

# Principles of Technology 2 (9812)

## UNIT 8: MOMENTUM PT2.1

- 1 Define linear momentum. PT2.1.1
- 3 Define the law of conservation of momentum. PT2.1.3
- 2 Define angular momentum. PT2.1.2
- 4 Predict the relationship of impulse to change in momentum. PT2.1.4
- 5 Research examples of how momentum affects mechanical and fluid systems. PT2.1.5

## UNIT 9: WAVES and VIBRATIONS PT2.2

- 1 Explain wave motion. PT2.2.1
- 2 Describe how waves transmit (move) energy. PT2.2.2
- 3 Identify the characteristics that are used to describe a wave. PT2.2.3
- 4 Demonstrate how waves transmit energy. PT2.2.4
- 5 Distinguish between longitudinal and transverse waves. PT2.2.5
- 6 Research workplace applications where waves and vibrations are found. PT2.2.6

## UNIT 10: ENERGY CONVERTERS PT2.3

- 1 Define energy converter. PT2.3.1
- 2 Describe what is meant by the efficiency of an energy converter. PT2.3.2
- 3 Research converters that change mechanical energy to fluid energy or electrical energy. PT2.3.3
- 4 Research converters that change fluid energy to mechanical energy. PT2.3.4
- 5 Research converters that change electrical to mechanical or thermal energy. PT2.3.5
- 6 Research converters that change thermal to mechanical, fluid, or electrical energy. PT2.3.6
- 7 Construct a system that demonstrates energy conversion. PT2.3.7

**UNIT 11:**  
**TRANSDUCERS** PT2.4

- 1 Distinguish between a transducer and a sensor. PT2.4.1
- 2 Distinguish between an energy converter and a transducer. PT2.4.2
- 3 Identify transducers that change mechanical signals into electrical signals. PT2.4.3
- 4 Identify transducers that change fluid signals into mechanical or electrical signals. PT2.4.4
- 5 Identify transducers that change electrical signals into mechanical or thermal information. PT2.4.5
- 6 Identify transducers that change thermal signals into mechanical, fluid, or electrical information. PT2.4.6

**UNIT 12:**  
**RADIATION** PT2.5

- 1 Define radiant energy. PT2.5.1
- 2 Define electromagnetic radiation. PT2.5.2
- 3 Define nuclear radiation. PT2.5.3
- 4 Explain physical relativity phenomena that occur at low speeds and that occur as the speed of light is approached. PT2.5.4
- 5 Research workplace applications where technicians measure or control radiation. PT2.5.5
- 6 Explain physical phenomena at the quantum-mechanical level. PT2.5.6

**UNIT 13: LIGHT and**  
**OPTICAL SYSTEMS** PT2.6

- 1 Describe how light can be represented by light rays. PT2.6.1
- 2 Describe how light can be represented by waves. PT2.6.2
- 3 Identify the characteristics of laser light. PT2.6.3
- 4 Identify several optical systems that “process” light. PT2.6.4
- 5 Research workplace applications where technicians measure and control light. PT2.6.5
- 6 Demonstrate how sound can be transmitted by light. PT2.6.6

**UNIT 14: TIME**  
**CONSTANTS** PT2.7

- 1 Define the term time constant. PT2.7.1
- 2 Distinguish between uniform and nonuniform change. PT2.7.2

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**3 Research systems where time constants are needed to describe system behavior.** [PT2.7.3](#)

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**4 Define three time constants.** [PT2.7.4](#)

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**5 Research examples of time constants in mechanical, fluid, electrical, and thermal energy systems.** [PT2.7.5](#)

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**6 Research workplace applications where technicians measure and control time constants.** [PT2.7.6](#)