

Coastline ROP – Career Technical Education

**CONSTRUCTION TECHNOLOGY PRE-APPRENTICESHIP**

**INDUSTRY SECTOR:** Building and Construction Trades Sector  
**PATHWAY:** Residential and Commercial Construction  
**CALPADS TITLE:** Introduction to Residential and Commercial Construction  
**CALPADS CODE:** 7340

**HOURS:**

Total	Classroom	Laboratory/CC/CVE
180	180	0

JOB TITLE	O*NET CODE	JOB TITLE	O*NET CODE
Carpenters	47-2031.00	Construction Managers	11-9021.00
Construction Carpenters	47-2031.01	Construction and Related Workers, All Other	47-4099.00

**COURSE DESCRIPTION:**

Prepare for employment as an entry-level building maintenance and repair technician for residential/commercial complexes, residential refurbishment agencies, or for self-employment. Instruction and lab experience includes blueprint reading, basic plumbing, electrical, masonry, glass, tile, flooring, drywall, carpentry, and roofing repairs.

**A-G APPROVAL:** No

**ARTICULATION:**

College	Course Code
Coastline Community College	CNST A100

**DUAL ENROLLMENT:** None

**PREREQUISITES:**

Prerequisite
None

## METHODS OF INSTRUCTION

- Direct instruction
- Group and individual applied projects
- Multimedia
- Demonstration
- Field trips
- Guest speakers

## STUDENT EVALUATION:

- Student projects
- Written work
- Exams
- Observation record of student performance
- Completion of assignment

## INDUSTRY CERTIFICATION:

- None

## RECOMMENDED TEXTS:

- Career Connections Series Project Book 1, 2, 3 - CITF
- One Trade, Many Careers (Career Connections Series) Paperback – CITF
- Mathematics for the Trades: A Guided Approach (11th Edition) (What's New in Trade Math) - Hal Saunders, Robert Carman

## PROGRAM OF STUDY

Grade	Fall	Spring	Year	Course Type	Course Name
9, 10, 11, 12				Introductory	Construction Technology Pre-Apprenticeship
10, 11, 12				Concentrator	Construction Tech 2A/2B
10, 11, 12				Capstone	Construction Tech 3A/3B

I.	INTRODUCTION AND ORIENTATION	CR	Lab/ CC	Standards
	<ul style="list-style-type: none"> <li>• Demonstrate awareness of course objectives and competencies</li> <li>• Demonstrate an understanding of course requirements and student expectations</li> <li>• Demonstrate awareness of the industry standards and career opportunities</li> </ul>	2	0	<b>Academic:</b> LS: 11-12.6 RLST : 11-12.2 <b>CTE Anchor:</b> Career Planning and Management: 3.4 <b>CTE Pathway:</b> D1.1
II.	INDUSTRIAL SAFETY	CR	Lab/ CC	Standards
	<ul style="list-style-type: none"> <li>• Identify commonly encountered hazardous chemicals and materials</li> <li>• Define carcinogens as they relate to the industry</li> <li>• Practice ladder and scaffolding procedures and correct lifting techniques</li> <li>• Demonstrate fire safety and eye protection</li> <li>• Be aware of accident/emergency procedures and on-the-job first aid</li> <li>• Take the necessary precautions for moving materials</li> </ul>	5	0	<b>Academic:</b> LS: 11-12.6 RSIT : 11-12.2, 11-12.7 RHSS : 11-12.7 RLST : 11-12.2 WS : 11-12.2 <b>CTE Anchor:</b> Health and Safety: 6.1, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12 <b>CTE Pathway:</b> D1.1, D1.2, D1.3
III.	TOOLS	CR	Lab/ CC	Standards
	<ul style="list-style-type: none"> <li>• Identify commonly used hand tools and power tools</li> <li>• Demonstrate the safe and proper use of hand and power tools, including pneumatic, electrical, and cordless</li> <li>• Know and understand the proper care, maintenance, storage and transportation of hand, and power tools</li> </ul>	8	0	<b>Academic:</b> RLST : 11-12.3 <b>CTE Anchor:</b> Health and Safety: 6.1, 6.2, 6.3, 6.5, 6.6, 6.12 <b>CTE Pathway:</b> D4.1, D5.10, D6.6
IV.	MEASUREMENT/LAYOUT	CR	Lab/ CC	Standards
	<ul style="list-style-type: none"> <li>• Understand linear measurement – American Standards to 1/32 of 1 inch</li> <li>• Be familiar with metric linear measurement</li> <li>• Demonstrate a basic understanding of area and cubic measurement</li> <li>• Explain pattern construction</li> <li>• Define material conservation</li> </ul>	8	0	<b>Academic:</b> LS: 11-12.6 RLST : 11-12.3 G-GMD: 5 G-MG: 3 G-SRT: 8 SEP: 6 CC: 1 ETS: ETS1 <b>CTE Anchor:</b> Problem Solving and Critical Thinking: 5.3, 5.4 Technical Knowledge and

