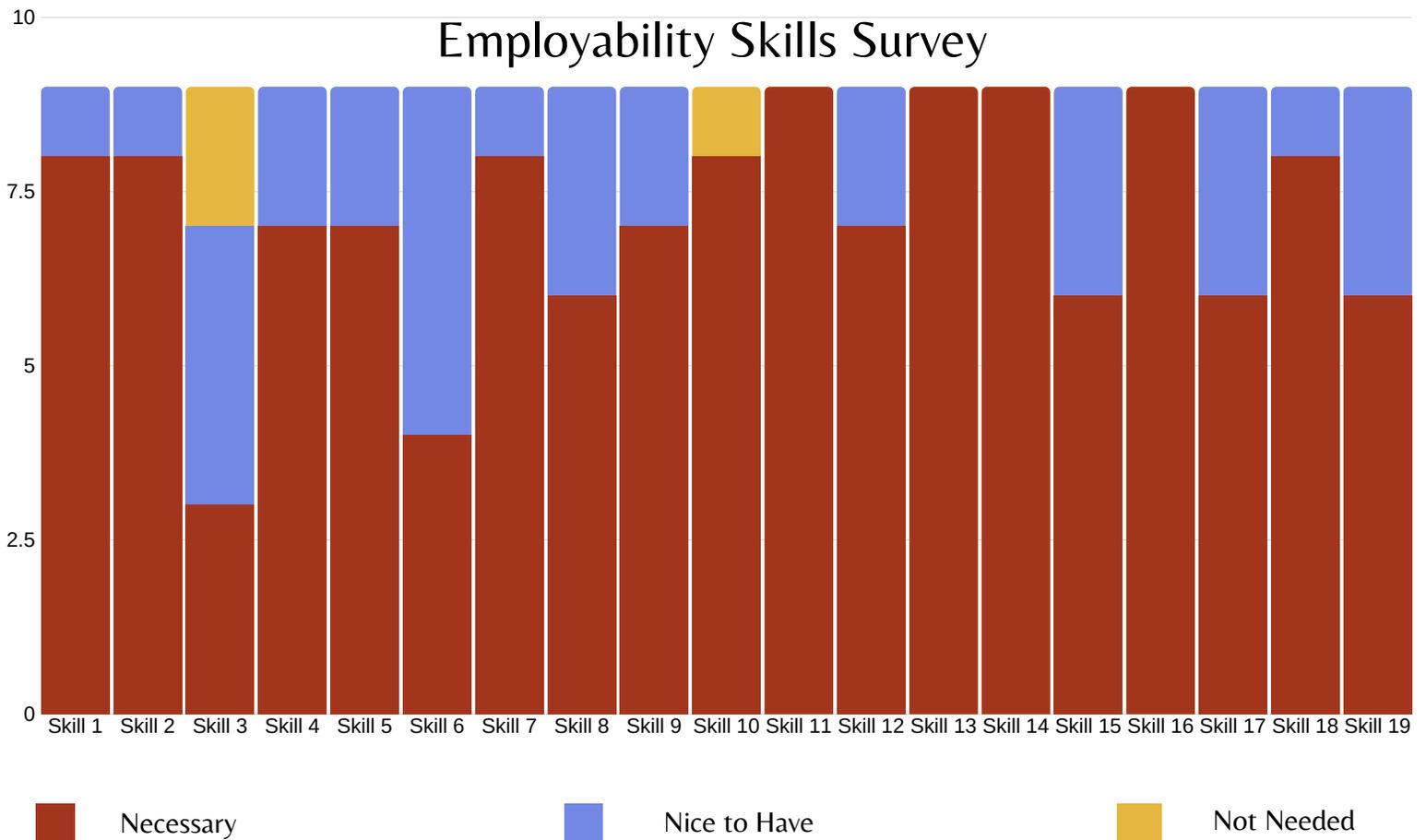


Energy, Construction and Utilities



1. Identify barriers to accurate and appropriate communication.
2. Interpret verbal and nonverbal communications and respond appropriately.
3. Communicate information and ideas effectively to multiple audiences using a variety of media and formats..
4. Identify and ask significant questions that clarify various points of view to solve problems.
5. Solve predictable and unpredictable work-related problems using various types of reasoning as appropriate.
6. Use systems thinking to analyze how various components interact with each other to produce outcomes in a complex work environment.
7. Interpret information and draw conclusions, based on the best analysis, to make informed decisions.
8. Demonstrate how to prevent and respond to work-related accidents or injuries; this includes demonstrating an understanding of ergonomics.
9. Interpret policies, procedures, and regulations for the workplace environment.
10. Use health and safety practices for storing, cleaning, and maintaining tools, equipment, and supplies.
11. Maintain proper use of safety apparel at all times, including but not limited to, eye protection, hearing protection, skin protection, head protection, footwear and protection from airborne particulate matter.
12. Explain the importance of accountability and responsibility in fulfilling workplace roles.
13. Practice time management and efficiency to fulfill responsibilities.
14. Demonstrate the qualities and behaviors that constitute a positive and professional work demeanor, including appropriate attire for the profession.
15. Access, analyze, and implement quality assurance standards of practice.
16. Demonstrate ethical and legal practices consistent with the Building and Construction trades workplace standards.
17. Identify the characteristics of successful teams, including leadership, cooperation, collaboration, and effective decision-making skills.
18. Understand the characteristics and benefits of teamwork, leadership, and citizenship in the workplace setting.
19. Respect individual and cultural differences and recognize the importance of diversity in the workplace.

