

Advanced Manufacturing - Quality Technician

Sector: Advanced Manufacturing	Occupation: Quality	Credential(s): MSSC

CareerWise Colorado (CWC) will introduce and support development of these **Career Ready competencies** throughout the apprenticeship (through boot camp, periodic CWC convening's, and training modules delivered by supervisors/coaches over time).

Career Ready Competencies		
Entrepreneurial	Critical thinking and problem solving	<input type="checkbox"/>
	Creativity and innovation	<input type="checkbox"/>
	Inquiry	<input type="checkbox"/>
	Risk taking	<input type="checkbox"/>
Personal	Self-direction	<input type="checkbox"/>
	Adaptability and flexibility	<input type="checkbox"/>
	Self-management	<input type="checkbox"/>
Civic/Interpersonal	Collaboration and teamwork	<input type="checkbox"/>
	Communication	<input type="checkbox"/>
	Global and cultural awareness	<input type="checkbox"/>
	Ethics and integrity	<input type="checkbox"/>
Professional	Core Academic Foundation	<input type="checkbox"/>
	Time management	<input type="checkbox"/>
	Grit and resilience	<input type="checkbox"/>
	Work ethic	<input type="checkbox"/>
	Self-advocacy	<input type="checkbox"/>

Technical Competencies

For each competency, use the letter X to indicate whether each competency can be taught and evaluated on the job.

Number	Technical Competencies of the Occupation Pathway
<input type="checkbox"/> 1	Read work orders or other instructions to determine product specifications or materials requirements. <ul style="list-style-type: none"> • Read blueprints and schematics, data, manuals, or other materials to determine specifications, inspection and testing procedures, adjustment methods, certification processes, formulas, or measuring instruments required.
<input type="checkbox"/> 2	Review blueprints or other instructions to determine operational methods or sequences. <ul style="list-style-type: none"> • Read blueprints, data, manuals, or other materials to determine specifications, inspection and testing procedures, adjustment methods, certification processes, formulas, or measuring instruments required.
<input type="checkbox"/> 3	Monitor equipment operation to ensure proper functioning and. (Supplemental)
<input type="checkbox"/> 4	Observe and replicate the proper functioning of belt drive and roller chain drive systems, including when to inform maintenance personnel.
<input type="checkbox"/> 5	Observe and replicate the proper functioning of mechanical power transmission equipment, bearings and shafts, and couplings, including when to inform maintenance personnel.
<input type="checkbox"/> 6	Observe and replicate the electrical, pneumatic, hydraulic, and machine automation systems reliability issues, including when to inform maintenance personnel.
<input type="checkbox"/> 7	Monitor equipment operation to ensure that products are not flawed.
<input type="checkbox"/> 8	Mark products, workpieces, or equipment with identifying information. <ul style="list-style-type: none"> • Mark items with details such as grade or acceptance-rejection status. (Related to #26 -- knowing the industry standards)
<input type="checkbox"/> 9	Analyze test results. <ul style="list-style-type: none"> • Supplemental- Analyze test data, making computations as necessary, to determine test results.

<input type="checkbox"/> 10	Test chemical or physical characteristics of materials or products. (Supplemental)
<input type="checkbox"/> 11	Compare physical characteristics of materials or products to specifications or standards. <ul style="list-style-type: none"> ● Compare colors, shapes, textures, or grades of products or materials with color charts, templates, or samples to verify conformance to standards.
<input type="checkbox"/> 12	Measure ingredients or substances to be used in production processes.
<input type="checkbox"/> 13	Weigh finished products. <ul style="list-style-type: none"> ● Supplemental - Weigh materials, products, containers, or samples to verify packaging weights or ingredient quantities.
<input type="checkbox"/> 14	Measure dimensions of completed products or workpieces to verify conformance to specifications. <ul style="list-style-type: none"> ● Inspect, test, or measure materials, products, installations, or work for conformance to specifications. ● Measure dimensions of products to verify conformance to specifications, using measuring instruments such as rulers, calipers, gauges, micrometers, coordinate measuring machines, optical scopes and comparators.
<input type="checkbox"/> 15	Evaluate quality of materials or products. <ul style="list-style-type: none"> ● Discard or reject products, materials, or equipment not meeting specifications, assist goes to material review board or supervisor
<input type="checkbox"/> 16	Sort and verify materials or products for processing, storing, or shipping.
<input type="checkbox"/> 17	Clean inspection equipment, e.g., line clearance after inspection.
<input type="checkbox"/> 18	Stack finished items for further processing or shipment.
<input type="checkbox"/> 19	Collect samples of materials or products for testing per acceptable quality levels (e.g., pull 500 pieces out of 50,000). <ul style="list-style-type: none"> ● Collect or select samples for testing or for use as models.

<input type="checkbox"/> 20	Mount materials or workpieces onto test or inspection equipment.
<input type="checkbox"/> 21	Smooth metal surfaces or edges. <ul style="list-style-type: none"> ● Supplemental - Remove defects, such as chips, burrs, or lap corroded or pitted surfaces and verify that defect removal was completed appropriately.
<input type="checkbox"/> 22	Maintain and calibrate inspection equipment. (Supplemental)
<input type="checkbox"/> 23	Repair inspection equipment or tools and verify calibration after repair (maintain calibration records).
<input type="checkbox"/> 24	Record operational, production, or inspection data. <ul style="list-style-type: none"> ● Record inspection or test data, such as weights, temperatures, grades, or moisture content, variable and attribute data and quantities inspected or graded. ● Write test or inspection reports describing results, recommendations, or needed repairs.
<input type="checkbox"/> 25	Notify others of measurement and test equipment repair or maintenance needs or quality issues. <ul style="list-style-type: none"> ● Notify supervisors or other personnel of production problems.
<input type="checkbox"/> 26	Instruct workers to use measurement equipment or perform technical procedures. (Supplemental)
<input type="checkbox"/> 27	Maintain and update work instructions to current revision.
<input type="checkbox"/> 28	Advise others on ways to improve processes or products. <ul style="list-style-type: none"> ● Recommend necessary corrective actions, based on inspection results. ● Supplemental -- Interpret regulatory requirements, provide safety information, or recommend compliance procedures to contractors, craft workers, engineers, or property owners.
<input type="checkbox"/> 29	Understand statistical process control and have a basic working knowledge of statistics in general.

<input type="checkbox"/> 30	<p>Understand key manufacturing processes and concepts.</p> <ul style="list-style-type: none"> ● Six Sigma method (at green or black belt level) ● Kaizen ● Lean manufacturing ● 5S ● cGMP (Good Manufacturing Processes)
<input type="checkbox"/> 31	<p>Understand key manufacturing standards.</p> <ul style="list-style-type: none"> ● ISO 9000 and 9001 Standards ● CMM, DOE, FMEA, Minitab, and statistical process control ● GD & T ● Accuracy requirements ● Safety standards
<input type="checkbox"/> 32	<p>Observe and demonstrate systems of safety used by high-performance manufacturers.</p>
<input type="checkbox"/> 33	<p>Identify, report, and monitor potential safety hazards at work and take corrective action to eliminate potential hazards.</p>
<input type="checkbox"/> 34	<p>demonstrate safety procedures per company policy and relevant laws.</p>
<input type="checkbox"/> 35	<p>Observe the overall quality process and quality systems such as Six Sigma, Total Quality Management, Lean Management, and relevant standards, such as ISO 9001.</p>