				Skills: 10.1, 10.3 <b>CTE Pathway:</b> D2.2, D2.3, D2.4, D2.1, D3.5
<b>V.</b>	<b>GLUING/CLAMPING</b>	<b>CR</b>	<b>Lab/ CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>• Demonstrate an understanding of related safety issues</li> <li>• Identify types of glue</li> <li>• Practice specific adhesives applications</li> <li>• Identify the types and uses of clamps</li> </ul>	6	0	<b>Academic:</b> LS: 11-12.6 RLST : 11-12.3 WS : 11-12.2 <b>CTE Anchor:</b> Problem Solving and Critical Thinking: 5.4 Health and Safety: 6.6, 6.9, 6.11, 6.12 Technical Knowledge and Skills: 10.1, 10.3 <b>CTE Pathway:</b> D6.6
<b>VI.</b>	<b>FASTENERS AND HARDWARE</b>	<b>CR</b>	<b>Lab/ CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>• Identify commonly used fasteners</li> <li>• Demonstrate the safe use of fasteners</li> <li>• Identify and operate hinges and hasps</li> <li>• Describe door locks including deadbolts</li> <li>• Complete installation and replacement techniques</li> </ul>	8	0	<b>Academic:</b> LS: 11-12.6 RLST : 11-12.3 WS : 11-12.2 <b>CTE Anchor:</b> Problem Solving and Critical Thinking: 5.4 Health and Safety: 6.12 Technical Knowledge and Skills: 10.1, 10.3 <b>CTE Pathway:</b> D6.6, D8.7, D8.8
<b>VII.</b>	<b>ABRASIVES</b>	<b>CR</b>	<b>Lab/ CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>• Identify types of manually and power operated abrasives</li> <li>• Demonstrate an understanding of related safety knowledge</li> </ul>	5	0	<b>Academic:</b> LS: 11-12.6 RLST : 11-12.3 <b>CTE Anchor:</b> Health and Safety: 6.3, 6.6, 6.11, 6.12 Technical Knowledge and Skills: 10.1, 10.3 <b>CTE Pathway:</b> D5.10, D10.1
<b>VIII.</b>	<b>NEW DEVELOPMENTS IN BUILDING MATERIALS</b>	<b>CR</b>	<b>Lab/ CC</b>	<b>Standards</b>