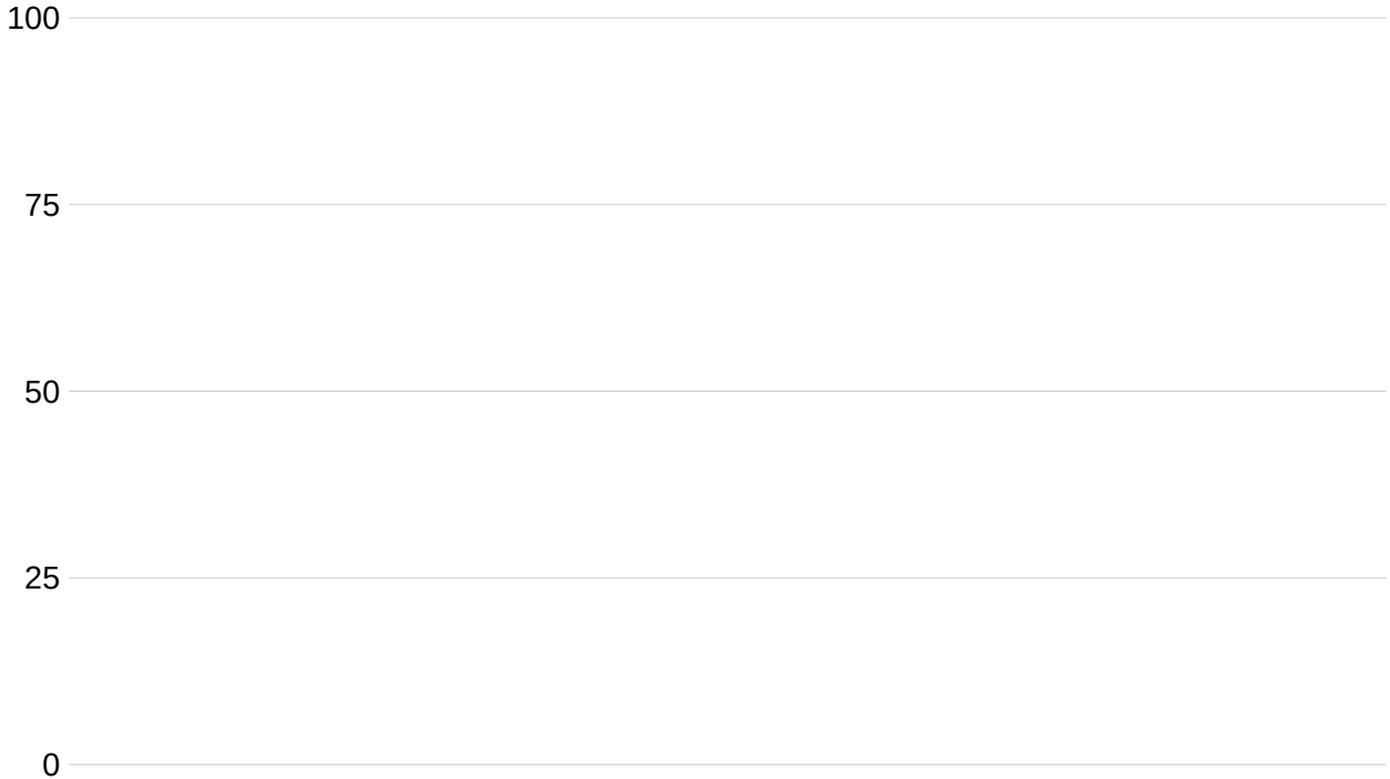
Energy, Construction and Utilities

Employability Skills Survey

Additional Comments

- Punctuality. You need to be on time always.
- An individual who possesses both average technical ability and average social skills and who is productive makes for an excellent employee.
- Managing expectations and personalities (client, contractor, consultant, team, etc.) while being able to successfully manage conflicts that may arise amongst the team.

