

AME 2213 Thermodynamics

1. Basic Competencies (Level 1 and 2)

Students will be able to define the Thermodynamic concepts of energy, heat, work, power, process, state

2. First Law Analysis (Level 2 and 3)

Students will be able to perform a First Law analysis on:

- a. Arbitrary steady flow systems
- b. Selected time-dependent open and closed systems

3. Second Law and Entropy Concepts (Level 2 and 3)

You will be able to apply Second Law and entropy concepts to thermodynamic systems

4. Property Data Tables (Level 3)

To solve thermodynamics problems, you will be able to use property data tables

5. Contemporary Issues (Level 4)

You will be able to demonstrate an awareness of the impact of thermodynamics on contemporary issues such as:

- a. Air pollution
- b. Power Generation
- c. Automobile design

Mini-Project (Higher - order thinking skills)

Students are given opportunities to choose a project to focus on one of three small countries and write a proposal for a thermal energy system to meet the electrical generation needs of that country for the next ten years. The project needs to include explanation of the need for additional electrical power generation capacity in the country students have chosen, the resources (or lack thereof) that are available for meeting those needs, and the economic situation in the country. In the proposal students need to explain the proposed technology to meet the needs in the chosen country and provide choice justification. In addition, students are asked to discuss the environmental, societal, and economic impacts of the proposed project.