Building Management II

8591 36 weeks / 280 hours

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Acknowledgments

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Course Description

**Suggested Grade Level:** 11 or 12  
**Prerequisites:** 8590

Students obtain advanced knowledge and skills to perform the upkeep of commercial and public buildings and grounds through hands-on training in cleaning operations, building repairs, electrical work, plumbing, and grounds maintenance.

*As noted in Superintendent's Memo #058-17 (2-28-2017), this Career and Technical Education (CTE) course must maintain a maximum pupil-to-teacher ratio of 20 students to one teacher, due to safety regulations. The 2016-2018 biennial budget waiver of the teacher-to-pupil ratio staffing requirement does not apply.*

Task Essentials List

- Tasks/competencies designated by plus icons (➕) in the left-hand column(s) are essential
- Tasks/competencies designated by empty-circle icons (〇) are optional
- Tasks/competencies designated by minus icons (➖) are omitted
- Tasks marked with an asterisk (*) are sensitive.
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<th>Task Number</th>
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<tr>
<td><strong>Applying Basic Construction Safety Standards (Core Safety)</strong></td>
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<tr>
<td>39</td>
<td>♦</td>
<td>Comply with federal, state, and local safety legal requirements, including OSHA, VOSHA, and EPA.</td>
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<tr>
<td>40</td>
<td>♦</td>
<td>Inspect and maintain a safe working environment.</td>
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<td>Explain safe working practices around electrical hazards.</td>
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<td>Identify emergency first-aid procedures.</td>
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<td>43</td>
<td>♦</td>
<td>Identify the types of fires and the methods used to extinguish them.</td>
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<td>♦</td>
<td>Identify PPE (personal protective equipment) requirements.</td>
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<td>45</td>
<td>♦</td>
<td>Inspect course-specific hand and power tools to visually identify defects.</td>
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<td>46</td>
<td>♦</td>
<td>Demonstrate lifting and carrying techniques.</td>
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<td>47</td>
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<td>Demonstrate safe laddering techniques.</td>
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<td>48</td>
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<td>Demonstrate safe scaffolding techniques.</td>
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<tr>
<td>49</td>
<td>♦</td>
<td>Report injuries.</td>
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<tr>
<td>50</td>
<td>♦</td>
<td>Report personal, environmental, and equipment safety violations to the appropriate authority.</td>
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<tr>
<td>51</td>
<td>♦</td>
<td>Pass safety exam.</td>
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<tr>
<td><strong>Measuring and Mixing Chemicals</strong></td>
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<tr>
<td>52</td>
<td>♦</td>
<td>Demonstrate safety in the measuring and mixing of chemicals, including volatile chemicals (e.g., furniture and floor strippers, drain cleaners).</td>
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<td>Demonstrate procedures to measure and mix chemicals, including volatile chemicals (e.g., furniture and floor strippers, drain cleaners).</td>
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<tr>
<td>54</td>
<td>♦</td>
<td>Define chemical terminology related to building management.</td>
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<tr>
<td>55</td>
<td>Describe the use of a chemical-mixing station.</td>
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<tr>
<td>56</td>
<td>Clean metal surfaces, using steel wool, wire brush, and solvent.</td>
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<td>57</td>
<td>Identify procedures for maintenance of various surfaces.</td>
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<td>58</td>
<td>Demonstrate procedures used to clean locker rooms, including showers.</td>
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<td>59</td>
<td>Demonstrate procedures used to maintain specialty floors.</td>
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<td>60</td>
<td>Demonstrate advanced procedures used to care for carpets.</td>
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<td>61</td>
<td>Separate materials for recycling.</td>
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<td>62</td>
<td>Clean walls.</td>
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<td>63</td>
<td>Deep clean upholstery.</td>
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Performing General Building Maintenance

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<th>Tasks/Competencies</th>
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<td>Sharpen tools.</td>
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<td>65</td>
<td>Cut sheet metal.</td>
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<tr>
<td>66</td>
<td>Cut molding, using a power miter box.</td>
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<td>67</td>
<td>Remove broken bolt.</td>
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<tr>
<td>68</td>
<td>Shorten bolt.</td>
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<tr>
<td>69</td>
<td>Replace butt hinge.</td>
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<td>70</td>
<td>Realign door.</td>
</tr>
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<td>71</td>
<td>Refinish an exterior door.</td>
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<tr>
<td>72</td>
<td>Refinish an interior door.</td>
</tr>
<tr>
<td>Task Number</td>
<td>Tasks/Competencies</td>
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<tr>
<td>-------------</td>
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<tr>
<td>73</td>
<td>Replace screen in a door.</td>
</tr>
<tr>
<td>74</td>
<td>Replace section of quarter-round or shoe molding.</td>
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<td>75</td>
<td>Replace section of cove molding.</td>
</tr>
<tr>
<td>76</td>
<td>Install resilient floor covering.</td>
</tr>
<tr>
<td>77</td>
<td>Replace ceramic tile.</td>
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<td>78</td>
<td>Remove vinyl tile, using heat.</td>
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<td>79</td>
<td>Describe procedures for installing floor coverings.</td>
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<tr>
<td>80</td>
<td>Demonstrate painting procedures.</td>
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### Maintaining Walls

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<tbody>
<tr>
<td>81</td>
<td>Describe how to cut a hole in a masonry wall.</td>
</tr>
<tr>
<td>82</td>
<td>Spackle holes or cracks in plaster.</td>
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<td>83</td>
<td>Remove loose plaster.</td>
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<td>84</td>
<td>Repair structural cracks in plaster.</td>
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<tr>
<td>85</td>
<td>Describe procedures for storing bagged cement and plaster.</td>
</tr>
<tr>
<td>86</td>
<td>Replace section of drywall.</td>
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</table>

### Maintaining Windows

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<th>Task Number</th>
<th>Tasks/Competencies</th>
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<tbody>
<tr>
<td>87</td>
<td>Replace broken glass.</td>
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<td>88</td>
<td>Glaze window.</td>
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<td>89</td>
<td>Describe procedures for hanging drapes.</td>
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### Demonstrating Electrical Maintenance of Buildings
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<th>Tasks/Competencies</th>
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</thead>
<tbody>
<tr>
<td>90</td>
<td>+</td>
<td>Lubricate an electrical motor.</td>
</tr>
<tr>
<td>91</td>
<td>+</td>
<td>Replace a defective electrical wall receptacle.</td>
</tr>
<tr>
<td>92</td>
<td>+</td>
<td>Replace a defective light socket.</td>
</tr>
<tr>
<td>93</td>
<td>+</td>
<td>Replace a defective light switch.</td>
</tr>
<tr>
<td>94</td>
<td>+</td>
<td>Replace the starter switch in fluorescent lights.</td>
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</tbody>
</table>