	<ul style="list-style-type: none"> <li>Identify and understand material classifications including the following: <ul style="list-style-type: none"> <li>Woods</li> <li>Composition materials (particle board/masonite, etc.)</li> <li>Drywall</li> <li>Roofing materials</li> <li>Floor covering – linoleum</li> <li>Tile: ceramic and asphalt</li> <li>Plastic laminate</li> <li>Glass</li> <li>Reinforcing steel</li> <li>Sheet metal: vents, turbines and rain gutters</li> </ul> </li> <li>State the permissible uses of the above materials</li> <li>Define the code restriction to the above materials</li> <li>Practice safe cutting precautions and techniques</li> <li>Determine moving and storage considerations</li> </ul>	2	0	<b>Academic:</b> LS: 11-12.6 RLST : 11-12.2, 11-12.3 WS : 11-12.2 <b>CTE Anchor:</b> Problem Solving and Critical Thinking: 5.4 Health and Safety: 6.1, 6.3, 6.11, 6.12 Technical Knowledge and Skills: 10.1, 10.2, 10.3 <b>CTE Pathway:</b> D5.1, D6.6, D7.1, D7.6, D8.6, D10.1
<b>IX.</b>	<b>BLUEPRINT READING</b>	<b>CR</b>	<b>Lab/ CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>Explain the standard architectural and electrical symbols</li> <li>Read and understand reference materials</li> </ul>	8	0	<b>Academic:</b> LS: 11-12.6 RSIT : 11-12.2 RLST : 11-12.2, 11-12.3 G-GMD: 1 G-MG: 1 ETS: ETS1, ETS1.A, ETS1.B, ETS1.C <b>CTE Anchor:</b> Communications: 2.4 Problem Solving and Critical Thinking: 5.2 Technical Knowledge and Skills: 10.1 <b>CTE Pathway:</b> D2.1, D2.2, D3.6, D3.7, D3.1, D3.2, D3.3, D3.4, D3.5
<b>X.</b>	<b>CONSTRUCTION COST ESTIMATING</b>	<b>CR</b>	<b>Lab/ CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>Compute material, shipping, and delivery costs</li> <li>Discuss labor rates and contracts</li> <li>Estimate labor costs</li> <li>Demonstrate an understanding of building permits and inspections</li> <li>Read and understand customer/consumer protection laws</li> </ul>	8	0	<b>Academic:</b> LS: 11-12.6 RSIT : 11-12.2 RLST : 11-12.2, 11-12.3 WS : 11-12.2 <b>CTE Anchor:</b> Communications: 2.3, 2.4, 2.5, 2.6 Problem Solving and Critical Thinking: 5.3 Technical

				Knowledge and Skills: 10.1, 10.3 <b>CTE Pathway:</b> D2.3, D9.1, D9.3
<b>XI.</b>	<b>BUILDING CODES</b>	<b>CR</b>	<b>Lab/CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>• Read and demonstrate an understanding of the following: <ul style="list-style-type: none"> <li>• Construction codes</li> <li>• Electrical codes</li> <li>• Plumbing codes</li> </ul> </li> </ul>	10	0	<b>Academic:</b> LS: 11-12.6 RSIT : 11-12.2 RLST : 11-12.2, 11-12.3 ETS: ETS1 <b>CTE Anchor:</b> Ethics and Legal Responsibilities: 8.2, 8.7 Technical Knowledge and Skills: 10.1, 10.3 <b>CTE Pathway:</b> D1.3, D1.1, D1.2, D10.2, D11.6
<b>XII.</b>	<b>ROOFING</b>	<b>CR</b>	<b>Lab/CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>• Identify the current technological developments</li> <li>• Practice-related safety techniques</li> <li>• Understand the method to remove existing roof material</li> <li>• Know and understand the code mandated upgrades for existing substructures</li> <li>• Install roofing materials</li> </ul>	10	0	<b>Academic:</b> LS: 11-12.6 RLST : 11-12.2, 11-12.3 G-MG: 1, 3 G-SRT: 8 <b>CTE Anchor:</b> Health and Safety: 6.3, 6.11, 6.12 Ethics and Legal Responsibilities: 8.2, 8.7 <b>CTE Pathway:</b> D1.2, D1.3, D2.2, D6.14, D6.15, D6.16, D8.9, D8.10
<b>XIII.</b>	<b>ELECTRICAL WIRING</b>	<b>CR</b>	<b>Lab/CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>• Practice related safety techniques</li> <li>• Demonstrate an understanding of simple to complex circuits</li> <li>• Be proficient in the use of electrical test equipment</li> <li>• Know and understand replacement techniques for defective: <ul style="list-style-type: none"> <li>• outlets</li> <li>• switches</li> <li>• sockets and fixtures</li> <li>• other components</li> </ul> </li> <li>• Practice additions to existing circuits</li> <li>• Troubleshoot electrical problems</li> <li>• Apply installation techniques for electrical appliances</li> <li>• Demonstrate an understanding of new wiring and materials</li> </ul>	10	0	<b>Academic:</b> LS: 11-12.6 RSIT : 11-12.2 RLST : 11-12.2, 11-12.3 WS : 11-12.2 ETS: ETS1 <b>CTE Anchor:</b> Problem Solving and Critical Thinking: 5.1, 5.3 Health and Safety: 6.3, 6.12 Technical Knowledge and

