MET 260 Applied Thermodynamics

Course Description: A course in the engineering study of energy. Topics include: first and second laws of thermodynamics, general energy equation, Mollier diagrams, ideal cycles, steam generation and turbines, and refrigeration.

Prerequisites(s): MET 150, and MAT 121 or MAT 125 **Corequisite(s):** No corequisite

Lecture Hours: 2	Lab Hours: 2	Credit Hours: 3
Lab Fee: 70	Supplemental Fee: 0	Purpose:
☐ Transfer Assurance Guide Course (TAG)	☐ Transfer Module Course (TM)	
Course Format: Lec/Lab	Grading: A/B/C/D/F/I	
Delivery Method: □ Web	□ Hybrid	☒ Classroom
Semesters Offered: ☒ Fall	☒ Spring	□ Summer

Course Primary Text:

Title: Thermodynamics and Heat Power	Edition: 8th
Author(s): Irving Granet	
Publisher: Reston Publishing Co.	

Supplemental Materials:

Additional problem sets and tables will be distributed by the instructor

Course Outcomes:

1	The student will be able to apply knowledge, techniques, skills and modern tools of the discipline to analyze and solve thermodynamics problems.
2	The student will have the ability to apply a knowledge of mathematics, science, engineering, and Technology to solve problems involving thermodynamics.
3	The student will have the ability to conduct standard tests and measurements, and to conduct, analyze and interpret thermodynamics experiments
4	The student will have the ability to identify, analyze, and solve thermodynamics problems
5	The student will demonstrate a commitment to quality, timeliness, and continuous improvement

Course Topics:

Week 1	Fundamental concepts of thermodynamics
Week 2	Work, Energy, Heat
Week 3	First law of thermodynamics
Week 4	General energy equation
Week 5	Second law of thermodynamics
Week 6	Carnot cycle, reversibility, entropy
Week 7	Properties of liquids & gases, phases
Week 8	Steam tables, Mollier diagram
Week 9	The ideal gas, Boyles law, Charles law
Week 10	Gas tables
Week 11	Mixtures of ideal gases, air-water vapor mixtures
Week 12	Psychrometric chart
Week 13	Vapor power cycles, Carnot cycle, Rankine cycle
Week 14	Gas power cycles, Otto cycle, Diesel cycle
Week 15	Refrigeration, reversed Carnot cycle, refrigeration cycle, heat pump

Methods of Evaluation/Assessment

□ Formative: ☒ Summative

List assessment activities (e.g. quizzes, discussions, essays, research papers, debates, oral presentations, exams):

Weekly quizzes – 70% of course grade
Final exam – 20% of course grade
Homework & class participation – 10% of course grade

Course Keeper: Abbey Yee Date Completed: 8/11/18