**Course Description:**

Students will engage in the introductory skills utilized in working with various wood construction materials. They will l earn to use basic measuring tools, hand tools and machines, common to the wood industry, to construct basic projects. Additionally, students will examine various wood construction materials and their properties. Throughout the course, students will learn components of site and personal safety.

**Strand 1. Business Operations/21st Century Skills**

Learners apply principles of economics, business management, marketing and employability in an entrepreneur, manager and employee role to the leadership, planning, developing and analyzing of business enterprises related to the career field.

**Outcome 1.1. Employability Skills**

Develop career awareness and employability skills (e.g., face‐to‐face, online) needed for gaining and maintaining employment in diverse business settings.

**Competencies**

1.1.1. Identify the knowledge, skills and abilities necessary to succeed in careers.

1.1.2. Identify the scope of career opportunities and the requirements for education, training,

certification, licensure and experience.

1.1.3. Develop a career plan that reflects career interests, pathways and secondary and

postsecondary options.

1.1.4. Describe the role and function of professional organizations, industry associations and

organized labor and use networking techniques to develop and maintain professional

relationships.

1.1.5. Develop strategies for self‐promotion in the hiring process (e.g., filling out job applications,

résumé writing, interviewing skills, portfolio development).

1.1.6. Explain the importance of work ethic, accountability and responsibility and demonstrate

associated behaviors in fulfilling personal, community and workplace roles.

1.1.7. Apply problem‐solving and critical‐thinking skills to work‐related issues when making decisions

and formulating solutions.

1.1.8. Identify the correlation between emotions, behavior and appearance and manage those to

establish and maintain professionalism.

1.1.9. Give and receive constructive feedback to improve work habits.

1.1.10. Adapt personal coping skills to adjust to taxing workplace demands.

1.1.11. Recognize different cultural beliefs and practices in the workplace and demonstrate respect

for them.

1.1.12. Identify healthy lifestyles that reduce the risk of chronic disease, unsafe habits and abusive

behavior.

**Outcome 1.2. Leadership and Communications**

Process, maintain, evaluate and disseminate information in a business. Develop leadership and team building to promote collaboration.

**Competencies**

1.2.1. Extract relevant, valid information from materials and cite sources of information.

1.2.2. Deliver formal and informal presentations.

1.2.3. Identify and use verbal, nonverbal and active listening skills to communicate effectively.

1.2.4. Use negotiation and conflict‐resolution skills to reach solutions.

1.2.5. Communicate information (e.g., directions, ideas, vision, workplace expectations) for an

intended audience and purpose.

1.2.6. Use proper grammar and expression in all aspects of communication.

1.2.7. Use problem‐solving and consensus‐building techniques to draw conclusions and determine

next steps.

1.2.8. Identify the strengths, weaknesses and characteristics of leadership styles that influence

internal and external workplace relationships.

1.2.9. Identify advantages and disadvantages involving digital and/or electronic communications

(e.g., common content for large audience, control of tone, speed, cost, lack of non‐verbal

cues, potential for forwarding information, longevity).

1.2.10. Use interpersonal skills to provide group leadership, promote collaboration and work in a

team.

1.2.11. Write professional correspondence, documents, job applications and resumés.

1.2.12. Use technical writing skills to complete forms and create reports.

1.2.13. Identify stakeholders and solicit their opinions.

1.2.14. Use motivational strategies to accomplish goals.

**Outcome 1.3. Business Ethics and Law**

Analyze how professional, ethical and legal behavior contributes to continuous improvement in organizational performance and regulatory compliance.

**Competencies**

1.3.1. Analyze how regulatory compliance affects business operations and organizational

performance.

1.3.2. Follow protocols and practices necessary to maintain a clean, safe and healthy work

environment.

1.3.3. Use ethical character traits consistent with workplace standards (e.g., honesty, personal

integrity, compassion, justice).

1.3.4. Identify how federal and state consumer protection laws affect products and services.

1.3.5. Access and implement safety compliance measures (e.g., quality assurance information, safety

data sheets [SDSs], product safety data sheets [PSDSs], United States Environmental

Protection Agency [EPA], United States Occupational Safety and Health Administration

[OSHA]) that contribute to the continuous improvement of the organization.

