EXPANDED COURSE DESCRIPTION
MECHANICAL ENGINEERING
Lassonde School of Engineering
Mechanical Engineering
LE / MECH 2201 3.0 SECTION A
THERMODYNAMICS
FALL 2017 / WINTER 2018

Last Modified Date: 08/17/2017

COURSE CALENDAR DESCRIPTION

This course covers properties and behaviour of substances, first and second laws of thermodynamics, applications of thermodynamics laws to closed and open systems, and availability. Prerequisites: SC/CHEM 1100 4.00, SC/PHYS 1800 3.00.

INSTRUCTOR(S)

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<tr>
<th>Name</th>
<th>Section / Format / Term</th>
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<tr>
<td>Sadek, Hossam</td>
<td>Sec. A / LECT / F</td>
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TOPICS AND CONCEPTS

Topics for this course include:
- Introductory Concepts and Definitions
- Evaluating Properties, Energy
- Energy Analysis of Closed Systems
- Mass and Energy Analysis of Control Volumes
- The Second Law of Thermodynamics
- Entropy
- Vapour Power Cycles
- Gas Power Cycles

GRADING SCHEME

Weekly Assignments: 10%
Tutorial: 15%
Quizzes: 10%
Midterm Exam: 25%
Final Exam: 40%

COURSE LEARNING OUTCOMES

Upon successful completion of the course, the student will have demonstrated the ability to:
1. Analyze energy balance and transfer of cycles with the concept that any process cannot violate any laws of
2. Evaluate thermodynamic properties (e.g., pressure, specific volume, temperature, ) of liquids, solids, and/or ideal gases.
3. Analyze entropy change or balance for different
4. Evaluate thermodynamic properties (e.g., pressure, specific volume, temperature, ) of ideal gas mixtures.
5. Apply the concepts of different cycles (e.g., Carnot, Rankine, Air-standard Otto, Diesel, Dual, etc.) to analyze different system (e.g., heat pumps, refrigerators, vapor-power system, gas-power system, etc.)

RECOMMENDED TEXTBOOK


ACADEMIC INTEGRITY LINKS

- Senate Policy on Academic Honesty - http://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/
- Academic Integrity - http://lassonde.yorku.ca/academic-integrity

STUDENT LINKS

- Student Rights and Responsibilities - http://oscr.students.uit.yorku.ca/student-conduct
- Religious Observance - https://w2prod.sis.yorku.ca/Apps/WebObjects/cdm.woa/wa/regobs
- Counselling and Disability Services - http://cds.info.yorku.ca/

Many courses utilize Moodle, York University’s course website system. If your course is using Moodle, click here to access it.

Moodle @ York University