				Skills: 10.1, 10.2, 10.3 <b>CTE Pathway:</b> D2.8, D9.1, D11.1, D11.2, D11.3, D11.4, D11.5, D11.6, D11.7, D11.8, D11.9, D11.10, D11.11, D11.12, D11.13
<b>XIV.</b>	<b>FLOORING</b>	<b>CR</b>	<b>Lab/CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>• Know and understand how to apply the safe removal techniques of existing floor types including ceramics/asphalt tiles, parquet/hardwoods, linoleum, and carpeting</li> <li>• Understand and demonstrate the safe installation techniques of new flooring including ceramics/asphalt tiles, parquet/hardwoods, linoleum, and carpeting</li> </ul>	10	0	<b>Academic:</b> LS: 11-12.6 RSIT : 11-12.2 RLST : 11-12.2, 11-12.3 <b>CTE Anchor:</b> Health and Safety: 6.3, 6.12 Ethics and Legal Responsibilities: 8.2 Technical Knowledge and Skills: 10.1, 10.3 <b>CTE Pathway:</b> D6.4
<b>XV.</b>	<b>PAINTING</b>	<b>CR</b>	<b>Lab/CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>• Demonstrate an understanding of interior/exterior clear finishes and paint types</li> <li>• Practice safe surface preparation techniques including masking</li> <li>• Understand and demonstrate painting methods including the use of brush, roller, spray gun, and minor color matching and touch-ups</li> <li>• Know and understand the safe disposal and clean-up of paint and paint-related items</li> </ul>	10	0	<b>Academic:</b> LS: 11-12.6 RSIT : 11-12.2 RLST : 11-12.2, 11-12.3 <b>CTE Anchor:</b> Health and Safety: 6.1, 6.3, 6.6, 6.11, 6.12 Ethics and Legal Responsibilities: 8.2 Technical Knowledge and Skills: 10.1 <b>CTE Pathway:</b> D7.1, D7.5, D8.5
<b>XVI.</b>	<b>HEATING AND AIR CONDITIONING</b>	<b>CR</b>	<b>Lab/CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>• Identify the major components of a HVAC system (including gas heaters, electric heaters, and air conditioner types)</li> <li>• Demonstrate a working knowledge of blower motors and thermostatic controls</li> <li>• Diagnose simple and complex HVAC component malfunctions</li> <li>• Determine safe and proper component repair and replacement techniques</li> </ul>	10	0	<b>Academic:</b> LS: 11-12.6 RSIT : 11-12.2 RLST : 11-12.2, 11-12.3 WS : 11-12.2 SEP: 1, 3 <b>CTE Anchor:</b>