### Performing Plumbing Maintenance

<table>
<thead>
<tr>
<th>Task Number</th>
<th>8591</th>
<th>Tasks/Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>95</td>
<td>+</td>
<td>Cut metal tubing.</td>
</tr>
<tr>
<td>96</td>
<td>+</td>
<td>Cut plastic tubing.</td>
</tr>
<tr>
<td>97</td>
<td>+</td>
<td>Sweat solder copper tubing.</td>
</tr>
<tr>
<td>98</td>
<td>+</td>
<td>Test soldering tank for gas leak.</td>
</tr>
<tr>
<td>99</td>
<td>+</td>
<td>Describe procedures for testing for a gas leak, using a soap solution.</td>
</tr>
<tr>
<td>100</td>
<td>+</td>
<td>Describe procedures for installing plumbing fixtures (i.e., commode, urinal, lavatory, shower).</td>
</tr>
<tr>
<td>101</td>
<td>+</td>
<td>Install pipe-repair coupling.</td>
</tr>
<tr>
<td>102</td>
<td>+</td>
<td>Install a sink trap connection (P-trap).</td>
</tr>
<tr>
<td>103</td>
<td>+</td>
<td>Install a sink trap connection (S-trap).</td>
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<tr>
<td>104</td>
<td>+</td>
<td>Join copper tubing, using the compression method.</td>
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<tr>
<td>105</td>
<td>○</td>
<td>Join copper tubing, using the flare method.</td>
</tr>
<tr>
<td>106</td>
<td>+</td>
<td>Form a pipe joint.</td>
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<tr>
<td>107</td>
<td>+</td>
<td>Describe procedures for repairing PEX water lines.</td>
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<tr>
<td>Task Number</td>
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<td>------------</td>
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**Maintaining Interior and Exterior Upkeep**

- **108**: Remove paint, using paint remover.
- **109**: Install a window unit.
- **110**: Clean condensate line and trap on air conditioner.

**Maintaining Grounds**

- **111**: Demonstrate small-engine maintenance.
- **112**: Maintain commercial grounds.
- **113**: Plant shrubs and/or gardens.
- **114**: Describe lawn mower blade-sharpening techniques.
- **115**: Describe grass hook-sharpening techniques.
- **116**: Operate mowing, trimming, and grounds-care equipment.

Legend: ✪Essential  ○Non-essential  ✗Omitted

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**Curriculum Framework**

**Applying Basic Construction Safety Standards (Core Safety)**

**Task Number 39**

Comply with federal, state, and local safety legal requirements, including OSHA, VOSHA, and EPA.
Definition

Compliance should include the identification of the Hazard Communication Standard, the information included on Safety Data Sheets (SDS), and the responsibilities of employers and employees under Hazard Communication regulation.

Process/Skill Questions

- Where should hazardous materials be stored?
- What information can be found on a Safety Data Sheet (SDS)?

Task Number 40

Inspect and maintain a safe working environment.

Definition

Inspection and maintenance should be ongoing and should result in identifying potential hazards on a job site or in the lab, such as unstable or improperly erected scaffolding, electrical hazards, job site debris, improperly stored materials, and air quality hazards and when present, must be remedied by appropriate measures and comply with school and instructor's guidelines.

Process/Skill Questions

- What are some examples of job-site hazards?
- Why is it important to use good housekeeping standards on a job site?
- Why is it important to store materials and tools in their proper place?

Task Number 41

Explain safe working practices around electrical hazards.

Definition

Explanation should include

- identifying equipment used to test electrical circuits
- describing safe working conditions
- demonstrating safe work habits
according to industry standards and instructor's guidelines.

Process/Skill Questions

- What is the definition of proximity work?
- What are safe working clearances according to the National Electric Code (NEC)?
- What are some examples of safe working conditions and safe working habits?
- What is the unseen hazard with electrical work?

---

Task Number 42

Identify emergency first-aid procedures.

Definition

Identification should include first-aid procedures for accidents involving

- bodily fluids
- electrical injuries
- eye injuries
- falls
- burns

according to standard first-aid and school policies.

Process/Skill Questions

- What are the steps that should be followed in the event of an accident?
- Why is knowing CPR an important skill within the electrical trades?
- Why is it important to be certified to administer first aid?
- What are the different classifications (degrees) of electrical burns?

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Task Number 43

Identify the types of fires and the methods used to extinguish them.

Definition
Identification should include the classifications of fires (A, B, C, D, and K), causes and prevention of fires, types of extinguishers, and, when possible, the demonstrated use of a fire extinguisher, in accordance with government regulations and instructor's guidelines.

**Process/Skill Questions**

- Why do fires have different classifications, and what are they?
- What is the fire triangle?
- What are the three things necessary to start a fire?
- Why is it important to know the classification of fire when trying to extinguish it?
- Why and how often should fire extinguishers be inspected?
- What are the classifications of extinguishers?

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**Task Number 44**

**Identify PPE (personal protective equipment) requirements.**

**Definition**

Identification should include procedures for properly putting on, wearing, removing, and maintaining PPE and inspecting PPE to determine if it is safe to use. Appropriate PPE may include eye protection, respirator, hard hat, gloves, safety harness, hearing protection, and safety shoes.

**Process/Skill Questions**

- What are some dangerous effects of sun exposure, and how can one prevent these effects?
- Why is wearing jewelry prohibited while in the lab or on the job site?

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**Task Number 45**

**Inspect course-specific hand and power tools to visually identify defects.**

**Definition**

Inspection of power tools should include
• identifying components of machinery (e.g., guards, blades, moving parts, start/stop switches, cords)
• identifying standard safety procedures (i.e., shop practices, manufacturer's recommendations)
• observing a demonstration of the safe operation and use of each piece of machinery in the shop.

Inspection of hand tools should include identification of tool defects.

**Process/Skill Questions**

- What are some of the basic power tools used in construction?
- What are the proper actions to take before using a power circular saw?
- Why should a power tool always be grounded?

---

**Task Number 46**

**Demonstrate lifting and carrying techniques.**

**Definition**

Demonstration should involve lifting and carrying materials and equipment based on the principles of

- lifting with legs
- keeping back straight
- holding load close to the body
- getting help, if necessary

in accordance with government regulations and instructor's guidelines.

**Process/Skill Questions**

- What are common injuries associated with improper lifting techniques?
- What can one do to prevent injury?
- How does proper positioning affect proper technique?

---

**Task Number 47**

**Demonstrate safe laddering techniques.**
Definition

Demonstration should involve using appropriate conduct and safety procedures while using ladders (e.g., three-point contact), while carrying ladders (e.g., two people at all times), and while erecting and setting ladders. Identification of ladder types may include

- wall (straight) ladder
- extension ladder
- roof ladder
- attic ladder
- special purpose ladders (e.g., "A" ladder, folding ladder, pompier ladder)
- solid beam ladder
- truss beam wood ladder
- aluminum ladder
- wood and aluminum truss ladder
- fiberglass ladder

and the parts and safety features of each.

Process/Skill Questions

- Why are ladders rated for certain weights?
- Why is the apex of a stepladder not considered a step?

Task Number 48

Demonstrate safe scaffolding techniques.

Definition

Demonstration should include inspecting settings, duty ratings, and safety tags.

Process/Skill Questions

- How can one determine the safe weight limit of any particular scaffolding?
- What are some examples of situations in which scaffolding is preferred or required?

Task Number 49

Report injuries.
Definition

Report should consist of an immediate oral statement of the job-related or non-job-related injury to the instructor or supervisor, and may be followed by a written confirmation reporting date, extent of injury, and circumstances of the accident.

Process/Skill Questions

• Why is it important to report injuries?
• What are common reporting procedures?
• Why is it important to report an injury promptly? Before leaving the job site?
• What is worker's compensation?
• What are the key components of an injury report?

Task Number 50

Report personal, environmental, and equipment safety violations to the appropriate authority.

