

Construction Craft Worker Level 1

Construction Craft Worker (CCW)

Unit: A1 Orientation I: The Structure and Scope of CCW Trade Learning

Level: One

Duration: 7 hours

Theory: 7 hours

Practical: 0 hours

Overview:

Jobsite learning and teaching have long been fundamental to CCW trade-practice, including its safety, health, and environmental implications. The chance to gain maximum benefit from workplace trade learning can be shaped by such complex factors as production schedules and jobsite politics. As adult trade-learners, CCW apprentices at all levels of skill-development are encouraged to use their eyes, ears, prior knowledge, and interpersonal skills to encourage journeypersons to teach as well as to supervise them. This requires understanding the trade's dynamics, including the roles and responsibilities that order jobsite activity. Unit content outlines the trade's skill-requirements and long-term career possibilities. It includes suggestions about trade-related learning styles/strategies. It also introduces the concept of skills stewardship, stressing the obligations that apprentices incur in learning from journeypersons to 'pay it forward' by assisting other newcomers who will follow them into the trade. The unit's purpose is to provide this essential information about learning to learn as a Manitoba Construction Craft Worker apprentice. Elsewhere in Technical training, senior apprentices explore the importance of learning to teach in trade workplaces – a central function of Construction Craft Worker journeywork.

| Objectives and Content: | <u>Percent of Unit Mark (%)</u> |
|---|--|
| 1. Describe the structure and scope of the trade. | 30% |
| a. Historical background, including apprentice experiences | |
| b. Structure/scope of the trade | |
| • International and national characteristics | |
| • Important features of practicing the trade in Manitoba | |
| • Trade and construction industry organizations | |
| • Generalists and specialists | |
| • Lead hands and other immediate supervisors | |
| • Geographic mobility | |
| • Job hierarchies and innovations | |
| 2. Describe the Manitoba Construction Craft Worker (CCW) Apprenticeship Program. | 40% |
| a. Concept and significance of skills stewardship | |
| • To the trade | |
| • To apprentices | |
| • To journeypersons | |
| • To employers | |
| b. Practical Training: on-site component of program | |

- Roles/responsibilities of employer and journeyperson(s)
- Roles/responsibilities of Training Coordinator
- Roles/responsibilities of apprentice, including record-keeping re: job experience
- c. Technical training: off-site component of program
 - Roles/responsibilities of instructors (including Related'-area faculty)
 - Roles/responsibilities of apprentices
- d. Attendance requirements
- e. Progression requirements
- f. Reporting of grades
- g. Other (as may be specified by instructor)

3. Describe special opportunities and challenges re: Construction Craft Worker training. 40%

- a. Adapting personal learning goals to program contexts
 - Principles of adult learning (including importance of self-direction)
 - Description/recognition of learning and teaching styles
 - Significance of work culture and interpersonal skills re: trade-learning
 - Integrating technical training and practical training content
 - Possibilities and perils of peer learning
 - Budgeting and other necessary personal arrangements
 - Identifying sources of support (e.g., upgrading trade-related math skills)
- b. On-site learning challenges and opportunities
 - Significance of jobsite supervision roles and teaching styles (e.g., journey-level skills-coach vs. mentor)
 - Communication with journeypersons and employers
 - Coverage of prescribed tasks/subtasks that define the scope of trade, and the content of the certification exam administered to apprentices who are completing their program
 - Getting help and fixing mistakes
 - Maintaining personal record of trade-learning challenges/achievements (e.g., a learning journal, and/or a personal training plan, if possible, discussed with employers and others supporting the apprenticeship journey to certification)
- c. In-school opportunities/challenges
 - Personal arrangements that support progress in technical training
 - “Baggage-handling” – self-assessing potential impacts of previous experiences (favourable/unfavourable) on current learning; availability of supports
 - Techniques for note-taking, record-keeping, and review
 - Relations with instructors (including 'Related'-area faculty)
 - College resources (library, support services, etc.)