Cabinetry, Millwork, and Woodworking

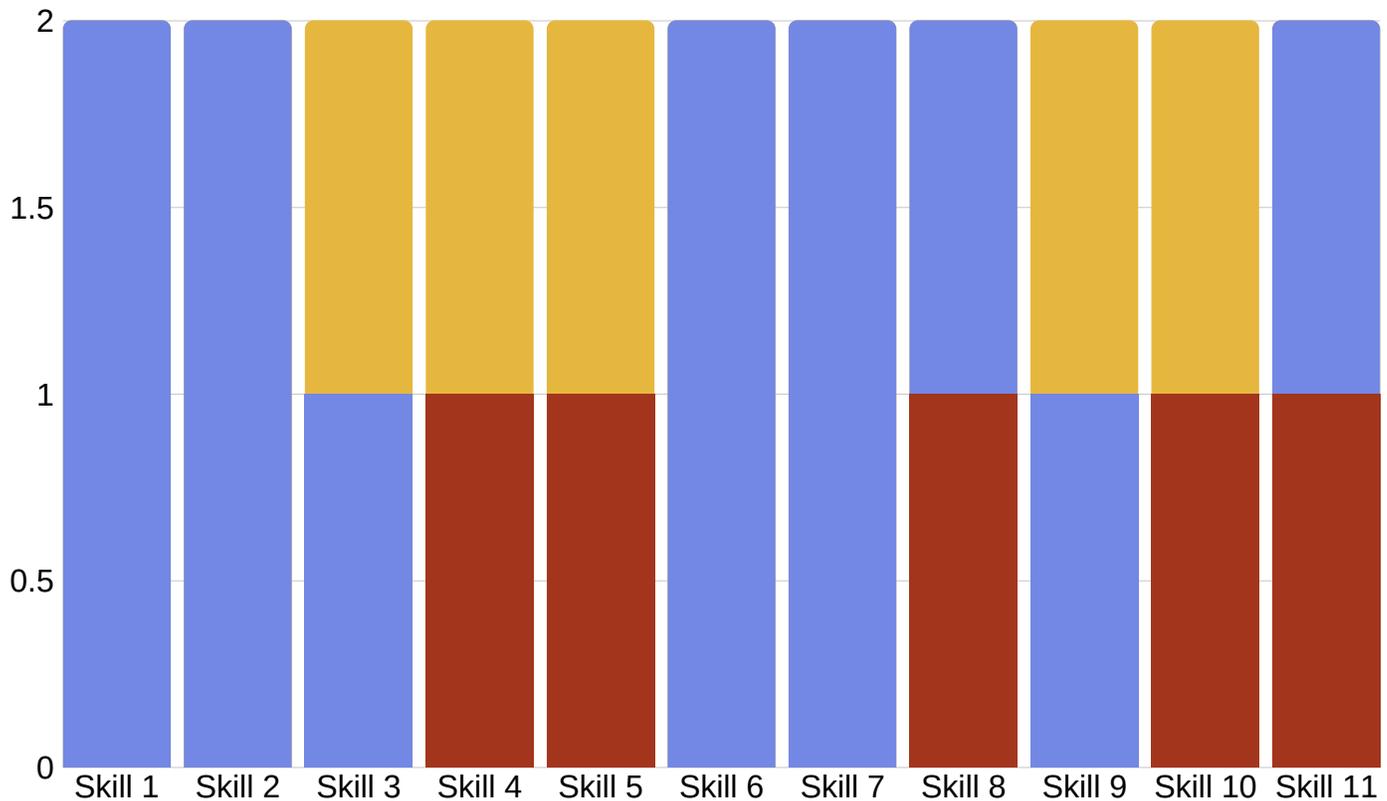


 Necessary  Nice to Have  Not Needed

1. Demonstrate competence in planning, design, layout, and technical drawing interpretation for practical use in cabinetmaking and millworking.
2. Differentiate between the various furniture and cabinet styles used in the cabinet and furniture industry.
3. Interpret and apply information to develop a bill of materials, estimate the cost of materials, and develop a plan of procedures to complete a project.
4. Demonstrate proper selection and use of woodworking tools.
5. Identify wood products and materials used in the furniture and cabinetmaking industry and describe their characteristics and uses.
6. Compare and contrast the advantages and disadvantages of using laminates verses using veneers.
7. Demonstrate competence in various construction processes in the cabinetmaking, furniture making, and millworking industries.
8. Utilize appropriate abrasives to prepare a project for a specific finish.
9. Understand finishes and when to apply paint, stains, sealers, varnishes, and catalyzed finishes, including water and oil-based finishes.
10. Demonstrate proper techniques for cabinet installation.
11. Identify the advantages and disadvantages for various countertop materials.

