Carpenter
Level 4

Rev. September 2017

Apprenticeship Manitoba

Carpenter

Unit: A10 Project Planning

Level: Four

Duration: 35 hours

Theory: 35 hours

Practical: 0 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge of the procedures used to plan and organize projects.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Define terminology associated with project planning.	**5%**
2. Interpret information pertaining to project planning found on drawings and specifications.	**25%**
3. Identify sources of information relevant to project planning. a. Documentation • Specifications • Codes and regulations • Reference materials • Safety manuals b. Drawings c. Related professionals/other trades d. Clients	**10%**
4. Identify considerations for project planning. a. Hazard and environmental assessment b. Human resources c. Barrier free/accessibility d. Qualified tradespeople e. Tools and equipment f. Materials g. Lead times h. Waste management i. Permits and documentation j. Site conditions k. Weather/seasonal conditions l. Budget/cost control	**10%**

5. Describe the procedures used to plan project tasks. **7%**

a. Scheduling
b. Estimating

6. Describe the procedures used to organize and store tools, equipment and materials on-site. **5%**

7. Explain how changes in workplace documents impact project requirements. **8%**

a. Requests for information
b. Change orders
c. Engineers' reports

8. Identify factors to consider when developing alternate plans to account for changes in project requirements. **5%**

9. Demonstrate the ability to extract information from project drawings and specifications to produce production schedules and materials' take-off lists. **25%**

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Unit: A11 Renovation-Specific Carpentry

Level: Four

Duration: 35 hours

Theory: 35 hours

Practical: 0 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge of the procedures used to renovate existing structures.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Define terminology associated with renovation activities.	**2%**
2. Identify hazards and describe safe work practices pertaining to renovation activities.	**5%**
3. Interpret codes, regulations, engineers' documents and information found on drawings and specifications pertaining to renovation activities.	**6%**
4. Identify tools and equipment used when performing renovation activities, and describe their applications and procedures for use.	**5%**
5. Explain the effects of adding, removing or modifying the layout of structural components.	**5%**
6. Identify the considerations when performing barrier-free/accessible renovation activities.	**4%**
7. Explain the importance of conserving historical buildings.	**2%**
8. Identify materials and components and those that can be reused, recycled and reclaimed in the renovation process. a. Hazardous b. Non-hazardous	**6%**
9. Identify destructive and non-destructive methods of identifying and assessing condition of existing structures.	**5%**
10. Identify considerations and procedures used in performing demolition and removing existing materials. a. Protecting structures, surfaces and people • Hoarding • Shoring	**20%**

- Underpinning
- Separations
- Heating/ventilation/lighting

b. Isolating utilities
c. Containing and abating materials
d. Cataloguing location of materials
e. Reclaiming/reusing materials
f. Disposing of materials

11. Identify considerations and procedures used in joining new construction to existing structures. **20%**

a. Compatibility of materials
b. Jurisdictional requirements and standards
c. Structural integrity between new and existing
d. Transitioning for aesthetic purposes
e. Historical building conservation requirements

12. Identify the considerations when making changes to existing structures. **20%**

a. Increasing energy efficiency
b. Relocation of structural and non-structural components
c. Condition of existing structural and non-structural support
   - Rot/mold
   - Damage
   - Hazardous materials
   - Not compliant with current codes
   - Differential movement
d. Load bearing wall requirements
e. Historical building conservation requirements

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Unit: D5 Roof Framing III

Level: Four

Duration: 35 hours

Theory: 14 hours

Practical: 21 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge of components, accessories and materials used to lay out and frame special roofs, and of the procedures used to lay out and frame special roofs.

Objectives and Content:	Percent of Unit Mark (%)
1. Define terminology associated with special roofs.	**5%**
2. Identify hazards and describe safe work practices pertaining to special roofs.	**5%**
3. Interpret codes, regulations and information found on drawings and specifications pertaining to special roofs.	**8%**
4. Identify tools and equipment used in the construction of special roofs, and describe their applications and procedures for use.	**2%**
5. Identify types of special roofs and describe their characteristics and applications. a. Gambrel b. Mansard c. Polygon d. Flat e. Deck designated as a low slope roof	**10%**
6. Identify framing components, accessories and materials for special roofs, and describe their purpose, characteristics and applications.	**10%**
7. Calculate dimensions associated with special roof layout.	**20%**
8. Calculate material needed to frame a special roof.	**10%**
9. Demonstrate the procedures to lay out and frame a special roof.	**30%**

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Unit: F3 Stairs III

Level: Four

Duration: 35 hours

Theory: 14 hours

Practical: 21 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge of geometric stairs, their characteristics and applications, and of the procedures used to lay out, construct and install geometric stairs.