Construction Craft Worker (CCW)

Unit: A2 Trade Safety Awareness

Level: One

Duration: 7 hours

Theory: 7 hours

Practical: 0 hours

Overview:

Safe working procedures and conditions, injury prevention, and the preservation of health are of primary importance to industry in Canada. These responsibilities are shared and require the joint efforts of government, employers, and employees. It is imperative that all parties become aware of circumstances that may lead to injury or harm. Safe learning experiences and environments can be created by controlling the variables and behaviours that may contribute to incidents or injury. It is generally recognized that safety-conscious attitudes and work practices contribute to a healthy, safe, and accident-free working environment. It is imperative to apply and be familiar with the Workplace Safety and Health Act and Regulations. As well, it's essential to determine workplace hazards and take measures to protect oneself, co-workers, the public, and the environment. Safety education is an integral part of Insulator apprenticeship training both in school and on-the-job. Unit content is supplemented throughout technical training by trade-specific information about Insulator safety hazards and precautions presented in the appropriate contexts of discussion and study.

Note: No percentage-weightings for test purposes are prescribed for this unit's objectives. Instead, a 'Pass/Fail' grade will be recorded for the unit in its entirety.

Objectives and Content:

Percent of Unit Mark (%)

1. Identify safety and health requirements.

n/a

- a. Overview of The Workplace Safety and Health Act
 - Rights and responsibilities of employees under the Act
 - Rights and responsibilities of employers under the Act
 - Rights and responsibilities of supervisors under the Act
- b. Fourteen (14) regulations
- c. Codes of practice
- d. Guidelines
- e. Right to refuse
 - Explanation of right to refuse process
 - Rights and responsibilities of employees
 - Rights and responsibilities of employers
 - Rights and responsibilities of supervisors under the Act

2. Identify personal protective equipment (PPE) and procedures.

- a. Employer and employee responsibilities as related to personal protective equipment.
- b. Standards: ANSI (U.S.A. standards), etc.
- c. Work protective clothing and danger if it fits poorly.

- d. Gloves – Importance of proper glove selection (when handling chemicals, cold items, slivers, etc.)
- e. Headwear – appropriate protective headwear when required and the approved type of headwear.
- f. Eye protection – comparison and distinction of everyday eyeglasses, industrial safety glasses and safety goggles
- g. Foot protection – when required according to safety standards
- h. Hearing protection
 - Hazards of various noise levels (hearing protection must be worn)
 - Laws
 - Types of hearing protection
- i. Respiratory protection – types, overview of proper selection
- j. Fall protection – Manitoba requirements standards guidelines
 - ANSI (U.S.A. standards), etc.
- k. Ladders and scaffolding
- l. Safety principles for working with or around industrial trucks site-specific (forklifts, pallet trucks, etc.)

3. Identify regulations pertinent to care and cleanliness in the working area.

4. Identify the regulations relevant to the safe use of chemicals.

5. Identify regulations governing the use of scaffolding.

6. Identify regulations governing the use of ladders and related equipment.

7. Identify ergonomics.

- a. Definition of ergonomics and conditions that may affect the body
 - Working postures
 - Repetition
 - Force
 - Lifting
 - Tools
 - Identify tool and safety equipment
 - Causes of hand tool accidents
 - equipment

8. Hazard recognition and control.

- a. Safe work practices
- b. Basic risk assessment
- c. Injury prevention and control measures
- d. Identification of hazards involved in pneumatic tool use and explanation of how to guard against them
- e. Refrigerants
- f. Toxic chemical (non-refrigerant)
- g. High pressure fluids

9. Hazard of confined space entry.

- a. Identification of a confined space
- b. Hazards of a confined space (including physical and biological hazards)
- c. Working in a confined space
- d. Emergency response plan
- e. Self-contained breathing apparatus (SCBA)

