MORAINE PARK
TECHNICAL COLLEGE

Moraine Park Technical College

806-376 Applied Physics

Course Outcome Summary

Course Information

Description   Analyzes basic mechanical, fluid and electrical science concepts. Theoretical applications that relate to occupational situations are developed. Mathematical calculations and conceptual models are used throughout the course.

Textbooks Not required to be purchased for exam.

Dale Ewen. *Physics for Career Education*. Prentice Hall. 2002. **Edition:** 7th. **Pages:** 622. **ISBN:** 0130406538.

To schedule an exam: contact Greg Mittelsteadt at 920-924-3215 or cpl@morainepark.edu

3 Hour time limit

An 80% is required to pass

Course Competencies

Solve problems involving unit conversions and unit analysis.

Learning Objectives
Create unit conversion grid.
Identify equalities.
Determine unit cancellation.
Carry out single unit conversions.
Carry out double unit conversions.

Analyze linear kinematic systems.

Learning Objectives
Solve constant/average velocity problems.
Solve constant/average acceleration problems.
Solve free fall problems.
Interpret distance time graphs.
Interpret velocity time graphs.

Analyze the laws of linear dynamics.

    Learning Objectives
    Identify the terms; Law, Principle and Model.
    Analyze force and motion with Newton's second Law without friction.
    Analyze force and motion with Newton's second Law with friction.

Analyze work and energy and power systems.

    Learning Objectives
    Calculate work.
    Calculate energy.
    Calculate power.
    Calculate efficiency.

    Evaluate work/energy systems.

Examine simple machines.

    Learning Objectives
    Calculate ideal mechanical advantage.
    Calculate actual mechanical advantage.
    Calculate efficiency.
    Evaluate complex machines.

Analyze Simple harmonic motion systems.

    Learning Objectives
    Analyze sinusoidal vibrations.
    Differentiate between driven and free oscillators.
    Analyze resonance.

Analyze thermal dynamics of a system.

    Learning Objectives
    Analyze heat transfer.
    Analyze internal combustion engine cycle.
    Analyze air conditioning cycle.

Analyze fluid dynamics of a system.

    Learning Objectives
    Analyze properties of fluid pressure.
    Analyze Pascal's Principle.
    Evaluate viscosity.