Definition

Report should include an oral or written statement identifying the violation and the date it was observed and should be given to the instructor, supervisor, or the local OSHA inspectors.

Process/Skill Questions

• What ethical considerations might be involved when reporting coworkers?
• Why is it important to follow reporting procedures?
• What is liability?

Task Number 51

Pass safety exam.

Definition

Assessment must measure participation in safety training programs, including attending safety meetings and completing periodic demonstration of knowledge and skills gained from program topics (e.g., interpretation of Safety Data Sheets).
Process/Skill Questions

- How often should one participate in safety training programs? Why?
- How does insurance impact the requirement of continuous retraining for safety?

Measuring and Mixing Chemicals

Task Number 52

Demonstrate safety in the measuring and mixing of chemicals, including volatile chemicals (e.g., furniture and floor strippers, drain cleaners).

Definition

Demonstration should include the use of safety practices and PPE when mixing chemicals. Additional precautions may be required when handling volatile chemicals.

Process/Skill Questions

- What documentation should you read before mixing any chemicals?
- Why is using the appropriate PPE important when mixing chemicals?
- Where can first-aid procedures be found?
- What are volatile chemicals?
- Why is it important to dispose of volatile chemicals properly?

Task Number 53

Demonstrate procedures to measure and mix chemicals, including volatile chemicals (e.g., furniture and floor strippers, drain cleaners).

Definition

Demonstration should include

- selecting PPE, materials, and tools
- identifying various volumes of measuring cups
- mixing chemicals according to the manufacturer’s instructions or other specified ratios.
Process/Skill Questions

- Why must you be familiar with various volumes of measuring cups when measuring chemicals?
- Where would instructions be found for mixing a given chemical to the manufacturer's specifications?
- Where can information on exposure precautions and limits be found?
- Why must adequate ventilation be used when mixing volatile chemicals?
- What procedures should be followed for volatile chemical spills?

Task Number 54

Define chemical terminology related to building management.

Definition

Defining chemical terminology used in building management should include

- caustic
- corrosive
- combustible
- drain cleaner
- flammable
- linseed oil
- refinishing supplies.

Process/Skill Questions

- What safety precautions should be used when working with chemicals?
- What sources may be used to find out the potential hazards related to a particular chemical?
- What is the difference between caustic and corrosive?
- What is the difference between combustible and flammable chemicals?
- What are some of the dangers associated with linseed oil?

Task Number 55

Describe the use of a chemical-mixing station.
Definition

Description should include

- necessary PPE
- benefits of using a chemical-mixing station
- procedures for selecting and dispensing chemicals, according to manufacturer’s instructions.

Process/Skill Questions

- What is a chemical-mixing station?
- What are benefits of using a chemical-mixing station?
- What are the procedures for dispensing chemicals, using a chemical-mixing station?
- What are the procedures for switching between chemicals in a chemical-mixing station?

Performing Cleaning Operations

Task Number 56

Clean metal surfaces, using steel wool, wire brush, and solvent.

Definition

Cleaning should include

- selecting PPE, materials, and tools
- using ventilation procedures
- using procedures to clean metal surfaces with wire brushes, steel wool, or solvents.

Process/Skill Questions

- When would it be appropriate to use steel wool to clean a metal surface? Why?
- When would it be appropriate to use a wire brush to clean a metal surface? Why?
- When would it be appropriate to use a solvent to clean a metal surface? Why?

Task Number 57

Identify procedures for maintenance of various surfaces.
Definition
Identification should include

- PPE, materials, and tools
- cleaning procedures for various surfaces
- routine maintenance procedures for various surfaces.

Process/Skill Questions

- What is terrazzo?
- What is resilient tile?
- What are the steps to refinish a resilient tile floor?

Task Number 58

Demonstrate procedures used to clean locker rooms, including showers.

Definition
Demonstration should include

- selecting PPE, materials, and tools
- applying procedures to clean and sanitize locker rooms and showers, such as removing mildew, lime, and rust, and disinfecting.

Process/Skill Questions

- What would be the first step in the procedure of cleaning a locker room?
- What type of chemical would be used to sanitize a shower?

Task Number 59

Demonstrate procedures used to maintain specialty floors.

Definition
Demonstration should include
• selecting PPE, materials, and tools
• identifying flooring types (e.g., rubberized, gymnasium)
• using procedures and equipment for daily floor care, including stripping, scrubbing, sealing, and refinishing.

Process/Skill Questions

• Why is floor maintenance important in a commercial setting?
• What equipment should be used to scrub a floor?
• What are the benefits of resilient tile?
• What are the various types of quarry tile?

Task Number 60

Demonstrate advanced procedures used to care for carpets.

Definition

Demonstration should include

• selecting PPE
• selecting equipment, chemicals, and procedures necessary for bonnet buffing, hot water extraction, and shampooing
• testing for color fastness
• following cleaning procedures according to manufacturer's instructions.

Process/Skill Questions

• What is bonnet buffing?
• What is the hot water extraction method?

Task Number 61

Separate materials for recycling.

Definition

Separation should include

• selecting PPE
• identifying recyclable items
• sorting the items into appropriate containers.

Process/Skill Questions

• What PPE should be worn when sorting recyclable items?
• What are some examples of recycling containers?
• What are some items that need to be sorted for recycling?

Task Number 62

Clean walls.

Definition

Cleaning should include

• selecting PPE, materials, and tools
• identifying the type of wall surface to be cleaned
• following cleaning procedures appropriate for the surface identified.

Process/Skill Questions

• What type of PPE is required for cleaning walls?
• What cleaning solutions should be used for various wall surfaces?
• What are the procedures for cleaning wallpaper?

Task Number 63

Deep clean upholstery.

Definition

Deep cleaning should include

• selecting PPE
• identifying the type of upholstery to be cleaned
• selecting equipment and chemicals for the upholstery identified
• testing for color fastness
• following cleaning procedures according to manufacturer's instructions.
Process/Skill Questions

- What are the various types of upholstery? How are they different?
- What types of cleaning solutions are used for deep cleaning upholstery?
- Where can manufacturer’s instructions for the use of cleaning solutions be found?

Performing General Building Maintenance

Task Number 64

Sharpen tools.

Definition

Sharpening should include

- selecting PPE, materials, and tools for sharpening tools (e.g., abrasive wheel, files)
- following the steps and procedures used to sharpen tools.

Process/Skill Questions

- What PPE should be used when sharpening bladed tools?
- What precautions should be taken when sharpening blades and tools?
- Why should abrasive wheels be checked for cracking and chipping?
- How do you check an abrasive wheel for cracking and chipping?

Task Number 65

Cut sheet metal.

Definition

Cutting sheet metal should include

- selecting PPE, equipment, and tools
- placing sheet metal on a flat surface
- laying out a desired pattern
- cutting along the line.

Process/Skill Questions
• What kinds of PPE and tools are needed to cut sheet metal?
• What precautions should be taken when cutting sheet metal?
• What are the various types and uses of sheet metal?

Task Number 66

Cut molding, using a power miter box.

Definition

Cutting molding should include

• selecting PPE, materials, and tools
• measuring and cutting the material to form the desired angle for closely fit corners.

Process/Skill Questions

• What are the relevant safety precautions/procedures to follow when using a miter box to cut molding?
• What type of PPE is required when using a miter box?
• How are the materials positioned in the miter box?
• What edge determines the length to be cut?

