemble three different types of roof trusses A. Queen post Truss B. Attic Truss C. Fink Truss	10	40	Academic: LS11-12.6 A-CED 1.1 (CA Standard Algebra II 11.2) G-SRT 8.1 CC 3 CTE Anchor: 1.0 2.0 10.0 11.0 CTE Pathway: D2.0 D2.1 D2.2 D6.0 D6.1 D6.2 D6.3 D6.4 D6.7 D6.9
VII	Cement and Drywall	CR	LAB/ CC	STANDARDS
	Cement A. A Students will Pass a written Test Identifying the chemical interaction in Cement and Mortar mix B. Students are to create a Wooden form and pour a slab of concrete to a specific dimension Drywall A. Students will measure and cut sections of drywall B. Students will apply drywall to studs and apply tape C. Students will use Drywall joint compound D. Students will sand to finish and apply final coat	5	50	Academic: LS11-12.6 A-CED 1.1 (CA Standard Alg II 11.2) G-SRT 8.1 CC 3 CTE Anchor: 1.0 2.0 6.0 10.0 11.0 CTE Pathway: D2.0 D2.1 D2.2 D6.0 D6.1 D6.2 D6.3 D6.4 D6.7 D6.9
VII.	EMPLOYMENT PORTFOLIO	CR	LAB/ CC	STANDARDS
	A. Students will prepare a professional portfolio. 1. Portfolio showcases best professional level work	5	0	Academic: LS11-12.6 RSIT 11-12.6

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	2. Portfolio is organized 3. Job application 4. Resume 5. References			RLST 11-12.7 WS 11-12.7 WHSST 11-12.7 PE 12.1 CTE Anchor: 1.0 2.0 3.0 11.0 CTE Pathway: D1.3 D3.0
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