				Problem Solving and Critical Thinking: 5.2 Health and Safety: 6.3, 6.12 Ethics and Legal Responsibilities: 8.2 Technical Knowledge and Skills: 10.1 <b>CTE Pathway:</b> D2.3, D8.9, D9.4, D10.9, D10.7
<b>XVII.</b>	<b>PLUMBING</b>	<b>CR</b>	<b>Lab/CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>Describe the principles of pressurized and non-pressurized liquid flow</li> <li>Explain the usage of various plumbing materials including copper, galvanized pipe, and PVC</li> <li>Demonstrate safe and proper installation techniques for gas appliances</li> <li>Differentiate various facet types and related installations and repairs</li> <li>Differentiate various toilet types and related installations and repairs</li> <li>Differentiate various sink, tub, shower types, and related installations and repairs</li> <li>Practice safe and proper drain system clearing including pipe/trap clearing, garbage disposals, and sewers</li> <li>Identify fire sprinkler systems</li> <li>Understand irrigation sprinkler systems and drainage</li> </ul>	10	0	<b>Academic:</b> LS: 11-12.6 RLST : 11-12.2, 11-12.3 WS : 11-12.2 <b>CTE Anchor:</b> Problem Solving and Critical Thinking: 5.2 Health and Safety: 6.3, 6.12 Ethics and Legal Responsibilities: 8.2 Technical Knowledge and Skills: 10.1 <b>CTE Pathway:</b> D10.8, D10.9, D10.10, D10.11, D10.12, D10.3, D10.4, D10.5, D10.6, D10.7, D10.1, D10.2
<b>XVIII.</b>	<b>GLAZING</b>	<b>CR</b>	<b>Lab/CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>Practice proper and safe removal of windows and damaged glass</li> <li>Demonstrate the proper measurement and trimming of new glass</li> <li>Understand and demonstrate proper caulking and molding techniques</li> </ul>	5	0	<b>Academic:</b> LS: 11-12.6 RSIT : 11-12.2 RLST : 11-12.2, 11-12.3 WS : 11-12.2 G-GMD: 5 G-MG: 1, 3 G-SRT: 8 <b>CTE Anchor:</b> Problem Solving and Critical Thinking: 5.2 Health and Safety: 6.3, 6.11, 6.12 Ethics and Legal

				Responsibilities: 8.2 Technical Knowledge and Skills: 10.1 <b>CTE Pathway:</b> D7.7, D7.8, D8.7, D8.9, D8.8
<b>XIX.</b>	<b>INSULATION</b>	<b>CR</b>	<b>Lab/ CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>• Understand and demonstrate the safe and proper installation techniques for rolled and blown insulation</li> <li>• Understand and demonstrate the safe and proper installation techniques for door and window insulation</li> <li>• Practice air tight door-hanging techniques</li> </ul>	5	0	<b>Academic:</b> LS: 11-12.6 RSIT : 11-12.2 RLST : 11-12.2, 11-12.3 WS : 11-12.2 G-MG: 3 <b>CTE Anchor:</b> Problem Solving and Critical Thinking: 5.2 Health and Safety: 6.3, 6.4, 6.6, 6.11, 6.12 Ethics and Legal Responsibilities: 8.2 Technical Knowledge and Skills: 10.1 <b>CTE Pathway:</b> D1.2, D7.8, D7.7, D8.7, D8.8, D8.10, D8.11
<b>XX.</b>	<b>MASONRY</b>	<b>CR</b>	<b>Lab/ CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>• Know and understand concrete and grout mixes and mix combinations</li> <li>• Demonstrate the safe and proper replacement/repair of concrete blocks and bricks</li> <li>• Demonstrate the safe and proper replacement/repair of concrete slabs including framing and finishing</li> <li>• Demonstrate proper and safe replacement/repair of plaster and drywall walls</li> </ul>	10	0	<b>Academic:</b> LS: 11-12.6 RLST : 11-12.2, 11-12.3 WS : 11-12.2 G-GPE: 5 G-MG: 1, 3 N-Q: 1 <b>CTE Anchor:</b> Problem Solving and Critical Thinking: 5.2 Health and Safety: 6.3, 6.4, 6.6, 6.11, 6.12 <b>CTE Pathway:</b> D5.1, D5.2, D5.3, D5.4, D5.5, D5.6, D5.7, D5.8, D5.9, D5.10