- 10. Identify first aid/CPR.**
- a. Overview of first aid regulation
 - b. Obligations of employers regarding first aid
 - Who is certified to provide first aid?
 - What to do while waiting for help?
 - Where is first aid kit?
 - c. Describe basic first aid requirements and techniques
 - Scope and limits of first aid intervention
 - Specific interventions (cuts, burns, abrasions, fractures, suffocation, shock, electrical shock, etc.)
 - What is it?
 - Interface with other services and agencies (e.g., Workers Compensation claims)
 - d. Describe basic CPR requirements and techniques
 - How do you get certified?
 - Scope and limits of CPR intervention (include varieties of CPR certification)
- 11. Identify the safety requirements as they apply to WHMIS with emphasis on:**
- a. WHMIS is a system
 - b. Provincial regulation under the Safety and Health Act
 - Each province has a WHMIS regulation
 - c. Federal Hazardous Products Act
 - d. WHMIS generic training:
 - WHMIS defined and the format used to convey information about hazardous materials in the workplace
 - Information found on supplier and workplace labeling using WHMIS
 - Hazardous materials in accordance with WHMIS
 - Compliance with government safety standards and regulations
 - e. Description of WHMIS (include varieties of WHMIS Certification)
 - Typology of WHMIS labels, symbols, and classifications
 - Scope and use of Materials Safety Data Sheets (MSDS)
- 12. Identifying and controlling hazards.**
- a. Basic control measures (injury prevention)
 - b. Safe work procedures
 - c. Explanation on the importance of industrial housekeeping
 - d. Employer responsibilities
 - e. How and where to store materials
 - f. Safety measures related to walkways, stairs and floor openings
 - g. Explanation of how to protect the worker and others when working in traffic paths
- 13. Describe the safe storage of stock equipment in service vehicles.**
- 14. Discuss transportation of dangerous goods.**

Construction Craft Worker (CCW)

Unit: B1 Math Applications in the CCW Trade

Level: One

Duration: 14 hours

Theory: 7 hours

Practical: 7 hours

Overview:

This unit of instruction is intended to help make the world of numbers and shapes work for, rather than against, the CCW apprentice. Content includes a brief review of basic math concepts and operations, but its major focus concerns applications in actual trade practice. Apprentices will extend their trade-math skills elsewhere in Technical training – for example, in preparing project estimates and layouts. The unit also includes up-to-date information about ‘math anxiety,’ and how it can be overcome. **Note:** Although this unit includes a review of math basics, and provides some tools for building skill and confidence in applying them, it is not a remedial math course. Unit content assumes a prior familiarity with math basics. Apprentices who might require upgrading in this area are strongly encouraged to consult with their Training Coordinator and/or their Instructor early in the program to identify suitable options and resources for math-skills upgrading where appropriate.

Objectives and Content:

Percent of Unit Mark (%)

- | | |
|--|-------------------|
| <p>1. Describe the practical importance of math disciplines to the CCW trade.</p> <ul style="list-style-type: none"> a. Definition and scope of relevant math disciplines b. Detailed examples <ul style="list-style-type: none"> • Plane geometry and calculating rates of coverage by materials (e.g., blankets; curing compound, etc.) • Ratio/proportion and technical drawing to scale • Other (specified by instructor) c. Time-sheets, wages, and personal budgeting d. Engineering of tools and equipment e. Manufacture and packaging of materials and products f. Trade documents g. Standards, codes, tolerances, and other specifications h. Computer technology/applications i. Design/technical drawing j. Estimation and bidding k. Project planning and monitoring l. Materials procurement, inventory, and optimization m. Machinery and equipment set-up n. Measurement and lay-out o. Temperatures, pressures, and other measured: properties of materials and tools p. Customer relations/perceptions (e.g., schedules, timetables, etc.) q. Business management | <p>30%</p> |
| <p>2. Describe “math anxiety” and its remedies.</p> | <p>5%</p> |

- a. Definition
- b. Recognition
- c. Options, resources, and techniques for overcoming math anxiety
- d. Other common problems
 - Importance of personal awareness of math strengths/learning needs
 - Importance of early resolution during term of apprenticeship
 - Options/resources for remedial math instruction and other assistance

3. Review general math concepts and use of electronic calculator 15%

- a. Basic operations
 - Addition
 - Subtraction
 - Multiplication
 - Division
 - Order of operations
 - Fractions and decimals
- b. Ratio and proportion
- c. Percentage calculations
- d. Constructing/solving simple equations
- e. Trigonometry functions
- f. Units of measure
 - Imperial
 - Metric (SI)
 - Conversion factors
- g. Calculator use
 - Basic operation keys/functions
 - Percentage keys/functions
 - Trig keys/functions
 - Keys/functions re: memory and constants