Task Number 67

Remove broken bolt.

Definition

Removal should include

• selecting PPE and tools
• securing the broken bolt
• center punching
• choosing the proper drill bit and extractor
• inspecting threads in the hole
• using the drill bit and extractor to remove the broken bolt.

Process/Skill Questions
• What are the relevant safety precautions/procedures to follow when removing a broken bolt?
• What type of PPE is required when removing a broken bolt?
• How do you determine the size of the bolt for correct replacement?

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**Task Number 68**

**Shorten bolt.**

**Definition**

Shortening should include

- selecting PPE and tools
- measuring and marking excess
- sawing with the correct blade
- beveling the edge without destroying threads.

**Process/Skill Questions**

- What type of PPE is required when shortening a bolt?
- What conditions might require a bolt to be shortened?
- What tools are required for shortening a bolt?

---

**Task Number 69**

**Replace butt hinge.**

**Definition**

Replacement should include

- selecting PPE, materials, and tools
- removing the hinge pin
- removing screws
- replacing with new hinge in position
- installing screws
- repeating with the second half of the hinge
- reinstalling the hinge pin.
Process/Skill Questions

- What conditions might justify the replacement of a door butt hinge?
- How can you determine if a butt hinge has been installed properly?

Task Number 70

Realign door.

Definition

Realignment should include

- selecting PPE, materials, and tools
- assessing the problem
- checking for loose hinges
- tightening screws or resetting hinges (if necessary)
- planing or shimming the edge of the door (if necessary).

Process/Skill Questions

- What are the relevant safety precautions/procedures for realigning a door?
- What PPE and tools are required to realign a door?
- What are some factors that can contribute to the need for realigning a door?

Task Number 71

Refinish an exterior door.

Definition

Refinishing an exterior door should include

- selecting PPE, materials, and tools
- placing a drop cloth
- removing loose paint
- sanding the exterior door
- spot priming
- applying a weatherproof finish.
Process/Skill Questions

- How do stains or the number of coats affect durability?
- How do weather conditions affect refinishing an exterior door?
- What type of finish should you apply to an exterior door?

Task Number 72

Refinish an interior door.

Definition

Refinishing an interior door should include

- selecting PPE, materials, and tools
- ensuring proper ventilation
- placing a drop cloth
- removing loose or chipped paint
- cleaning the area
- priming the spots
- applying the new finish.

Process/Skill Questions

- What are the relevant safety procedures/precautions to follow when refinishing interior doors?
- What PPE is required when finishing an interior door?
- What are the differences between refinishing interior doors and refinishing exterior doors?
- What are the masking procedures for interior doors?
- Why should the manufacturer's instructions be followed when refinishing interior doors?

Task Number 73

Replace screen in a door.

Definition

Replacement should include
• selecting PPE, materials, and tools
• removing the door from the opening, if necessary
• removing the molding or spline and the old screen
• measuring and cutting a new screen, allowing overlap
• installing and securing the new screen
• cutting excess.

Process/Skill Questions

• What PPE is required when replacing a screen in a door?
• What is the difference between replacing screen wire in a wood door and replacing screen wire in an aluminum door?
• What are the tools and materials required for replacing screen wire in an aluminum door? In a wood door?
• What is the significance of overlapping and stretching the screening material?

Task Number 74

Replace section of quarter-round or shoe molding.

Definition

Replacement should include

• selecting PPE, materials, and tools
• removing the old molding
• coping and nailing the new piece of molding
• setting nails.

Process/Skill Questions

• What are the relevant safety precautions/procedures to follow when replacing a section of shoe molding?
• What PPE and tools are needed when replacing a section of molding?
• What is coping? How is it performed?

Task Number 75

Replace section of cove molding.
Definition

Replacement should include

- selecting PPE, materials, and tools
- removing the old molding
- cleaning the surface
- applying adhesive and molding.

Process/Skill Questions

- What PPE and tools are needed when replacing a section of molding?
- What are the relevant safety precautions/procedures to follow when replacing a section of cove molding?

Task Number 76

Install resilient floor covering.

Definition

Installation should include

- selecting PPE, materials, and tools
- cleaning the floor
- removing the base molding
- patching damaged or low areas
- using a chalk line to find the center
- starting in the center of the room, laying tile
- gluing tile, working from center of the room to the outside.

Process/Skill Questions

- What are the PPE, tools, and materials required for the installation of resilient floor covering?
- What surface correction must be made prior to installing resilient floor covering?

Task Number 77

Replace ceramic tile.
Definition

Replacement should include

- selecting PPE, materials, and tools
- removing loose tile
- cleaning the wall or floor area and grout
- applying the adhesive
- replacing the grout, according to manufacturer's instructions
- cleaning the surface
- sealing the tile, if necessary.

Process/Skill Questions

- What are the relevant safety precautions/procedures to follow when replacing ceramic tile?
- What PPE, tools, and materials are required when installing ceramic tile?
- What are some conditions that cause ceramic tile to come loose from a given surface?

Task Number 78

Remove vinyl tile, using heat.

Definition

Removal should include

- selecting PPE, materials, and tools
- using a heat gun to apply heat to the tile until softened
- sliding a putty knife under the tile to pry it loose from floor
- scraping old adhesive from the surface.

Process/Skill Questions

- What are the relevant safety precautions/procedures to follow when removing vinyl tile, using heat?
- What PPE is necessary when removing vinyl tile, using heat?
- How does the application of heat work to remove tile?

Task Number 79
Describe procedures for installing floor coverings.

Definition

Description should include procedures for

- selecting PPE and tools
- selecting a floor covering
- installing the selected floor covering, using appropriate tools.

Process/Skill Questions

- What are the relevant safety precautions/procedures to follow when installing floor coverings?
- What PPE is necessary when installing floor coverings?
- How does the type of floor covering affect the tools and PPE required for installation?

Task Number 80

Demonstrate painting procedures.

Definition

Demonstration should include

- selecting PPE, materials, and equipment
- preparing the area to be painted
- selecting paint
- applying the paint according to manufacturer's instructions.

Process/Skill Questions

- What PPE and equipment are required when painting?
- Should the work area be ventilated when painting? Why, or why not?

Maintaining Walls

Task Number 81

Describe how to cut a hole in a masonry wall.
**Task Number 82**

**Spackle holes or cracks in plaster.**

**Definition**

Spackling should include

- selecting PPE
- identifying the necessary tools and materials (e.g., spackling knife, drywall tape, sandpaper)
- describing the procedures to repair a crack in a plaster surface, using spackling compound.

**Process/Skill Questions**

- What surface preparation should be performed before applying spackling compound?
- When should drywall tape be used?
- When should spackling not be used to fill cracks?
- What should be done once spackling is complete?

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**Task Number 83**

**Remove loose plaster.**

**Definition**
Removal should include

• selecting PPE, materials, and tools
• spreading a drop cloth
• scraping the surface
• scrubbing the surface, using a wire brush
• removing debris and dust.

Process/Skill Questions

• What are some safety precautions that should be followed when removing loose plaster?
• What are the tools and materials required for removing loose plaster?
• Should the work area be ventilated when removing loose plaster? Why, or why not?

Task Number 84

Repair structural cracks in plaster.