Objectives and Content:	Percent of Unit Mark (%)
1. Define terminology associated with geometric stairs.	**7%**
2. Identify hazards and describe safe work practices pertaining to geometric stairs.	**3%**
3. Interpret codes, regulations and information found on drawings and specifications pertaining to geometric stairs.	**10%**
4. Identify tools and equipment pertaining to geometric stairs, and describe their applications and procedures for use.	**2%**
5. Identify types of geometric stairs and describe their characteristics and applications. a. Winders b. Curved/spiral	**8%**
6. Identify components of geometric stairs, and describe their purpose and applications. a. Balustrades b. Treads and risers c. Stringers d. Handrails	**10%**
7. Describe the procedures used to lay out, construct and install geometric stairs and their components.	**15%**
8. Calculate dimensions associated with geometric stairs.	**15%**
9. Demonstrate the procedures to lay out, construct and install geometric stairs.	**30%**

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Unit: F8 Flooring and Floor Coverings

Level: Four

Duration: 7 hours

Theory: 4 hours

Practical: 3 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge of flooring and floorcoverings, their characteristics and applications, and of the procedures used to remove and install flooring and floorcoverings, and to install access flooring.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Define terminology associated with flooring and floorcoverings.	**6%**
2. Identify hazards and describe safe work practices pertaining to flooring and floorcoverings.	**5%**
3. Interpret codes, regulations, manufacturers' specifications and information found on drawings and specifications pertaining to flooring and floorcoverings.	**8%**
4. Identify tools and equipment used with flooring and floorcoverings, and describe their applications and procedures for use.	**5%**
5. Identify types of flooring and describe their characteristics and applications. a. Access flooring b. Specialty flooring • Sports floors • Terrazzo	**10%**
6. Identify types of floorcoverings and their components, accessories, materials and coatings, and describe their characteristics and applications. a. Tile b. Wood strip c. Laminate d. Sheet products	**8%**
7. Identify types of underlayment and describe their characteristics and applications. a. Plywood sheathing b. Cement boards c. Isolation mats d. Membranes	**10%**

8. Explain the effect of contraction and expansion on flooring and floorcoverings. 5%

9. Describe the procedures used to prepare floor surface for the installation of floorcoverings. 10%

a. Checking moisture content of substrates
b. Acclimatization of products and materials
c. Applying leveling compounds

10. Describe the considerations in and procedures used to select, remove and install flooring, floorcoverings and access floors. 10%

11. Calculate components, accessories, materials and coatings needed to lay out and install flooring and floorcoverings. 13%

12. Demonstrate the procedures to remove and install flooring and floorcoverings. 10%

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Unit: G1 Orientation II: The Job of Journeywork

Level: Four

Duration: 14 hours

Theory: 14 hours

Practical: 0 hours

Overview:

This unit introduces senior apprentices to the responsibilities of workplace teaching that they will take on as supervising journeypersons. Experienced tradeworkers can share valuable skills with new apprentices. This unit orients senior apprentices to strategies that help them to share their trade knowledge when they themselves become certified journeypersons. The ability to offer support to apprentices is an important area of trade learning. This unit presents material intended to help refine this ability through reflection and discussion by senior apprentices and dialogue with their instructor. Delivery of this content will vary with the discretion of individual instructors and with the experiences senior apprentices bring to the process.

Objectives and Content:	**Percent of Unit Mark (%)**

1. Describe the scope, substance, and significance of journey-level status. **20%**

a. Historical background, including trainee experiences
- Definition and examples of journey-level status
- Obligations to employers, trade clients, and apprentices
- Responsibilities of journeyperson as workplace trainer/supervisor
- Trends

b. Regulations of journeyperson in designated trades
- Manitoba provincial requirements [e.g. *Apprenticeship and Trades Qualifications Act; General Regulation*; the *Carpenter Trade Regulation*; relevant policies of the Apprenticeship and Trades Qualifications Board of Manitoba]
- Trade-specific requirements re: Practical Training supervision and documentation; quality assurance and coverage of content; ratios