4. Perform trade-related calculations as specified by instructor. 50%

- a. Linear measurement
 - Rectangular/triangular dimensions
 - Radius/diameter/circumference
- b. Area and volume
 - Squares/rectangles
 - Triangles
 - Circles/cylinders
 - Irregular shapes
- c. Ratio/proportion
 - Ratios
 - Percentages
 - Rates
 - SI/Metric Units (including conversions)

Construction Craft Worker (CCW)

Unit: B2 Introduction to Technical Drawing and Construction-Project Design

Level: One

Duration: 21 hours

Theory: 14 hours

Practical: 7 hours

Overview:

Construction Craft Workers require a good, practical grasp of project design basics, as well as the ability to use technical drawings for a variety of trade tasks. Technical drawing is a medium for exploring built structures in detail, as well as a tool for developing new ideas and solving problems. This unit of instruction is the program gateway to further learning about construction-project design variations, technical drawing, and blueprint-reading skills. The unit also offers CCW apprentices a chance to apply some of the techniques, procedures, and conventions used in professional drafting and design. Elsewhere in technical training, apprentices will refine their skills in the use of trade documents through hands-on work with a variety of construction-project blueprints.

| Objectives and Content: | <u>Percent of Unit Mark (%)</u> |
|---|--|
| 1. Describe/demonstrate the major uses of technical drawing. | 10% |
| 2. Describe/demonstrate the major varieties of construction project-design using technical drawings. | 10% |
| 3. Describe/demonstrate use and selection of technical-drawing equipment/materials. | 10% |
| 4. Describe/demonstrate specified principles, conventions, and techniques for producing construction-project sketches and technical drawings. | 30% |
| 5. Design and sketch a construction-project component per instructor specifications | 40% |

Construction Craft Worker (CCW)

Unit: B3 Blueprint Use I: General Principles and Practices

Level: One

Duration: 21 hours

Theory: 14 hours

Practical: 7 hours

Overview:

Construction Craft Workers must use blueprints with ease and accuracy. As introduced earlier in technical training, using blueprints, drawings, and other trade documents requires learning to make sense of the special symbols, codes, terminology, and rules used to convey detailed information about construction projects. This unit offers further instruction and practice to help the apprentice refine skills in interpreting blueprints and technical documents for a variety of key purposes. These include achieving a deeper understanding of project details, and of conventions used throughout the construction industry. Other key purposes include using blueprints as an aid in organizing and coordinating work on project jobsites, and in developing take-offs and cut-lists. Unit content touches on all of these aspects of blueprint use in the CCW trade, with reference to such trade specialties as roadwork, concrete, masonry, and utilities projects. The unit includes opportunities to practice blueprint use by exploring a variety of instructor-specified detail drawings (e.g., plan views, isometric/cross-section views; expansion joints) and related documents. A companion unit applies this approach to blueprint use at a more-advanced level of training

| Objectives and Content: | Percent of Unit Mark (%) |
|--|-------------------------------------|
| 1. Describe the variety of blueprints used in the CCW trade. | 10% |
| 2. Describe the preparation and general use of construction blueprints. | 10% |
| 3. Demonstrate use of a wide variety of construction-project detail drawings to derive/verify information per instructor's specifications. | 50% |
| 4. Complete the Introductory Blueprint-Use Project per instructor's specifications. | 30% |

Construction Craft Worker (CCW)

Unit: C1 Construction Tools and Equipment: An Introduction

Level: One

Duration: 14 hours

Theory: 7 hours

Practical: 7 hours

Overview:

This unit introduces Construction Craft Worker apprentices to basic procedures for selecting, using, and maintaining tools and equipment in a variety of construction-project settings. The principles and practical methods introduced on this unit are pursued in greater depth and complexity throughout Technical training.

