

ACE Leadership High School is committed to supporting young people in their transition to life after high school. This includes preparing them to pursue careers in architecture, construction, and engineering, while also providing a foundation of skills that will serve them well should they choose a different career path.

In Spring 2021, we convened focus groups and conducted interviews with industry professionals and postsecondary faculty. We analyzed their input for common themes, which became the backbone of the ACE Industry Framework. We then drew on curricula and competency frameworks already in existence in the industry to craft definitions for each competency. The resulting document, presented here, provides a roadmap for ACE students, families, teachers, staff, and industry partners who will use the framework to design industry-relevant projects and other student experiences, award certifications and micro-credentials, and ensure every ACE graduate leaves the school ready for successful transition.

Framework Overview



| Competency Area | Competency | Brief Description |
|---------------------------|-------------------------------|---|
| Staying Safe | OSHA-10 | Complete the OSHA-10 training |
| Staying Safe | First Aid | Complete First Aid training |
| Staying Safe | Common hazards | Recognize common hazards and unsafe conditions that occur in workshops and at worksites, common causes, and how to prevent them |
| Staying Safe | Safe tool use | Practice safe tool and equipment use, including ladders |
| Staying Safe | Protective equipment | Practice safe use of personal protective equipment such as respiratory protection and fall protection equipment |
| Staying Safe | Safety procedures | Read, comprehend, and follow safety procedures and protocols |
| Mastering Industry Basics | Arithmetic | Complete workshop or worksite tasks using arithmetic with whole numbers, fractions, decimals, and percents. |
| Mastering Industry Basics | Measurement | Use a measuring tape and other gauges/instruments to take measurements, calculate areas and volumes, and convert between different measurement units (e.g., from English to metric) |
| Mastering Industry Basics | Tools | Identify common hand and power tools, describe their properties and uses, and use them as appropriate to a task or project |
| Mastering Industry Basics | Materials | Identify common building and construction materials, describe their properties and uses, and use them as appropriate to a task or project |
| Mastering Industry Basics | Site maintenance | Prepare and maintain a clean and organized work environment |
| Mastering Industry Basics | Technical reading and writing | Write technical instructions that break a process down into steps; understand and follow through on written and visual instructions prepared by someone else |
| Mastering Industry Basics | Design thinking | Practice the five-step design thinking process, using creativity and critical thinking to brainstorm ideas, decide on solutions that meet the needs of the people you are designing for, testing the solution, and making improvement based on data and feedback. |
| Using Technology | Computer basics | Use basic computer hardware (e.g., mouse, trackpad, touchscreen, keyboard, printer), navigate between applications/software, type simple documents, and organize files for easy retrieval |
| Using Technology | Internet research | Use internet search engines to gather information relevant to the project or problem at hand; assess websites for legitimacy. |
| Using Technology | Spreadsheets | Use spreadsheet software to enter, manipulate, edit, and format text and numerical data |
| Using Technology | Design and modeling software | Explain the purposes of and differences between common software types used in the industry, including computer aided design (CAD) and building information modeling (BIM); practice using at least one |
| Using Technology | Emerging technology | Recognize the ongoing innovation in the industry; research new and emerging tools, equipment, materials, and technology (e.g. drones) |

| Competency Area | Competency | Brief Description |
|------------------------|--------------------------------|---|
| Working With People | Attendance | Attend consistently and on time or communicate with appropriate staff when attendance isn't possible; make arrangements to make up hours or otherwise get work done |
| Working With People | Initiative | Use resources and critical thinking to identify next steps and solve problems; ask for help when next steps are unclear. |
| Working With People | Code switching | Based on a self-awareness of one's own culture and identity, assess when to adapt to the culture of an organization or work setting and when to advocate for change |
| Working With People | Equity and Inclusion | Take action to ensure every individual feels included and valued, and speak up against discriminatory and harrasing language and/or behavior from others. |
| Working With People | Collaboration | Use listening skills to understand directions, ideas, and feelings expressed by others, offer to help, and contribute to a team's shared goals |
| Working With People | Willingness to learn | Demonstrate a learning stance, including an openness to instructions and feedback from others and the ability to reflect on and learn from one's own successes and mistakes |
| Working With People | Written communication | Write clear emails, cover letters, and other workplace documents, avoiding spelling, punctuation, and grammatical errors |
| Understanding Projects | Construction Life Cycle | Understand the phases of the design-and-build process, and the interrelationship of architecture, construction and engineering in carrying out steps from design to building |
| Understanding Projects | Career paths | Describe the roles of the principal occupations in architecture, construction, and engineering, including understanding the concept of specialization, and research basic information about typical educational/apprenticeship requirements for careers of interest |
| Understanding Projects | Blueprints | Read and understand the elements of a blueprint, including the use of scales; calculate dimensions based on blueprint measurements |
| Understanding Projects | Project management | Develop and execute a plan that involves dividing up work across team members, setting deadlines, and keeping track of time and tasks so that the project is completed on time |
| Understanding Projects | Terminology | Use and understand terminology, acronyms, and jargon common in architecture, construction, and engineering |