XXI.	COMMERCIAL/RESIDENTIAL	CR	Lab/ CC	Standards
	<ul style="list-style-type: none"> <li>• Understand commercial building management practices.</li> <li>• Explore tenant/landlord relations and tenant/landlord law.</li> <li>• Demonstrate a basic understanding of:               <ul style="list-style-type: none"> <li>• Change of occupant inspection</li> <li>• Work order completion</li> <li>• Rent collection and accounting</li> <li>• Routine maintenance and scheduling</li> </ul> </li> </ul>	8	0	<b>Academic:</b> LS: 11-12.6 RSIT : 11-12.2 RLST : 11-12.2, 11-12.3 <b>CTE Anchor:</b> Health and Safety: 6.1, 6.2, 6.3, 6.6, 6.7, 6.11, 6.12 <b>CTE Pathway:</b> D1.3, D1.2
XXII.	EMPLOYMENT LITERACY	CR	Lab/ CC	Standards
	<ul style="list-style-type: none"> <li>• Identify available positions in the industry through the use of the internet</li> <li>• Complete an application form correctly</li> <li>• Prepare a written resume</li> <li>• Participate in a simulated employment interview</li> <li>• Prepare a portfolio</li> </ul>	10	0	<b>Academic:</b> LS: 11-12.6 RSIT : 11-12.2 RLST : 11-12.2, 11-12.3 WS : 11-12.2, 11-12.4 <b>CTE Anchor:</b> Communications: 2.4, 2.5 Career Planning and Management: 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 Demonstration and Application: 11.5 <b>CTE Pathway:</b> D1.1
XXIII.	PERSONAL SKILLS RELATED TO EMPLOYMENT	CR	Lab/ CC	Standards
	<ul style="list-style-type: none"> <li>• Demonstrate promptness, attend class regularly, and follow absence notification procedures</li> <li>• Develop and maintain acceptable working relations</li> <li>• Demonstrate the ability to manage time wisely</li> <li>• Demonstrate a positive and cooperative attitude</li> <li>• Demonstrate values of honesty and integrity</li> <li>• Demonstrate respect for others</li> <li>• Demonstrate appropriate personal hygiene/grooming, and dress</li> <li>• Demonstrate responsibility by exerting a high level of effort and working toward a goal</li> </ul>	3	0	<b>Academic:</b> LS: 11-12.6 <b>CTE Anchor:</b> Responsibility and Flexibility: 7.2, 7.3, 7.4, 7.5, 7.7 Ethics and Legal Responsibilities: 8.2, 8.3, 8.7 <b>CTE Pathway:</b> D1.1
XXIV.	INTERPERSONAL SKILLS AND GROUP DYNAMICS	CR	Lab/ CC	Standards
	<ul style="list-style-type: none"> <li>• Utilize problem-solving techniques</li> <li>• Demonstrate the ability to work as a member of a team</li> <li>• Identify proper procedures for handling harassment</li> <li>• Demonstrate leadership skills by working independently, making appropriate decisions, working well with others, and accepting constructive criticism</li> <li>• Demonstrate the ability to accept and work with individuals from various cultures</li> </ul>	3	0	<b>Academic:</b> LS: 11-12.6 RSIT : 11-12.7 RLST : 11-12.2 WS : 11-12.2 SEP: 1, 4, 6 <b>CTE Anchor:</b> Leadership and

				Teamwork: 9.2, 9.3 <b>CTE Pathway:</b> D1.1
<b>XXV.</b>	<b>THINKING AND PROBLEM SOLVING SKILLS</b>	<b>CR</b>	<b>Lab/ CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>• Describe problem-solving techniques</li> <li>• Understand logical reasoning.</li> <li>• Demonstrate creative thinking.</li> <li>• Participate in decision-making.</li> <li>• Demonstrate the ability to interpret information correctly.</li> </ul>	3	0	<b>Academic:</b> LS: 11-12.6 RLST : 11-12.2, 11-12.3 WS : 11-12.2 SEP: 1, 4, 6 <b>CTE Anchor:</b> Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4 <b>CTE Pathway:</b> D1.1
<b>XXVI.</b>	<b>COMMUNICATION SKILLS</b>	<b>CR</b>	<b>Lab/ CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>• Demonstrate effective verbal and written skills</li> <li>• Read technical journals, and write technical reports using appropriate terminology</li> <li>• Listen attentively, follow directions, and relay directions to others</li> <li>• Demonstrate ability to research and retrieve information</li> </ul>	3	0	<b>Academic:</b> LS: 11-12.6 RSIT : 11-12.2 RLST : 11-12.2, 11-12.3 WS : 11-12.2 <b>CTE Anchor:</b> Communications: 2.4, 2.5 <b>CTE Pathway:</b> D1.1