Montgomery County Community College
EGT 215
Applied Thermodynamics
4-3-3

COURSE DESCRIPTION:
This course introduces the student to the fundamental heat transfer equations for conduction, convection, and radiation and heat exchanger design. Topics will also include instruction on fundamental concepts of the first and second laws of thermodynamics and their applications to engineering systems. All lecture material presented in class will be reinforced by in-class laboratories experiences. This course is subject to a course fee. Refer to http://mc3.edu/adm-fin-aid/paying/tuition/course-fees for current rates.

REQUISITES:
Previous Course Requirements
- EGT 190 Principles of Critical Thinking in Technology
- MAT 162 Precalculus II

Concurrent Course Requirements
None

LEARNING OUTCOMES Upon successful completion of this course, the student will be able to:	LEARNING ACTIVITIES	EVALUATION METHODS
1. Apply basic principles to real life problems.	Lecture Group Problem Assignments Design of Experiments	Exams Problem Assignment Review Design of Experiment Review
2. Use logical and methodical problem solving techniques.	Lecture Group Problem Assignments Design of Experiments	Exams Problem Assignment Review Design of Experiment Review

At the conclusion of each semester/session, assessment of the learning outcomes will be completed by course faculty using the listed evaluation method(s). Aggregated results will be submitted to the Associate Vice President of Academic Affairs. The benchmark for each learning outcome is that *70% of students will meet or exceed outcome criteria.*

SEQUENCE OF TOPICS:
1. The First and Second Laws of Thermodynamics
2. Working Fluids and Heat Engines

3. Reversible and Irreversible Processes
4. Steam Engines, Gas Turbine Engines, Jet Engines
5. Rotodynamic, Positive Displacement, and Internal Combustion Engines
6. Refrigeration, Heat Pumps, Air-Conditioners, Heat Transfer and Energy Management

LEARNING MATERIALS:

Textbooks:

Eastop & McConkey. (1996) *Applied Thermodynamics for Engineering Technologists* (5th ed.) Pearson, ISBN: 978-0582091931

Other learning materials may be required and made available directly to the student and/or via the College's Blackboard course management system.

COURSE APPROVAL:

Prepared by:	H. Thomas Tucker, Jr. Assistant Professor of Engineering	Date: 11/28/2004
Revised by:	William H. Brownlowe Associate Professor of Engineering	Date: 9/26/2013
VPAA/Provost or designee Compliance Verification:		
	Victoria Bastecki-Perez, Ed.D.	Date: 1/17/2014
Revised by:	Debbie Dalrymple	Date: 12/17/2017
VPAA/Provost or designee Compliance Verification:		Date: 1/9/2018

This course is consistent with Montgomery County Community College's mission. It was developed, approved and will be delivered in full compliance with the policies and procedures established by the College.