Definition

Repair should include

• selecting PPE
• selecting tools and materials (e.g., trowel, scraper, putty knife, plaster)
• mixing plaster according to manufacturer's instructions
• filling the cracks or holes in the plaster
• matching the texture to existing surface.

Process/Skill Questions

• What are the tools needed to repair structural cracks in plaster?
• How long should plaster set after application?

Task Number 85

Describe procedures for storing bagged cement and plaster.

Definition

Description should include
• identifying PPE, materials, and tools
• placing the bagged cement and plaster, neatly crisscrossed, on a platform in a dry, well-ventilated area.

Process/Skill Questions

• Why should cement and plaster be stored in a dry and well-ventilated place?
• How should cement and plaster be stacked? Why?
• What are the safety precautions for storing bagged cement and plaster?
• What potential physical hazards are associated with storing bagged cement and plaster?

Task Number 86
Replace section of drywall.

Definition

Replacement should include

• selecting PPE, materials, and tools
• removing the damaged section of drywall
• preparing the opening
• measuring and cutting the new section
• installing the new section
• finishing to match the existing surface.

Process/Skill Questions

• What tools are needed to replace a section of drywall?
• What work skills are necessary for drywall repairs?
• What are the safety procedures for replacing a section of drywall?

Maintaining Windows

Task Number 87
Replace broken glass.

Definition

Replacement should include
• selecting PPE, materials, and tools
• removing the window from the frame
• removing the old glass
• cleaning and preparing the sash
• measuring and cutting the new glass
• installing the glass and glazier points (or spring clips for metal sash)
• glazing the window.

Process/Skill Questions

• What are the relevant safety precautions/procedures to follow when replacing broken glass?
• What kind of protective equipment is needed to replace broken glass?
• What is the correct method for cutting glass?

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Task Number 88

Glaze window.

Definition

Glazing should include

• selecting PPE
• identifying the tools, materials, and safety procedures used in the process of glazing a window
• demonstrating the procedures used to glaze a window.

Process/Skill Questions

• What PPE should be used when glazing a window?
• What is the purpose of glazing points?
• How can unprimed wood affect the life of the new glaze?

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Task Number 89

Describe procedures for hanging drapes.

Definition
Description should include

- necessary PPE, materials, and tools
- various types of wall construction, anchor points, and hardware required to attach drapes
- procedures used to hang drapes.

Process/Skill Questions

- What is the importance of taking accurate measurements when hanging drapes?
- What is the purpose of a center support when hanging drapes?
- How does attachment to masonry walls differ from attachment to framed walls?

Demonstrating Electrical Maintenance of Buildings

Task Number 90

Lubricate an electrical motor.

Definition

Lubrication should include

- shutting off power to the motor
- checking the manufacturer's maintenance manual for lubrication points and recommended lubricant and amounts
- selecting the lubricants
- checking oil wells and grease cups
- filling the oil wells to half depth
- filling the grease cups if less than half empty
- screwing the grease cups down slightly, forcing grease into the bearings
- screwing the cups back to their original positions
- wiping the motor and motor parts clean of oil and grease
- turning on power to the motor
- checking performance.

Process/Skill Questions

- What are the relevant safety precautions/procedures for lubricating an electrical motor?
- What are the characteristics of different lubricating materials?
- What tools and materials are used for lubricating an electrical motor?
Task Number 91

Replace a defective electrical wall receptacle.

Definition

Replacement should include

- using lock-out and tag-out procedures
- verifying the power is off, using a tester
- replacing the receptacle
- reenergizing and testing the receptacle.

Process/Skill Questions

- What are the relevant safety precautions/procedures for replacing a defective electrical wall outlet?
- What factors might contribute to the need to replace a wall outlet?
- What tools and materials are required for replacing a wall outlet?

Task Number 92

Replace a defective light socket.

Definition

Replacement should include

- unplugging the lamp or fixture
- removing the bulb, shade, and harp
- separating the socket body and shell from the cap
- removing the terminal screws from the socket cap and removing wires
- screwing the new cap to the lampshade and tightening the set screw
- removing the socket from the new shell, leaving the cardboard insulation inside the shell
- loosening the terminal screws on the socket
- bending the loop on each wire and connecting one wire to each terminal screw
- putting the shell and cardboard insulator over the socket and snapping the shell into the socket cap.

Process/Skill Questions
- What are the relevant safety precautions/procedures for replacing and tightening a defective light socket?
- What factors may contribute to the development of defects in light sockets?
- What tools and materials are required for replacing a defective light socket?

### Task Number 93

**Replace a defective light switch.**

**Definition**

Replacement should include

- turning off power to the switch and removing the fuse controlling the switch
- tagging the fuse or breaker box, indicating someone is working on electrical system
- removing the cover plate
- removing the screws holding the switch to the box
- pulling the switch out of the box
- loosening the terminal screws and removing wires
- reattaching the new switch to same terminal wires, ensuring the loops are clockwise
- pushing the switch back into the box and fastening
- replacing the cover plate
- replacing the fuse and returning power
- checking to see if the switch works.

**Process/Skill Questions**

- What are the relevant safety precautions/procedures for replacing a defective light switch?
- What are the differences in the features of three-way and single-pole switches?
- What tools and materials are required for replacing a light switch?

### Task Number 94

**Replace the starter switch in fluorescent lights.**

**Definition**

Replacement should include
• turning off power to the light
• placing the stepladder, removing the shield
• removing the defective starter switch
• installing the new starter switch
• replacing the shield
• turning the light on and checking performance.

Process/Skill Questions

• What are the relevant safety precautions/procedures for replacing the starter switch in fluorescent lights?
• What are some factors which may account for a starter switch not functioning properly?
• What tools are used for replacing a starter switch?

Performing Plumbing Maintenance

Task Number 95

Cut metal tubing.

Definition

Cutting metal tubing should include the following steps:

• Assemble tools and equipment.
• Measure and mark the length to be cut.
• Place the tubing cutter wheel on the mark where tubing is to be cut.
• Tighten the blade against the tubing.
• Rotate the blade around the tube until the cutter rolls free.
• Tighten and roll until the tube is cut.
• Ream the cut ends to remove burrs, using appropriate PPE.

Process/Skill Questions

• What are the relevant safety precautions/procedures for cutting metal tubing?
• What are two basic types of metal tubing?
• What are the principal parts of the tubing cutter?
• Why must the cut ends be reamed when cutting metal tubing?

Task Number 96
Cut plastic tubing.

Definition

Cutting plastic tubing should include the following steps:

- Assemble tools and equipment.
- Measure and mark the length to be cut.
- Place a handsaw or hand cutters on the mark and cut.
- Ream the cut edge.

Process/Skill Questions

- What are the relevant safety precautions/procedures for cutting plastic tubing?
- What are the various types of plastic tubing?
- What tools are required for cutting plastic tubing?

Task Number 97

Sweat solder copper tubing.

Definition

Sweat soldering should include the following steps:

- Assemble tools and equipment.
- Cut tubing and ream ends.
- Clean the ends with sandpaper or steel wool.
- Clean the inside surface of the fitting.
- Flux the surface where the solder is to flow.
- Put the joint together.
- Heat the fitting and apply solder to the surface to be soldered.
- Wipe clean and let cool.