2. Describe the responsibilities of the supervising journeyperson. **20%**

a. Recognizing the variety of supervision assignments, situations, and roles
b. Standards and content: training goals and assessment
c. Scope of expectations regarding supervisory tasks
d. Formal vs. informal structure – e.g. supervision is part of assignment; apprentice is trained according to a Training Plan negotiated with employer
e. Common supervisory roles:
- Coach role: is often initiated by someone other than apprentice and limited to a particular skill set or task
- Mentor role : often initiated by apprentice, and relatively open-ended regarding content, duration, etc.
- Peer role: involves individual upgrading of one journeyperson by another; can

include senior apprentice assisting less-experienced trade learner
- Managerial role: hire/fire issues as lead-hand or site-boss
- Coordinator role: often a senior-level journeyperson appointed by an organization to assume responsibilities for monitoring progression of groups of apprentices

f. Clarifying roles and expectations

g. Role of Apprenticeship Training Coordinator (ATC), Manitoba Apprenticeship Branch

h. Resources for developing skills and knowledge on providing journey-level supervision
- Books and journals (not always trade-specific)
- Websites
- Conversation with trade instructors, journeypersons, and peers
- Workshops

3. Describe common requirements in providing journey-level supervision. 20%

a. Review Unit A1 content on the challenges and opportunities of Apprenticeship learning adapted to journey-level supervision assignments
- Application of adult education concepts to trade teaching/learning
- Practical significance of 'styles' of adult learning and teaching
- Helping apprentices to integrate Technical Training (in school) and Practical Training (on-the-job) learning experiences
- Providing help and guidance on new tasks and skills and fixing mistakes
- Learning/teaching "the ropes" – socialization of learner within a trade community
- Coverage of prescribed tasks and subtasks (NOA or POA)
- Consultation with Apprenticeship Training Coordinator (ATC)
- Communicating with apprentices and employers about supervision assignments
- Maintaining personal record of achievements, ideas, needs as a workplace trainer

b. Individual reflection and guided group discussion re: personal experiences of workplace learning as an apprentice
- Identification of best and worst practices of supervising journeypersons
- Assessment of personal experiences in supervising, coaching, or guiding other people to learn or improve their skills compared with the journey-level support of apprenticeship learning
- Development of personal standards in sharing knowledge and with others in workplace

c. Compare discussions with current knowledge on workplace skills coaching methods as they relate to journey-level supervision assignments
- Qualities of a good workplace coach
- Recommended practices in workplace coaching
- Troubleshooting problems in supervision assignments

4. Complete Modules 1 to 3, *Workplace Coaching Skills* (or equivalent). See: *TEACHING AND LEARNING Workplace Skills* at the following link: 20%
http://apprenticeship.nscc.ca/mentoring/Mentoring.Course.Steps.pdf

a. Identifying purpose of the lesson: role of coach

b. Linking the lesson: learner needs

c. Demonstration of skill/task to be learned: demonstration, hands-on, recap

5. Complete Modules 1 to 3, *Workplace Coaching Skills* (or equivalent). See: *TEACHING AND LEARNING Workplace Skills* at the following link: 20%
http://apprenticeship.nscc.ca/mentoring/Mentoring.Course.Steps.pdf

a. Practice of skill/task to be learned
- Types of practice
- Reinforcing skill/task learning

b. Providing feedback to the learner
- Types of feedback

c. Assessment

- Assessing level of skill
- Planning further steps toward skill/task mastery

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Unit: G2 Pre-certification Review

Level: Four
Duration: 119 hours
Theory: 119 hours
Practical: 0 hours

Overview:

This unit offers apprentices a review of the skills and knowledge required to pass the Inter-Provincial *Carpenter* Theory Examination.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Discuss format and content of the Carpenter certification exam. a. National Occupational Analysis • NOA "Pie Chart" and its relationship to content distribution of examination items	**10%**
2. Identify resources, strategies and other considerations for maximizing successful completion of written exams. a. Personal preparedness • Self assessment of individual strengths/weaknesses in trade-related skills and knowledge • Approved textbooks • Study groups	**10%**
3. Review program content in *Common Occupational Skills*.	**12%**
4. Review program content in *Trade Math, Planning and Layout*.	**12%**
5. Review program content in *Concrete*.	**12%**
6. Review program content in *Framing.*	**12%**
7. Review program content in *Exterior Finish.*	**12%**
8. Review program content in *Interior Finish*.	**12%**
9. Develop a review plan.	**8%**