| Objectives and Content: | <u>Percent of Unit Mark (%)</u> |
|---|--|
| 1. Describe use, selection, and maintenance of hand tools by Construction Craft Workers. | 10% |
| 2. Demonstrate basic techniques for hand-tool selection, use, and maintenance. | 30% |
| 3. Describe the selection, use, and maintenance of power tools/equipment. | 15% |
| 4. Demonstrate basic techniques for power tools/equipment selection, use, and maintenance as specified by instructor. | 45% |

Construction Craft Worker (CCW)

Unit: C2 Modern Construction Materials

Level: One

Duration: 7 hours

Theory: 7 hours

Practical: 0 hours

Overview:

This unit offers a general overview of the remarkable range of construction materials with which Construction Craft Workers routinely work. CCWs not only work with some of the most ancient of building materials, but they also use relatively new products (e.g., refractory work) that require special knowledge and techniques. Unit content approaches these natural and prefabricated/proprietary products with particular attention to their manufacture, special characteristics, preferred uses, and relative cost. Content includes the classification and dimensioning systems used in estimating, ordering, and installing them. The employability, productivity, and usefulness of CW skills depends significantly upon these tradeworkers' working knowledge of these materials. Other units provide further instruction on using and applying the materials introduced here. The unit helps familiarize apprentices with construction material in general, while alerting them to new materials and practices which they might not have encountered yet in their on-the-job practical training.

| Objectives and Content: | <u>Percent of Unit Mark (%)</u> |
|---|--|
| 1. Compare/contrast natural and manufactured construction materials in general. | 30% |
| 2. Describe the manufacture, selection, and use of construction materials for concrete and roadwork projects. | 45% |
| 3. Describe the manufacture, selection, and use of construction materials for utilities projects. | 25% |

Construction Craft Worker (CCW)

Unit: D1 Concrete Products and Projects: An Overview

Level: One

Duration: 7 hours

Theory: 7 hours

Practical: 0 hours

Overview:

This unit of instruction introduces concrete – a major domain of CCW apprenticeship -- from several perspectives. The unit serves as a program gateway to further instruction concerning key practical and theoretical topics regarding concrete and concrete products on CCW jobsites.

| Objectives and Content: | <u>Percent of Unit Mark (%)</u> |
|---|--|
| 1. Describe the major varieties and uses of concrete and concrete products. | 30% |
| 2. Describe significant standards, tests, and other requirements for ensuring the structural integrity of concrete and concrete products. | 20% |
| 3. Describe the key processes and activities for utilizing concrete and concrete products in modern construction industry practice. | 50% |

Construction Craft Worker (CCW)

Unit: D2 Concrete Formwork Essentials

Level: One

Duration: 35 hours

Theory: 14 hours

Practical: 21 hours

Overview:

This unit of instruction introduces the inspection, maintenance, installation and set-up practices associated with the forming of concrete.

| Objectives and Content: | <u>Percent of Unit Mark (%)</u> |
|---|--|
| 1. Describe general procedure for the on-site transport, shoring, set-up, maintenance, stripping, dismantling, and salvage of concrete forms and form-components. | 30% |
| 2. Compare and contrast significant varieties of concrete forms (e.g., slab ceilings/floors), including their construction and preferred application. | 20% |
| 3. Demonstrate procedure for erecting, placing, and stripping/dismantling instructor-specified types of concrete formwork (e.g., fly-forms, grade beams, walls, slab floors/ceilings, curbs, etc.). | 50% |

Construction Craft Worker (CCW)

Unit: D3 Placement and Curing of Concrete

Level: One

Duration: 35 hours

Theory: 14 hours

Practical: 21 hours

Overview:

Unit content increases apprentice-knowledge about the variety and significance of Construction Craft Worker practices associated with concrete projects. Having acquired the essentials for forming, attention here turns to such procedures as the mixing, transporting, placing, finishing, and curing of concrete. Unit content also includes valuable information about the use of sealants and installed components in a wide variety of instructor-specified project contexts. The unit also helps apprentices prepare for further challenges in their senior level, when they have opportunities to expand knowledge to include skills for repairing and modifying concrete structures.