Process/Skill Questions

- What are the relevant safety precautions/procedures for sweat soldering copper tubing?
- What type of solder is used for plumbing? Why?
- What are some uses of sweat soldering copper tubing?
- What tools are required for sweat soldering?
**Task Number 98**

**Test soldering tank for gas leak.**

**Definition**

Testing should include the following steps:

- Assemble tools and equipment.
- Set tank in an upright position.
- Set the regulator on tank and hand tighten.
- Place the bypass valve in line.
- Tighten fittings, using a wrench.
- Put soapsuds on the fittings.
- Tighten loose fittings.

**Process/Skill Questions**

- What are the relevant safety precautions/procedures for testing a soldering tank for a gas leak?
- What tools are needed to test a soldering tank for a gas leak?
- What causes leaks to occur in a soldering tank system?

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**Task Number 99**

**Describe procedures for testing for a gas leak, using a soap solution.**

**Definition**

Description should include the following steps:

- Locate the gas meter and follow the entry lines to all exposed pipes.
- Ventilate the enclosed area.
- Turn off all electrical appliances.
- Mix a soap solution.
- Beginning with the outermost union, soap the first joint thoroughly.
- Mark each leaking joint with chalk.

**Process/Skill Questions**
• What are the relevant safety precautions/procedures for testing for a gas leak, using a soap solution?
• What causes a pipe joint to leak?
• What are some common fittings used in a black iron pipe system?
• What tools are required for working with black iron pipe?

Task Number 100

Describe procedures for installing plumbing fixtures (i.e., commode, urinal, lavatory, shower).

Definition

Description of procedures for installing a commode should include the following steps:

• Assemble tools and equipment.
• Install the closet flange by gluing to 3" PVC waste pipe.
• Insert the closet bolts into the collar.
• Place the wax ring seal over the commode collar.
• Place the commode assembly over the drain.
• Tighten the closet bolts.
• Connect the water supply line.
• Check for leaks and make adjustments.

Description of procedures for installing a urinal should include the following steps:

• Assemble tools and equipment.
• Check the location.
• Install the hangers, ensuring they are level.
• Hang the urinal on the hangers.
• Connect the trap.
• Connect the water.
• Check for leaks and adjust.

Description of procedures for installing a lavatory should include the following steps:

• Assemble tools and equipment.
• Mount sink brackets.
• Fit the lavatory into the brackets, sealing around the edges if the lavatory is to rest on a cabinet.
• Attach the lavatory to the rim.
• Coat the flange of pull-out plug with plumber's putty and set the plug in the lavatory.
• Coat the faucet flanges with plumber's putty and connect the faucets.
- Connect the water supply.
- Connect the drain line to the lavatory.
- Check for leaks and adjust.

Description of procedures for installing a shower should include the following steps:

- Assemble tools and equipment.
- Place thread-seal tape on the control valve heads and the shower pipe stub.
- Attach the shower head and valve to the shower pipe.
- Slide the escutcheon onto the shower pipe.
- Attach the shower pipe end to the roughed-in wall stub.
- Press the escutcheon against the wall covering hole and stub.
- Place the escutcheon over the water control valves and press against the wall.
- Attach the control valve handles with a screwdriver.
- Connect water and check for leaks.

Process/Skill Questions

- What are the relevant safety precautions/procedures for installing plumbing fixtures (i.e., commode, urinal, lavatory, shower)?
- Why is it important to handle porcelain and chrome fixtures with extreme care?
- What are the basic considerations for locating and installing a urinal?
- What precautions should be taken when working with chrome finishes?

Task Number 101

Install pipe-repair coupling.

Definition

Installation should include the following steps:

- Assemble tools and equipment.
- Clean both pieces of pipe on the ends being butted together.
- Slide the coupling onto the end of one pipe.
- Slide the end of the other pipe into the neoprene sleeve until tight against the end of the first piece of pipe.
- Slide steel bands onto the neoprene sleeve and tighten securely.

Process/Skill Questions

- What safety procedures should be followed when installing pipe-repair coupling?
- What is the function of pipe-repair coupling?
What tools are required for installing pipe-repair coupling?

Task Number 102

Install a sink trap connection (P-trap).

Definition

Installation should include the following steps:

- Assemble tools and equipment.
- Slide the slip nut onto the tail piece of the fixture.
- Slide the seal gasket onto the tail piece.
- Slide the trap fitting onto the tail piece.
- Slide the gasket down snug and straight against the trap fitting.
- Slide the slip nut down and hand tighten.
- Tighten the nut snugly with a pipe wrench.
- Repeat the above steps for the opposite end of fitting.

Process/Skill Questions

- What are the relevant safety precautions/procedures for installing a sink trap connection?
- What is the most common size of sink trap?
- What is the function of a sink trap connection?
- What tools are required for installing a sink trap connection?

Task Number 103

Install a sink trap connection (S-trap).

Definition

Installation should include the following steps:

- Assemble tools and equipment.
- Measure from the sink to the drain pipe.
- Select pipes.
- Place the S-trap into position and hand tighten the locknuts on both ends.
- Check for leaks.
Process/Skill Questions

- What is the function of an S-trap?
- What precautions should be taken when working with chrome-plated surfaces?
- What tools are required for installing an S-trap connection?

Task Number 104

Join copper tubing, using the compression method.

Definition

Joining copper tubing should include the following steps:

- Assemble tools and equipment.
- Read directions on the compression ring package.
- With treaded end facing fitting, slide the fitting onto the tubing.
- Slide the compression ring onto the end of the tubing.
- Slide the fitting onto the end of the tubing.
- Hold the fitting securely on the end of the tubing and slide the compression ring and nut up to the fitting.
- Turn clockwise to start.
- Tighten the nut.
- Repeat operations until the fitting is installed.

Process/Skill Questions

- What are the relevant safety precautions/procedures for joining copper tubing, using the compression method?
- Why is copper tubing used in various supply systems?
- Can a compression ring be reused? Why, or why not?
- What tools are required for joining copper tubing, using the compression method?

Task Number 105

Join copper tubing, using the flare method.

Definition

Joining copper tubing should include the following steps:
• Assemble tools and equipment.
• Slide the flare nut onto the tubing with the threaded end toward the fitting.
• Place the tubing in the flaring tool approximately 1/8".
• Slide the tapering tool into the base and tighten.
• Remove the flaring tool.
• Holding the fitting against the flare, slide the flare nut onto the fitting and hand tighten.
• Tighten the flare nut.

Process/Skill Questions

• What are the relevant safety precautions/procedures for joining copper tubing, using the flare method?
• How important is having the proper size flare when joining copper tubing? Why?
• Can all copper pipe be flared? Why, or why not?
• What tools are required for joining copper tubing, using the flare method?

Task Number 106

Form a pipe joint.

Definition

Forming a pipe joint should include the following steps:

• Assemble tools and equipment.
• Block joints off the floor or ground.
• Clean and apply pipe thread sealant or thread-seal tape to threads of the joint.
• Turn the pipe in a clockwise direction.
• Block up the second joint on the same level as the first and at the joint being made up, tighten with pipe wrenches, holding the first joint while turning the second.

Process/Skill Questions

• What are the relevant safety precautions/procedures for forming a joint of pipe?
• What situation would require thread-seal tape?
• What situation would require thread sealant paste?
• What are some characteristics of different kinds of pipe?
• What tools are required for making up a threaded pipe system?

Task Number 107
Describe procedures for repairing PEX water lines.

