

Knowledge	Skills	Performance Element	
			15.0000 Engineering, General (2011)
			Technical Standards - Michigan Customized List
IV			Engineering Systems
	F		Demonstrate an understanding of and be able to use mechanical engineering principles
		1	Identify the six simple machines and their applications
		a	pulley
		b	lever
		c	wedge
		d	incline plane
		e	screw
		f	wheel and axle
		2	Solve problems using appropriate units in engineering systems
		3	Solve problems using vectoring, predict resultant forces
		4	Identify what causes resistance in a fluid system
		5	Apply knowledge of hydraulic and pneumatic systems
I			ACADEMIC FOUNDATIONS
	C		Demonstrate the ability to select, apply, and convert systems of measurement to solve problems.
		1	Apply scalar and vector quantities as applied to physical systems, such as the relationship between position, velocity, and acceleration.
		2	Apply fundamental laws and principles relevant to engineering and technology.
	D		Demonstrate the ability to use Newton's Laws of Motion to analyze static and dynamic systems with and without the presence of external forces.
		1	Use the laws of conservation of energy, charge, and momentum, to solve a variety of problems involving mechanical, fluid, chemical, biological, electrical, and thermal systems.
		2	Use the relationships between energy, work, and power to solve a variety of problems involving mechanical, fluid, electrical, and thermal systems.
		3	Use the principles of ray optics to describe reflection and refraction of light.