Essential Skills

Building Path – Manufacturing

This path involves physical labor at shops or construction sites and includes hand-welding, flame-cutting, or soldering equipment to weld/join metal components. Other jobs include setting up/programing/operating CNC machines to create new parts from blueprints/plans/prototypes.

Building Path – Manufacturing Programs at Great Oaks

Program	Location
Manufacturing Engineering Technologies	Live
Welding & Fabrication	Diamond, Laurel, Live, Scarlet

Next Ready Skills

Each career path has a specific set of skills/abilities that employees need for success in the industry. It is recommended that students have, are developing or can develop the skills/abilities listed below.

Effective Communicator	• Express/explain thoughts/ideas • Observe/document/maintain/update accurate records • Listen/relay accurate information in written/verbal manner • Use active listening to give full attention/understanding to others • Practice professional social communication (social media/workplace conversations)
Critical Thinking	• Follow sequenced activities accurately • Read/understand blueprints/drawings • Apply general rules to specific problems • Apply mathematical logic (geometric shapes/scale/space) • Study specifications to prepare project layout/work activities
Adaptable Navigator	• Work independently with minimal supervision/high attention to detail • Develop/follow procedures and processes • Respond/adapt to changes in scope of work/project needs • Awareness of surroundings to keep safe
Accountable Employee	• Be on time, honest and keep commitments • Follow ethical work practices including honesty/trustworthiness • Participate in class/lab activities/discussions/teamwork • Connect/network with industry professionals • Complete work in a timely manner
Skilled Professional	• Critique/evaluate work using industry terminology • Respond to critique positively/revise work based on feedback • Make informed decisions quickly • Develop a career path plan • Build career-focused technical/professional skills

Technology and Software

All career & technical education programs utilize various software and industry-specific equipment to prepare students for their careers. Students will independently access and use various online resources, technology, and equipment.

Here is an overview of key online and computer technology used in this pathway:

Vendor	Software/Learning Management System
Cengage	MindTap Precision Machining Technology
CareerSafe	Online OSHA 10 credentialing preparation/testing platform
FASTech Inc.	Mastercam - CAD/CAM/5 Multi-axis
Tooling University	Tooling U Advanced
Microsoft Office	Word, PowerPoint, Excel and Outlook
Internet Browsing	Conduct career-related independent and group research

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Great Oaks CAREER CAMPUSES Diamond • Laurel • Live • Scarlet

Industry Credentials/Certifications

Credentials/certifications demonstrate knowledge and skills. They are typically earned by successfully completing an exam or skill-related training program. Exams are developed by industry professionals, not high school educators, and are used to verify that students have the skills needed for work.

Students can earn industry credentials/certifications while at Great Oaks. Available accommodations are subject to vendor and/or State of Ohio approval. Some credential/certification exams do not allow any accommodations. Contact campus Intervention Specialist for the most up-to-date permitted accommodations.

Permitted accommodations may include:

Extended time

Post-secondary

Great Oaks offers college credit courses in both academic and career technical programs.

College Credit Plus (CCP)	• The CCP program provides Ohio high school students an opportunity to complete college courses and earn transcripted credit.
Career Technical Assurance Guides (CTAGs)	• CTAGs award college credit for career-technical coursework to students who complete an approved course and earn a qualifying score on the end of course exam.
Articulated Credit	• Some Great Oaks career-technical programs have agreements with colleges where students can earn credit toward a specific degree.

Additional Pathway Considerations

Some career pathways have additional standards students must meet to fully participate in Great Oaks programs. Programs in this pathway have some of the following requirements to participate in learning experiences and earn industry credentials/certifications.

Academic strengths	• Math (precise measurement /fractions/decimals/percentages/various operations) • Problem solving • Geometry (3-dimensional visualization/spatial understanding/scale) • Science (metals/impacts of heat on metals) • Oral/written communication
Safety	• Some worksites require OSHA 10 certification • Some sites require passing a drug screen • Comprehend hazards of working with tools/equipment/materials/environmental conditions • Wear personal protective equipment (safety glasses/hardhats/gloves/safety harnesses/ steel-toed boots/welding helmet/hearing protection) • Read/follow instruction/technical manuals • Understand hazards associated with equipment/tools/worksites • Follow policies/procedures/codes to protect people/data/property
Career expectations	• Work in various weather conditions (indoors/outdoors/summer/winter) • Work at various heights, using ladders, extended standing/sitting, stooping/bending • Lift and carry heavy objects (up to 80 pounds) • Record information (time/materials used/accidents/changes to work) • Comply with standards/policies/procedures (safety/maintenance) • Recommend/develop/perform general/preventative maintenance for tools/equipment • Follow specifications in blueprints/sketches/plans for project layout • Ensure conformance to specifications using precision instruments • Participate in planning/fabrication/assembly/inspection of projects • Measure/examine/test completed work to check for defects • Distinguish details/differences visually • Differentiate various sounds/pitch • Perceive distance/depth of objects in space • Use arm-hand steadiness/eye-hand coordination/ manual dexterity to grasp, manipulate, or assemble objects • Ability to use power/hand tools

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