| Objectives and Content: | <u>Percent of Unit Mark (%)</u> |
|--|--|
| 1. Describe general procedures for the on-site transport, placing, finishing, curing-control, and sealing of concrete. | 20% |
| 2. Compare/contrast and explain instructor-specified variation in jobsite procedures for placement and curing of concrete (e.g., bridge-building, caisson projects, cinderblock-wall forms etc.), | 20% |
| 3. Describe special hazards and precautions re: concrete placement and curing. | 10% |
| 4. Demonstrate procedures for mixing, colouring, placing, finishing, curing, and sealing concrete, both with and without the installation of instructor-specified components such as dowels, plates, water-stops, etc. | 50% |

Construction Craft Worker (CCW)

Unit: E1 Roadwork Projects and Practices: An Overview

Level: One

Duration: 14 hours

Theory: 14 hours

Practical: 0 hours

Overview:

This unit of instruction introduces the CCW trade's practices in the field of roadwork construction projection with special reference to the range, technical requirements, and precautions associated with this large and indispensable domain of construction-labouring activity.

| Objectives and Content: | <u>Percent of Unit Mark (%)</u> |
|--|--|
| 1. Describe the major roadwork project-types, and compare/contrast the CCW trade-practices associated with each. | 15% |
| 2. Describe key roadwork-project material requirements (e.g., culverts, barriers, stringline, paving materials, etc.) and procedures including survey, grading, compaction, maintenance/repair, and traffic control. | 60% |
| 3. Describe special hazards and precautions associated with roadwork projects. | 25% |

Construction Craft Worker (CCW)

Unit: E2 Roadwork Project Survey and Layout

Level: One

Duration: 28 hours

Theory: 14 hours

Practical: 14 hours

Overview:

The cost, scale, and social/economic importance of roadwork projects is reflected in the sophistication and care associated with the survey and lay-out work these projects demand. This unit of instruction provides a practical overview of the procedures and key considerations involved in this dimension of roadwork practices as they effect the requirements of CCW activity on roadwork project jobsites.

| Objectives and Content: | <u>Percent of Unit Mark (%)</u> |
|---|--|
| 1. Describe/demonstrate procedures for roadwork-project survey and layout, including stringline installation, equipment monitoring, and verifying compliance with project specifications. | 30% |
| 2. Demonstrate use of technical drawings and roadwork project blueprints to help identify instructors-specified hazards and precautions such as those involving location of culverts, light standards, sewers, etc. | 30% |
| 3. Demonstrate procedure for verifying elevations, including the use of survey equipment and benchmarks. | 40% |

Construction Craft Worker (CCW)

Unit: E3 Roadwork Grading, Compaction, and Allied Practices

Level: One

Duration: 14 hours

Theory: 7 hours

Practical: 7 hours

Overview:

This unit of instruction introduces key procedures, materials, and safety precautions associated with the practical completion of roadwork projects.

| Objectives and Content: | <u>Percent of Unit Mark (%)</u> |
|---|--|
| 1. Describe general requirements re: procedures, materials, and equipment associated with roadwork-project grading and compaction. | 10% |
| 2. Describe special hazards and precautions associated with roadwork grading and compaction practices | 10% |
| 3. Demonstrate procedure for selecting, placing, modifying, compacting, and grading roadwork materials. | 35% |
| 4. Demonstrate procedure for installing instructor-specified roadwork project components, including barriers, signage, and culverts. | 20% |
| 5. Describe/demonstrate detailed procedure for performing traffic-related duties associated with the design and use of traffic control plans. | 25% |

Construction Craft Worker (CCW)

Unit: F1 Heavy-Equipment Communications and Coordination

Level: One

Duration: 14 hours

Theory: 7 hours

Practical: 7 hours

Overview:

This unit of instruction explores the CCW jobsite from the viewpoint of the several communication systems – spoken, written, visual, and technological – and the workplace social relationships which order it. Participants are encouraged to develop a deeper but also practical appreciation of the importance of communication skills to ensure the safety and efficiency of their trade. The unit includes basic instruction on the use of hand signals and two-way radios, and lays the groundwork for more advanced training involving teamwork and documentation skills, with special reference to heavy-equipment operations. Although the unit is not primarily concerned with remedial reading needs, some instruction is offered regarding the cognitive and communicative requirements involved in the effective use of manuals and other common types of trade-related technical materials.