1.3.6. Identify deceptive practices (e.g., bait and switch, identity theft, unlawful door‐to‐door sales,

deceptive service estimates, fraudulent misrepresentations) and their overall impact on

organizational performance.

1.3.7. Identify the labor laws that affect employment and the consequences of noncompliance for

both employee and employer (e.g., harassment, labor, employment, employment interview,

testing, minor labor laws, Americans with Disabilities Act, Fair Labor Standards Acts, Equal

Employment Opportunity Commission [EEOC]).

1.3.8. Verify compliance with computer and intellectual property laws and regulations.

1.3.9. Identify potential conflicts of interest (e.g., personal gain, project bidding) between personal,

organizational and professional ethical standards.

**Outcome 1.4. Knowledge Management and Information Technology**

Demonstrate current and emerging strategies and technologies used to collect, analyze, record and share information in business operations.

**Competencies**

1.4.1. Use office equipment to communicate (e.g., phone, radio equipment, fax machine, scanner,

public address systems).

1.4.2. Select and use software applications to locate, record, analyze and present information (e.g.,

word processing, e‐mail, spreadsheet, databases, presentation, Internet search engines).

1.4.3. Verify compliance with security rules, regulations and codes (e.g., property, privacy, access,

accuracy issues, client and patient record confidentiality) pertaining to technology specific to

the industry pathway.

1.4.4. Use system hardware to support software applications.

1.4.5. Use information technology tools to maintain, secure and monitor business records.

1.4.6. Use an electronic database to access and create business and technical information.

1.4.7. Use personal information management and productivity applications to optimize assigned

tasks (e.g., lists, calendars, address books).

1.4.8. Use electronic media to communicate and follow network etiquette guidelines.

**Outcome 1.5. Global Environment**

Evaluate how beliefs, values, attitudes and behaviors influence organizational strategies and goals.

**Competencies**

1.5.1. Describe how cultural understanding, cultural intelligence skills and continual awareness are

interdependent.

1.5.2. Describe how cultural intelligence skills influence the overall success and survival of an

organization.

1.5.3. Use cultural intelligence to interact with individuals from diverse cultural settings.

1.5.4. Recognize barriers in cross‐cultural relationships and implement behavioral adjustments.

1.5.5. Recognize the ways in which bias and discrimination may influence productivity and

profitability.

1.5.6. Analyze work tasks for understanding and interpretation from a different cultural perspective.

1.5.7. Use intercultural communication skills to exchange ideas and create meaning.

1.5.8. Identify how multicultural teaming and globalization can foster development of new and

improved products and services and recognition of new opportunities.

**Outcome 1.12. Cyber Hygiene**

Apply digital information security principles to keep information secure.

**Competencies**

1.12.1. Identify the purpose and practices of Cyber Hygiene.

1.12.2. Differentiate between appropriate and inappropriate information.

1.12.3. Interpret security policies through job specific training and training updates.

1.12.4. Apply secure password behavior.

1.12.5. Apply physical and virtual situational awareness (e.g., clean desk policies, shoulder surfing, social engineering, tailgating).

**Strand 2. Safety, Tools and Equipment**

Learners apply principles of protection, prevention and mitigation to create and maintain safe working conditions at construction sites. Knowledge and skills may be applied in all aspects of personal site safety to meet all applicable standards.

**Outcome: 2.1. Site Safety**

Handle materials, prevent accidents and mitigate hazards.

**Competencies**

2.1.1. Use Occupational Safety and Health Administration (OSHA) defined procedures for identifying

employer and employee responsibilities, working in confined spaces, managing worker safety

programs, using ground fault circuit interrupters (GFCIs), maintaining clearance and boundaries

and labeling.

2.1.2. Identify and rectify or mitigate construction hazards (e.g., thresholds, slippery surfaces, lighting and workplace clutter).

2.1.6. Identify the source of electrical hazards and use shutdown and established lock-out/tag-out

procedures.