Definition

Description should include the following steps:

- Assemble tools and equipment.
- Cut and remove the damaged section of PEX pipe.
- Install repair coupling and clamps in the ends of the cut tubing.
- Crimp clamps tight, using a crimper.
- Check for leaks.

Process/Skill Questions

- What are the relevant safety precautions/procedures for working with PEX pipe?
- Where is PEX pipe used?
- What is a common size for PEX pipe?

Maintaining Interior and Exterior Upkeep

Task Number 108

Remove paint, using paint remover.

Definition

Removal should include

- selecting PPE, materials, and tools
- using paint remover to soften the finish so that it can be lifted with a scraper.

Process/Skill Questions

- What safety procedures should be followed when using paint removers?
- What is the significance of the warning label on the paint-remover container?
- How does cleanup differ for wet and dry paint-stripping methods?

Task Number 109

Install a window unit.
Definition

Installation should include the following steps:

- selecting PPE and tools
- following manufacturer's instructions for installation of the window unit.

Process/Skill Questions

- What are the relevant safety precautions/procedures for installing a window unit?
- What tools and materials are required for installing a window unit?

Task Number 110

Clean condensate line and trap on air conditioner.

Definition

Cleaning should include

- selecting PPE, tools, and equipment
- removing, cleaning, and replacing the condensate line and trap.

Process/Skill Questions

- What safety procedures should be followed when cleaning a condensate line and trap?
- What conditions could contribute to the need to clean the condensate line and trap?
- What tools and equipment are required when cleaning the condensate line and trap on an air conditioner?

Maintaining Grounds

Task Number 111

Demonstrate small-engine maintenance.

Definition

Demonstration should include

- implementing safety precautions prior to servicing
• locating and reviewing manuals or other documentation
• cleaning/replacing spark plugs
• cleaning/replacing air filters
• checking/changing oil and filter if necessary
• replacing fuel filter
• adjusting/cleaning the carburetor
• checking/cleaning the exhaust
• performing winterization procedures.

Process/Skill Questions

• Where can the model and serial number of an engine be found? Why is this information important?
• What is the purpose of a maintenance schedule for small engines?
• What is the difference between two-cycle and four-cycle engines?
• What are the benefits of two-cycle engines? What are the drawbacks?
• What are the benefits of fuel stabilizers?
• What can the condition and color of spark plug deposits indicate?
• What are the benefits of engine winterization?

Task Number 112

Maintain commercial grounds.

Definition

Maintenance should include selection of equipment and demonstration of procedures for care of

• lawns
• landscapes
• bushes and shrubs
• sidewalks

as well as seasonal care procedures.

Process/Skill Questions

• What are the safety concerns and procedures for maintaining commercial grounds?
• What are the differences between residential and commercial lawn care?
• What factors should be considered when selecting equipment for commercial grounds care?
• How is good lawn and shrub maintenance important to the security of commercial grounds?
Task Number 113

Plant shrubs and/or gardens.

Definition

Planting should include

- selecting tools
- testing soil and pH levels
- marking power, water, and sewer lines prior to planting
- growing plants from seed
- preparing root bulbs
- irrigating plants.

Process/Skill Questions

- Why are soil and pH tests necessary?
- What is the significance of underground obstacles?
- What is germination?
- Why is it important to have the correct amount of irrigation for new plants?

Task Number 114

Describe lawn mower blade-sharpening techniques.

Definition

Description should include

- necessary PPE and tools
- safety precautions
- procedures for sharpening blades
- procedures for balancing blades.

Process/Skill Questions

- What safety procedures should be followed when sharpening a lawn mower blade?
• What tools are used to sharpen lawn mower blades?
• When should a lawn mower blade not be sharpened?
• Why do lawn mower blades need to be sharpened?
• How do you balance a lawn mower blade?
• What are the effects of not balancing a blade?

---

**Task Number 115**

**Describe grass hook-sharpening techniques.**

**Definition**

Description should include

- necessary PPE and tools
- safety precautions
- procedures for sharpening.

**Process/Skill Questions**

- What safety procedures should be followed when sharpening a grass hook?
- What tools are used to sharpen a grass hook?
- What is the benefit of sharpening a grass hook?
- When should you not sharpen a grass hook?

---

**Task Number 116**

**Operate mowing, trimming, and grounds-care equipment.**

**Definition**

Operation should include

- selecting PPE
- wearing appropriate clothing
- performing a pre-operations check
- fueling the equipment
- starting the equipment
- using an appropriate operating speed
- following procedures for operating equipment on grades and slopes
shutting down the equipment.

**Process/Skill Questions**

- What is the difference between commercial and residential mowing equipment?
- What is the advantage of a self-propelled mower over a conventional push mower?
- What is the difference between edging and trimming?
- Why must operators be trained before operating any equipment?
- What is the best source of information on any piece of equipment?
- Why should grounds be surveyed before equipment use?
- What does ROPS stand for? What is its purpose?
- Why should hot equipment not be fueled?
- What direction should be used when mowing a grade with a push mower? Riding mower?