No Additional Comments

Energy and Power Technology

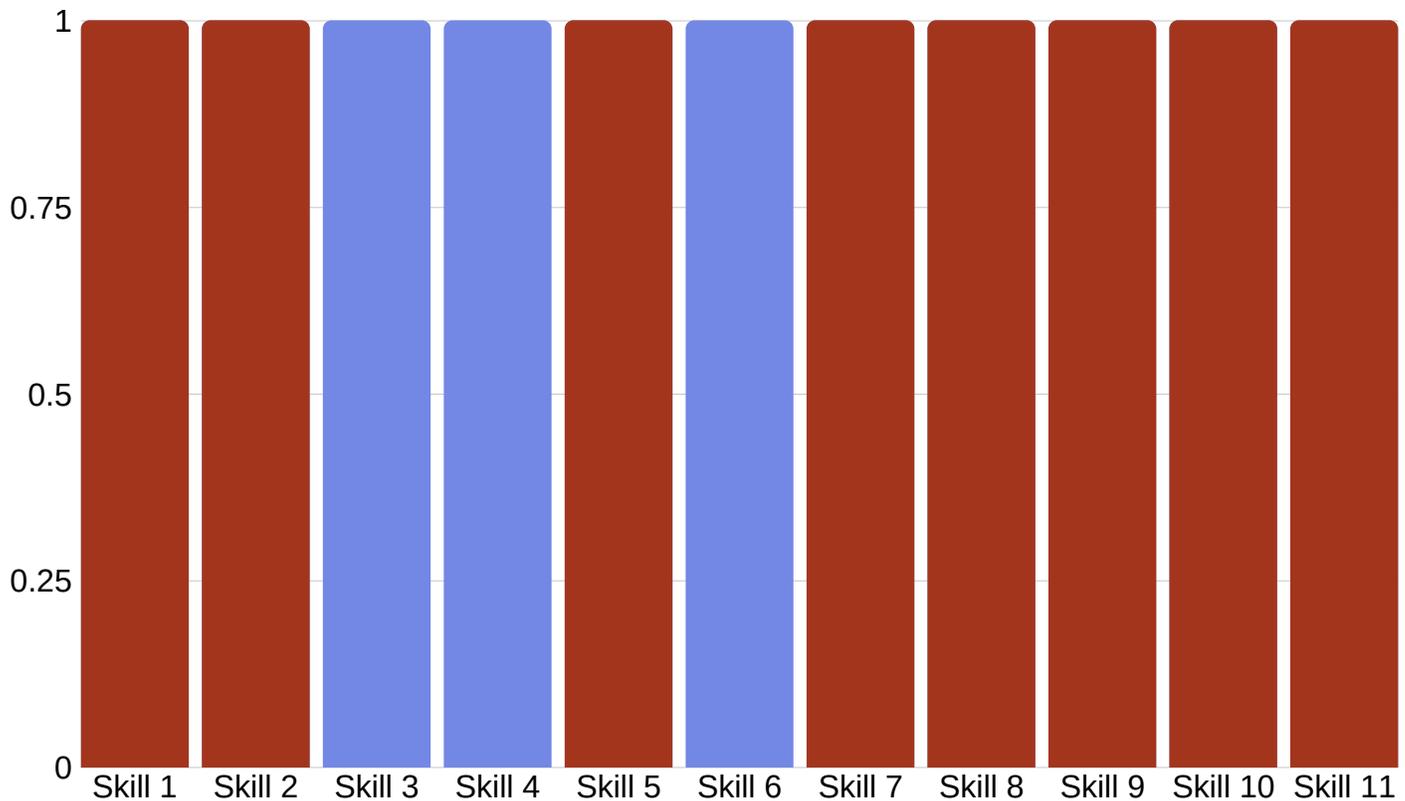


 Necessary  Nice to Have  Not Needed

1. Explain the flow of energy from generation through distribution to the customer.
2. Explain the role of regulatory bodies in the energy industry (Federal Energy Regulatory Commission, Public Utilities Commission [PUC]).
3. Identify various conventional electric power generation fuel sources and the cost and efficiency issues associated with each.
4. Identify emerging and alternative electric power generation technologies and fuel sources.
5. Discriminate the differences and similarities of power generation, including use of different fuel types and different power plant uses.
6. Summarize the basic operating principles of fossil, hydroelectric, and internal combustion systems.
7. Use the fundamental concepts associated with electricity (e.g., electric charge, electric current).
8. Operate, repair, and test machines, devices, and equipment based on electrical or mechanical principles in order to diagnose machine malfunctions, using basic hand and small electric tools and equipment.
9. Describe the electric power transmission principles and processes.
10. Define and explain voltage, current, resistance, power, and energy.
11. Measure voltage, amperage, and resistance using a volt-ohm meter (VOM) and a digital volt-ohm meter (DVM).