2.1.7. Identify and eliminate worksite clutter in accordance with standards for cleanliness and safety.

2.1.10. Select and operate fire extinguishers based on the class of fire.

**Outcome: 2.2. Personal Safety**

Practice personal safety in construction.

**Competencies**

2.2.1. Interpret personal safety rights according to the employee Right‐to‐Know plan.

2.2.2. Describe how working under the influence (e.g., drugs, alcohol and stimulants/caffeine) increases the risk of accident, lowers productivity, raises insurance costs, and reduces profits.

2.2.3. Select, use, store, maintain and dispose of personal protective equipment (PPE) appropriate

to job tasks, conditions and materials.

2.2.4. Identify workplace risk factors associated with lifting, operating and moving heavy objects and establish an ergonomics process.

2.2.5. Identify, inspect and use safety equipment appropriate for the task.

2.2.6. Demonstrate first aid and cardiopulmonary resuscitation (CPR).

2.2.7. Identify and describe hazards associated with using electronic devices on the job site.

2.2.8. Identify and describe hazards associated with improper clothing and poor hygiene.

2.2.9 Describe trenching and excavation hazards (e.g. soil types, cave in, utilities, underground obstacles).

2.2.10 Describe the process for identifying and locating existing site utilities.

**Strand 3. Structural Construction**

Learners apply the principles of architectural engineering to erect residential, commercial and industrial buildings. Knowledge and skills may be applied in constructing footings and foundations; framing floors, walls, ceilings, roofs and stairs; completing exterior and interior finishes; and repairing, restoring or remodeling existing structures.

**Outcome: 3.5. Floor Framing**

Install floor framing systems.

**Competencies**

3.5.1. Identify, describe, and assemble materials for floor framing.

3.5.4. Lay out, cut and install floor joists.

3.5.7. Install subflooring using adhesives and fasteners.

**Outcome: 3.6. Wall Framing**

Wall and ceiling framing.

**Competencies**

3.6.1. Identify platform and balloon framing.

3.6.2. Lay out walls and rough openings.

3.6.3. Compare and contrast metal and wood framing.

3.6.4. Locate partitions, determine stud layout and strike wall lines.

3.6.6. Cut and assemble wood and metal wall framing components (e.g., corner posts, T‐posts, door openings, window openings, headers, cripples, king studs, trimmers, common studs, blocking).

3.6.8. Brace exterior walls and install wind bracing.

3.6.10. Lay out, cut, and install ceiling joists and bracing.

**Outcome 3.7. Roof Framing and Finishing**

Construct and finish roof.

**Competencies**

3.7.1. Compare roof types and materials.

3.7.8. Install prefabricated roof trusses with required hardware.

3.7.11. Lay out and install shingles and other roof finishes (e.g., fiberglass, asphalt, wood, valley material, felt paper, starter strip, hip and ridge caps).

**Outcome: 3.8. Exterior Finish Work**

Complete exterior finish.

**Competencies**

3.8.7. Case exterior openings.

**Outcome: 3.10. Interior Finish Work**

Complete interior finish for residential, industrial and commercial facilities.

**Competencies**

3.10.3. Describe the effects insulation, vapor barriers and ventilation can have on controlling moisture.

3.10.12. Apply finish coatings (e.g., paint, stains, varnishes, texturing, wallpaper).

3.10.13. Install baseboard and moldings (e.g., standard, crown, built-up moldings).

**Outcome: 3.11. Remodeling**:

Repair, restore, or remodel existing structures.

**Competencies**

3.11.1. Identify customer needs and develop a plan for a remodeling or restoration project.

**Outcome: 6.1. Construction Math**:   
 Apply math and measurement principles to complete construction projects.

**Competencies**

6.1.1. Calculate surface area and volume for three‐dimensional objects, accurate to a specified level of precision.

6.1.2. Apply measurement scales to layout length, width, and angle measurements.

6.1.5. Select and use measurement tools (i.e., grade rod, ruler, tape measure, measuring cups, builder's level).

6.1.6. Perform calculations and conversions with fractions, decimals, and percentages.

6.1.7. Perform unit conversions.