**SOL Correlation by Task**

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<td>Comply with federal, state, and local safety legal requirements, including OSHA, VOSHA, and EPA.</td>
<td>History and Social Science: GOVT.15 Science: BIO.1, CH.1</td>
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<td>Inspect and maintain a safe working environment.</td>
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<td>Identify PPE (personal protective equipment) requirements.</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>Inspect course-specific hand and power tools to visually identify defects.</td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>Demonstrate lifting and carrying techniques.</td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>Demonstrate safe laddering techniques.</td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>Demonstrate safe scaffolding techniques.</td>
<td></td>
</tr>
<tr>
<td>49</td>
<td>Report injuries.</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Report personal, environmental, and equipment safety violations to the appropriate authority.</td>
<td>English: 11.1, 11.5, 12.1, 12.5 History and Social Science: GOVT.15</td>
</tr>
<tr>
<td>51</td>
<td>Pass safety exam.</td>
<td></td>
</tr>
<tr>
<td>52</td>
<td>Demonstrate safety in the measuring and mixing of chemicals, including volatile chemicals (e.g., furniture and floor strippers, drain cleaners).</td>
<td>Science: CH.1</td>
</tr>
<tr>
<td>53</td>
<td>Demonstrate procedures to measure and mix chemicals, including volatile chemicals (e.g., furniture and floor strippers, drain cleaners).</td>
<td>Science: CH.4</td>
</tr>
<tr>
<td>54</td>
<td>Define chemical terminology related to building management.</td>
<td>English: 11.3, 12.3</td>
</tr>
<tr>
<td>55</td>
<td>Describe the use of a chemical-mixing station.</td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>Clean metal surfaces, using steel wool, wire brush, and solvent.</td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>Identify procedures for maintenance of various surfaces.</td>
<td></td>
</tr>
<tr>
<td>58</td>
<td>Demonstrate procedures used to clean locker rooms, including showers.</td>
<td></td>
</tr>
<tr>
<td>59</td>
<td>Demonstrate procedures used to maintain specialty floors.</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>Demonstrate advanced procedures used to care for carpets.</td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>Separate materials for recycling.</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>Clean walls.</td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>Deep clean upholstery.</td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>Sharpen tools.</td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>Cut sheet metal.</td>
<td></td>
</tr>
<tr>
<td>66</td>
<td>Cut molding, using a power miter box.</td>
<td>Mathematics: G.2</td>
</tr>
<tr>
<td>67</td>
<td>Remove broken bolt.</td>
<td></td>
</tr>
<tr>
<td>68</td>
<td>Shorten bolt.</td>
<td></td>
</tr>
<tr>
<td>69</td>
<td>Replace butt hinge.</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>Realign door.</td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>Refinish an exterior door.</td>
<td></td>
</tr>
<tr>
<td>72</td>
<td>Refinish an interior door.</td>
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</tr>
<tr>
<td>73</td>
<td>Replace screen in a door.</td>
<td></td>
</tr>
<tr>
<td>74</td>
<td>Replace section of quarter-round or shoe molding.</td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>Replace section of cove molding.</td>
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<tr>
<td>76</td>
<td>Install resilient floor covering.</td>
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</tr>
<tr>
<td>77</td>
<td>Replace ceramic tile.</td>
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<tr>
<td>78</td>
<td>Remove vinyl tile, using heat.</td>
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</tr>
<tr>
<td>79</td>
<td>Describe procedures for installing floor coverings.</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>Demonstrate painting procedures.</td>
<td></td>
</tr>
<tr>
<td>81</td>
<td>Describe how to cut a hole in a masonry wall.</td>
<td></td>
</tr>
<tr>
<td>82</td>
<td>Spackle holes or cracks in plaster.</td>
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<tr>
<td>83</td>
<td>Remove loose plaster.</td>
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<tr>
<td>84</td>
<td>Repair structural cracks in plaster.</td>
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</tr>
<tr>
<td>85</td>
<td>Describe procedures for storing bagged cement and plaster.</td>
<td></td>
</tr>
<tr>
<td>86</td>
<td>Replace section of drywall.</td>
<td></td>
</tr>
<tr>
<td>87</td>
<td>Replace broken glass.</td>
<td></td>
</tr>
<tr>
<td>88</td>
<td>Glaze window.</td>
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</tr>
<tr>
<td>89</td>
<td>Describe procedures for hanging drapes.</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>Lubricate an electrical motor.</td>
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</tr>
<tr>
<td>91</td>
<td>Replace a defective electrical wall receptacle.</td>
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<tr>
<td>92</td>
<td>Replace a defective light socket.</td>
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<tr>
<td>93</td>
<td>Replace a defective light switch.</td>
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<tr>
<td>94</td>
<td>Replace the starter switch in fluorescent lights.</td>
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<tr>
<td>95</td>
<td>Cut metal tubing.</td>
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</tr>
<tr>
<td>96</td>
<td>Cut plastic tubing.</td>
<td></td>
</tr>
<tr>
<td>97</td>
<td>Sweat solder copper tubing.</td>
<td></td>
</tr>
<tr>
<td>98</td>
<td>Test soldering tank for gas leak.</td>
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<tr>
<td>99</td>
<td>Describe procedures for testing for a gas leak, using a soap solution.</td>
<td></td>
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<tr>
<td>100</td>
<td>Describe procedures for installing plumbing fixtures (i.e., commode, urinal, lavatory, shower).</td>
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<tr>
<td>101</td>
<td>Install pipe-repair coupling.</td>
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<tr>
<td>102</td>
<td>Install a sink trap connection (P-trap).</td>
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<tr>
<td>103</td>
<td>Install a sink trap connection (S-trap).</td>
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<tr>
<td>104</td>
<td>Join copper tubing, using the compression method.</td>
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<tr>
<td>105</td>
<td>Join copper tubing, using the flare method.</td>
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</tr>
<tr>
<td>106</td>
<td>Form a pipe joint.</td>
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<tr>
<td>107</td>
<td>Describe procedures for repairing PEX water lines.</td>
<td></td>
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<tr>
<td>108</td>
<td>Remove paint, using paint remover.</td>
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<tr>
<td>109</td>
<td>Install a window unit.</td>
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<tr>
<td>110</td>
<td>Clean condensate line and trap on air conditioner.</td>
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<tr>
<td>111</td>
<td>Demonstrate small-engine maintenance.</td>
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</tr>
<tr>
<td>112</td>
<td>Maintain commercial grounds.</td>
<td></td>
</tr>
<tr>
<td>113</td>
<td>Plant shrubs and/or gardens.</td>
<td></td>
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<tr>
<td>114</td>
<td>Describe lawn mower blade-sharpening techniques.</td>
<td></td>
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<tr>
<td>115</td>
<td>Describe grass hook-sharpening techniques.</td>
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</tr>
<tr>
<td>116</td>
<td>Operate mowing, trimming, and grounds-care equipment.</td>
<td></td>
</tr>
</tbody>
</table>
Customer Service Infusion Units

Customer Service Infusion Units (CSIU) were designed to be infused with designated CTE courses to help students in those programs achieve additional, focused, validated tasks/competencies in customer service. These units are not mandatory, and, as such, the tasks/competencies are marked as "optional," to be taught at the instructor's discretion. Teachers can find the infusion/unit in the course listing.

Entrepreneurship Infusion Units

Entrepreneurship Infusion Units may be used to help students achieve additional, focused competencies and enhance the validated tasks/competencies related to identifying and starting a new business venture. Because the unit is a complement to certain designated courses and is not mandatory, all tasks/competencies are marked “optional.” Teachers can find the infusion/unit in the course listing.
Appendix: Credentials, Course Sequences, and Career Cluster Information

Industry Credentials: Only apply to 36-week courses

- Building Trades Maintenance Assessment
- College and Work Readiness Assessment (CWRA+)
- Customer Service Examination
- Customer Service Specialist (CSS) Examination
- ICC Certificates of Completion Examinations
- National Career Readiness Certificate Assessment
- Pre-Apprenticeship Certificate Training (PACT) Core Examinations
- Professional Communications Certification Examination
- Workplace Readiness Skills for the Commonwealth Examination

Concentration sequences: A combination of this course and those below, equivalent to two 36-week courses, is a concentration sequence. Students wishing to complete a specialization may take additional courses based on their career pathways. A program completer is a student who has met the requirements for a CTE concentration sequence and all other requirements for high school graduation or an approved alternative education program.

- Building Management I (8590/36 weeks, 140 hours)

Career Cluster: Architecture and Construction

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>Carpenter</td>
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<tr>
<td></td>
<td>Construction and Building Inspector</td>
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<tr>
<td></td>
<td>Construction Manager</td>
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<tr>
<td></td>
<td>Electrician</td>
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<td></td>
<td>General Contractor</td>
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<tr>
<td></td>
<td>Plumber, Pipefitter</td>
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<tr>
<td></td>
<td>Project Manager</td>
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<tr>
<td>Maintenance and</td>
<td>Carpenter</td>
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<tr>
<td>Operations</td>
<td>Construction and Building Inspector</td>
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<tr>
<td></td>
<td>Construction Manager</td>
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<td></td>
<td>Electrician</td>
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<td></td>
<td>General Contractor</td>
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<tr>
<td></td>
<td>Plumber, Pipefitter</td>
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<td></td>
<td>Project Manager</td>
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<td></td>
<td>Restoration Technician</td>
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<tr>
<td>Pathway</td>
<td>Occupations</td>
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<tr>
<td>Lodging</td>
<td>Environmental Specialist</td>
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<tr>
<td></td>
<td>Executive Housekeeper</td>
</tr>
<tr>
<td></td>
<td>Maintenance Supervisor</td>
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</tbody>
</table>