No Additional Comments

Engineering and Heavy Construction

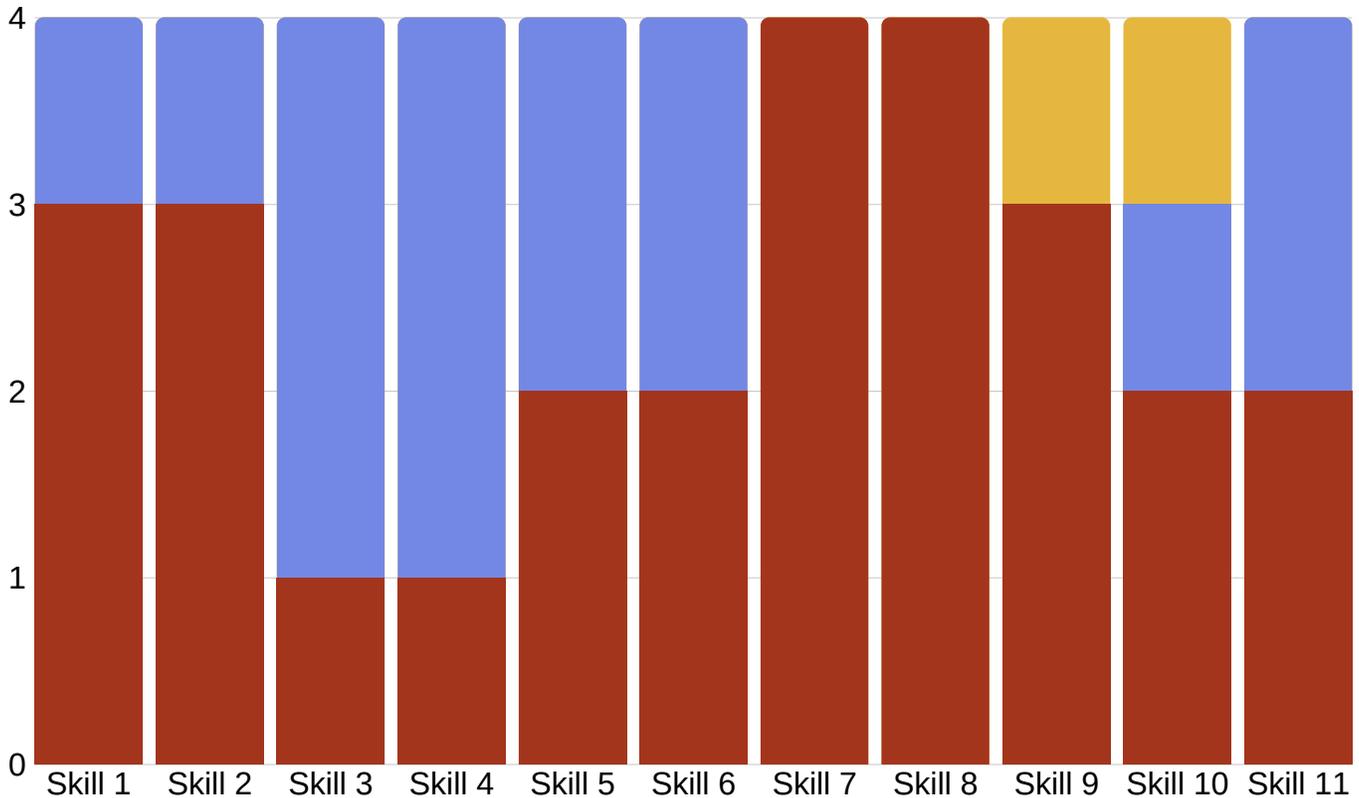


■ Necessary ■ Nice to Have ■ Not Needed

1. Describe various geologic structures and land forms and determine the best approach for preparing a site for construction.
2. Use conventional engineering and heavy construction mathematical functions to calculate on-site preparation and site development and improvement materials.
3. List sources of NPS and their possible impact related to water quality.
4. Perform basic calculations for sizing pipe and pumps for the movement of water.
5. Identify common types of heavy equipment and describe their unique features and uses.
6. Demonstrate basic concrete maintenance and repair methods.
7. Understand the layout of utilities in regards to underground electrical, sewer, water, phone, cable, etc.
8. Solve common construction problems (e.g., grading, drainage) by using commercial construction codes, building standards, and appropriate mathematical calculations.
9. Know the appropriate processes and materials in architectural design, project development, and engineering and heavy construction (e.g., structural, electrical, mechanical, and finish phases).
10. Identify local and state building codes as appropriate to heavy construction, especially as it relates to highway and bridge projects.
11. Understand the importance of safety and safe work practices (e.g., fire safety, protective clothing) in the welding phases of engineering and heavy construction and the safe operation of heavy equipment (e.g., earth movers, graders, bulldozers).

