Great Oaks Construction Technologies
Essential Skills Profile

This profile provides an outline of the skills required for successful completion of this career program. Additional information is located on the Great Oaks website at https://hs.greatoaks.com/future-students/essential-skills-for-high-school-programs and selecting the corresponding career program.

Recommended WorkKeys® Scores for Construction Technologies

Applied Mathematics-3	Graphic Literacy-4
Workplace Documents-3	

*Practice tests and more information can be found at https://jobseeker.ohiomeansjobs.monster.com/Assessments/Home.aspx

Essential Skills Needed to Successfully Complete the Program			
Rating Key:	**Low = Slightly Essential**	**Medium = Essential**	**High = Very Essential**

Key Vocational Factors		**Rating**
Visual Acuity	The ability to detect differences/details visually	High
Depth Perception	The ability to detect the physical distance/depth of objects in space and time	High
Oral Communication	The ability to express/explain ideas	Medium
Oral Expression	The ability to verbally explain and express self in an intelligible manner so others will understand	Medium
Written Communication	The ability to communicate in a written format and record information accurately	Medium
Physical Mobility/Strength	Extended standing, bending, stooping, use of ladders, working inside and outside, and working on roofs or at high levels above the ground	High
Eye-hand Coordination	The ability to use construction tools	High
Auditory Acuity	The ability to detect differences in pitch and sound	Medium
Safety Understanding	Able to comprehend hazards of working with tools, materials, equipment, and environmental conditions; able to wear personal protective equipment suitable for task	High

Worker Trait Skills	**Rating**
Ability to get along with others	Medium
Ability to work independently, without close supervision	Medium
Ability to work toward work including tasks of minimal interest	High
Ability to follow and retain:	
Multistep oral instructions	High
Written instructions/technical manuals - multistep	High
Simple to complex diagram instructions	Medium
Visual models or demonstrated instructions	Medium
Ability to use tools of trade (power saws, man lift or personnel lift, levels, forklifts, blow torch, hammers, squares, power routers, ladders, etc.)	High

Ability to use numerical data (count, measure, compute, etc.) in applied setting	Medium
Ability to discriminate between objects of similar:	
Size	High
Shape	Medium
Color	Medium
Spatial relationship	Medium
Ability to organize work process/follow defined procedures	High
Coordination (eye-hand)	High
Able to sequence events or follow a sequence as necessary	High
Active Listening: Give full attention to what other people are saying, taking time to understand the points being made, asking appropriate questions and not interrupting	High
Operation Monitoring: Watching gauges, dials, or other indicators to make sure machine is working properly	High

Reading Skills *See Recommended WorkKeys® Scores Above	
Math Skills *See Recommended WorkKeys® Scores Above	
Counting, recording, comparing, calculating	Whole numbers and decimals
Calculating fractions, decimals, ratios, order of operations	Pre-Algebra and Geometry
Ratio, Algebra, formulas, square roots	Geometry

Additional Abilities Required

Manual Dexterity	The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.
Arm-Hand Steadiness	The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.
Multi-limb Coordination	The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing, or lying down. It does not involve performing the activities while the whole body is in motion.

Knowledge Required in Construction Technologies Field

Building and Construction	Knowledge of materials, methods, and the tools involved in the construction or repair of houses, buildings, or other structures such as highways and roads.
Mechanical	Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
Administration and Management	Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership

	technique, production methods, and coordination of people and resources.

Construction Technologies Work Activities

Control traffic passing near, in, or around work zones.	Signal equipment operators to facilitate alignment, movement, or adjustment of machinery, equipment, or materials.
Clean or prepare construction sites to eliminate possible hazards.	Read plans, instructions, or specifications to determine work activities.
Load, unload, or identify building materials, machinery, or tools, distributing them to the appropriate locations, according to project plans or specifications.	Measure, mark, or record openings or distances to layout areas where construction work will be performed.
Install sewer, water, or storm drain pipes, using pipe-laying machinery or laser guidance equipment.	Operate or maintain air monitoring or other sampling devices in confined or hazardous environments.
Mix ingredients to create compounds for covering or cleaning surfaces.	Dig ditches or trenches, backfill excavations, or compact and level earth to grade specifications, using picks, shovels, pneumatic tampers, or rakes.
Tend pumps, compressors, or generators to provide power for tools, machinery, or equipment or to heat or move materials, such as asphalt.	Mix, pour, or spread concrete, using portable cement mixers.
Erect or dismantle scaffolding, shoring, braces, traffic barricades, ramps, or other temporary structures.	Provide assistance to craft workers, such as carpenters, plasterers, or masons.
Lubricate, clean, or repair machinery, equipment, or tools.	Position, join, align, or seal structural components, such as concrete wall sections or pipes.
Grind, scrape, sand, or polish surfaces, such as concrete, marble, terrazzo, or wood flooring, using abrasive tools or machines.	Position or dismantle forms for pouring concrete, using saws, hammers, nails, or bolts.
Tend machines that pump concrete, grout, cement, sand, plaster, or stucco through spray guns for application to ceilings or walls.	Spray materials, such as water, sand, steam, vinyl, paint, or stucco, through hoses to clean, coat, or seal surfaces.
Apply caulking compounds by hand or caulking guns to protect against entry of water or air.	Smooth or finish freshly poured cement or concrete, using floats, trowels, screeds, or powered cement finishing tools.
Mop, brush, or spread paints, cleaning solutions, or other compounds over surfaces to clean them or to provide protection.	Perform site activities required of green certified construction practices, such as implementing waste management procedures, identifying materials for reuse, or installing erosion or sedimentation control mechanisms.
Operate jackhammers or drills to break up concrete or pavement.	Place, consolidate, or protect case-in-place concrete or masonry structures.

Raze buildings or salvage useful materials.	Perform building weatherization tasks, such as repairing windows, adding insulation, or applying weather-stripping materials.
Transport or set explosives for tunnel, shaft, or road construction.	Use computers or other input devices to control robotic pipe cutters or cleaners.
Perform minor plumbing, welding, or concrete mixing work.	Finish surfaces of woodwork or wallboard in houses or buildings, using paint, hand tools, or paneling.
Build or repair cabinets, doors, frameworks, floors, or other wooden fixtures used in buildings, using woodworking machines, carpenter's hand tools, or power tools.	Install structures or fixtures, such as windows, frames, floorings, trim, or hardware, using carpenters' hand or power tools.
Follow established safety rules and regulations and maintain a safe and clean environment.	Inspect ceiling or floor tile, wall coverings, siding, glass, or woodwork to detect broken or damaged structures.

Available Certifications

Industrial Forklift Operations (1 point)	NCCER Core (6 Points)
OHSA 10-hour card (1 Point)	NCCER Level 1-Carpentry (6 Points)
CPR/First Aid Certification (1 Point)	Skid-Steer Operations

Possible College Credits

College Credit Plus in English, Math, Social Studies, or Science	Must be preapproved. Must pass a college course at an Ohio college or College Credit Plus class at Great Oaks.
Articulated Credit	Great Oaks has agreements with certain colleges that may give you credits for a specific degree. Possible agreements are: • Hocking College (Construction Management-Carpentry, up to 9 credit hours possible) • Ohio Valley ABC (Carpentry Apprenticeship, 144 class hours, 2000 hours work experience, 2nd level)

*Additional college or post-secondary education may be required in this field

Possible Career Pathways

Carpenter	Electrician
Foreperson	Engineer
Plumber	