Objectives and Content:

**Percent of
Unit Mark (%)**

- | | |
|---|-----|
| 1. Describe job requirements that relate to communications, including traffic-related practices. | 5% |
| 2. Describe and demonstrate hand signals. | 25% |
| 3. Describe and demonstrate radio communications. | 10% |
| 4. Describe and demonstrate basic reading strategies for using and interpreting technical literature. | 25% |
| 5. Describe and demonstrate jobsite practices to help coordinate and support heavy equipment operations (e.g., digging, sloping, etc.). | 35% |

Construction Craft Worker (CCW)

Unit: G1 Jobsite Preparation and Maintenance

Level: One

Duration: 14hours

Theory: 7 hours

Practical: 7 hours

Overview:

Unit content describes the major requirements and practices involved in preparing and maintaining modern construction jobsites for safe, intense productive activity. CCWs play an important role in achieving this purpose though their responsibilities for handling materials, establishing and cleaning site facilities, setting up equipment and temporary structures, as well as carrying out demolition assignments and safety watches. Typically, these duties support CCWs' own on-site work, but they also contribute significantly to the efforts of other trades and technical personnel. The unit is supplemented in the program by instruction concerning such topics as scaffolding, materials handling, and specialties including masonry projects which entail involve correspondingly specialized jobsite-maintenance requirements.

| Objectives and Content: | <u>Percent of Unit Mark (%)</u> |
|--|--|
| 1. Describe the general aspects of CCW responsibility for preparing, organizing, maintaining, and restoring jobsites (E.G., TOOL-CRIB). | 5% |
| 2. Describe specific aspects of CCW responsibilities for site-clearing, demolition, site facilities set-up, and piling installation, including particular reference to safety-related concerns. | 20% |
| 3. Describe/demonstrate specific aspects of CCW responsibilities for performing groundwork -- including shoring, excavations, backfilling, compaction, etc. -- with particular reference to safety-related concerns. | 30% |
| 4. Describe/demonstrate specific aspects of CCW responsibilities for ongoing maintenance activities including housekeeping, materials abatement, and environmental protection methods. | 10% |
| 5. Describe/demonstrate CCW responsibilities for establishing temporary site-amenities and systems such as lighting, heating, hoardings, and access structures, including particular reference to safety-related concerns. | 30% |
| 6. Describe general procedures and precautions associated with on-site transport, handling, and rigging of materials as specified by instructor. | 5% |

Construction Craft Worker (CCW)

Unit: G2 Scaffolding and Access Structures

Level: One

Duration: 28 hours

Theory: 14 hours

Practical: 14 hours

Overview:

The subject of scaffolding and access structures is fundamental to the safe and productive performance practice of construction work. It is closely bound up with a complex array of technological and regulatory issues, as well as with highly specific issues involving particular tasks, project characteristics, and rigorous safety precautions. The hazards and materials of the CCW trade make it mandatory that all trainees achieve a sound working knowledge of scaffolding and access structures. This unit of instruction provides an overview of essential information about access structure equipment and practical techniques, with a special emphasis upon safety and regulatory concerns. Unit content includes important guidance about the selection, fall-protection equipment, as well as procedures for the erecting, inspecting, disassembling and storing access structure components. Because the use of scaffolds is so closely related to tradework involving rigging and hoisting, the unit also includes information about this dimension as well.

Objectives and Content:

**Percent of
Unit Mark (%)**

- | | |
|--|-----|
| 1. Compare and contrast the varieties of scaffolding and access structures. | 15% |
| 2. Describe/demonstrate the selection and use of fall-protection equipment. | 25% |
| 3. Describe/demonstrate the use of ladders, ramps/runways, and temporary stairs. | 20% |
| 4. Describe/demonstrate the selection, use, and maintenance of scaffolding. | 25% |
| 5. Describe/demonstrate inspection and hoisting procedures re: scaffolding. | 15% |