No Additional Comments

Mechanical Systems Installation and Repair

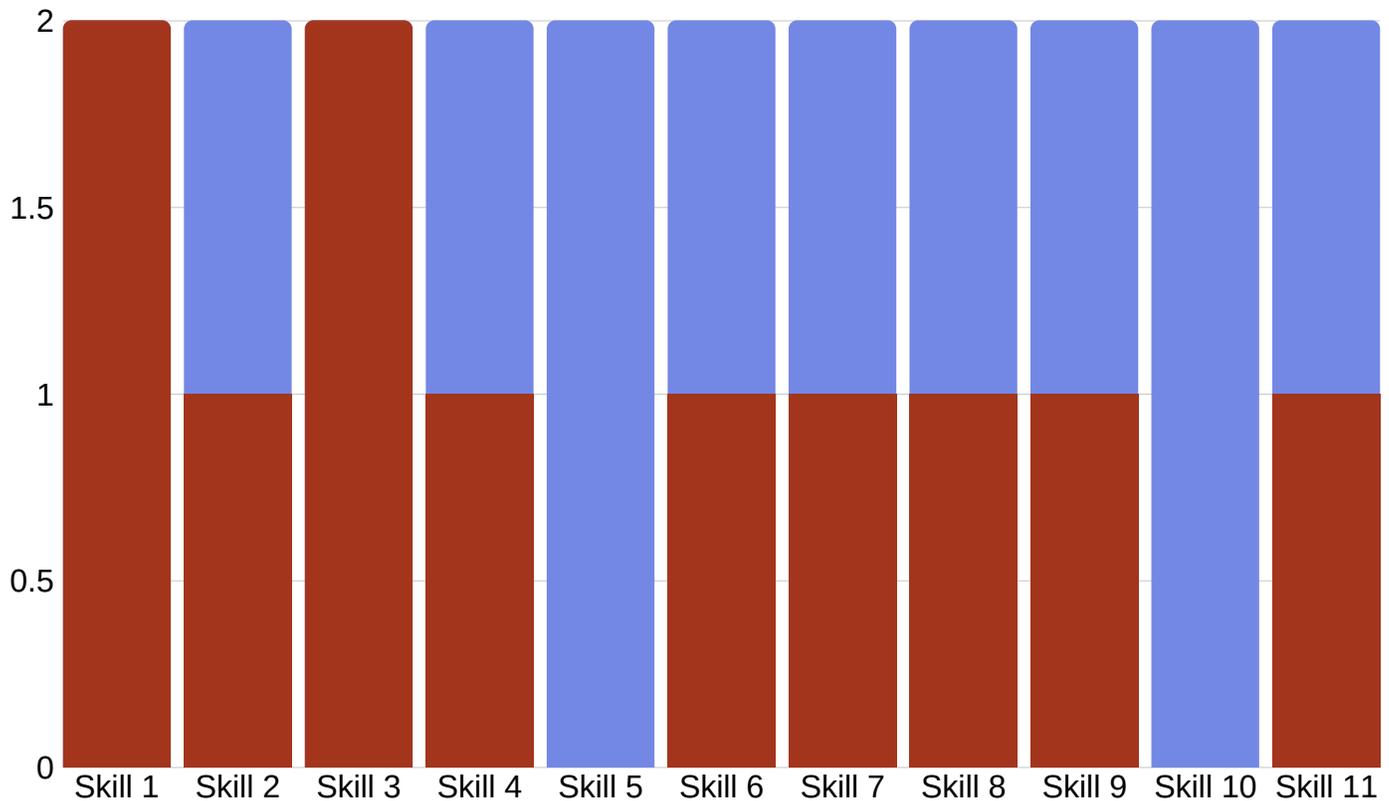


■ Necessary ■ Nice to Have ■ Not Needed

1. Demonstrate an understanding of the methods and devices used to improve air quality and comfort.
2. Describe the basic components and concepts of heating, air-conditioning, and refrigeration.
3. Demonstrate an understanding of the scientific theories and physical properties of heat and matter.
4. Analyze the effects and reactions of fluids, pressures, and temperatures on refrigerants.
5. Demonstrate skills necessary to fabricate and service the tubing, piping, and fittings utilized in accordance with accepted industry standards
6. Demonstrate the skills necessary to service, maintain, and repair heating, air-conditioning, and refrigeration system components and accessories.
7. Demonstrate a practical knowledge of basic electricity and skills necessary to service and maintain the electrical components of heating, air-conditioning, and refrigeration equipment.
8. Troubleshoot electrical control systems, motors, and their components.
9. Demonstrate a practical knowledge of solid-state electronics.
10. Demonstrate a practical knowledge of combustion heating systems.
11. Demonstrate practical knowledge of systems designed to improve air quality.

No Additional Comments

Residential and Commercial Construction



Necessary
 Nice to Have
 Not Needed

1. Recognize the impact of financial, technical, environmental, and labor trends on the past and future of the construction industry.
2. Apply the appropriate mathematical calculations used in the construction trades.
3. Interpret and apply information from technical drawings, schedules, and specifications used in the construction trades.
4. Demonstrate techniques for proper site preparation.
5. Demonstrate foundation layout techniques to include setting forms, placing reinforcements, and placing concrete according to construction drawings, specifications, and building codes.
6. Demonstrate carpentry techniques for the construction of a single-family residence.
7. Demonstrate proper installation techniques of interior finish materials and protective finishes.
8. Demonstrate the application of exterior finish materials and protective finishes in building construction.
9. Understand, integrate, and employ sustainable construction practices in the building trades.
10. Demonstrate skills necessary to complete a plumbing system in a single-family residence in accordance with accepted industry standards.
11. Demonstrate the skills necessary to complete an electrical system in a single-family residence in accordance with accepted industry standards.

Additional Comments

- Answering as it relates to being a builder, some skills can be and are frequently subbed out but a good understanding is still necessary to ensure subcontractor installations are code / plan compliant.
- Having knowledge and/or experience in a variety of trades is a plus yet, being able to research, ask questions and seek guidance from a pool of resources allows to learn and grow in career.