

# FUNDAMENTAL SKILLS FOR MANUFACTURING AND ENGINEERING: QUALITY PRINCIPLES, INSPECTION & TEST ARTICULATION

Pierce County Careers Connection  
Dual Credit Articulation Agreement

Upon completion of a full year of high school or equivalent to the following competencies:

	Describe the philosophy of, and the terms associated with Lean Manufacturing, Six Sigma, and ISO 9001.
	Demonstrate the ability to create clear and accurate QA documentation using office software (e.g. Word, Excel)
	Demonstrate the use of Measurement and inspection tools such as micrometers, calipers and height gauges.
	Select appropriate measurement and/or inspection equipment for common manufacturing processes.
	Set up and inspect parts using surface plates, angle plates, sine bars and plates, and V blocks.
	Document measurements and observations by filling out quality charts and records.
	Use technical vocabulary to discuss measuring protocols, sampling and testing procedures and reporting.
	Communicate issues with hand sketches.
	Use a spreadsheet (e.g. Excel) to record, analyze, and present data.
	Calculate the mean, median, mode and standard deviation for a set of experimental results.
	Identify object lines, hidden lines, center lines extension lines, dimension lines, and projection lines in blueprints.
	Identify line combinations.
	Identify 3 – view drawing, view arrangement, 2 – view drawing, 1 – view drawing.
	Identify size dimensions and locations for holes and angles.

	Identify location dimensions for points, centers, and holes.
	Identify large arc dimensioning and baseline dimensions.
	Identify detail and assembly drawings.
	Identify cutting planes (full sections and section lining).
	Identify half-sections (partial sections and full sections assembly drawings).
	Interpret orthographic projection drawings.
	Interpret oblique and isometric drawings.
	Interpret geometric dimensioning, tolerancing and other data from printed, and CAD files.
	Explain the information presented in title blocks, general notes, revision blocks, abbreviations, parts lists, drawing references, numbering systems, and other technical information.
	Identify, using correct vocabulary, the tools, and materials and machining processes as stated on a blueprint.
	Extract geometric and other data from printed schematics and drawings, including the use of sectional and auxiliary views.
	Describe the shape and location of each feature of an object in all views of a machine drawing.
	Extract geometric and other data from 2D CAD files.

A student earning a “C” grade or better may earn college credit at the following college:

<u>College</u>	<u>Course</u>	<u>Credits</u>
Clover Park Technical College	FSME 111	5