MECH 445 – Cryogenic Engineering

Term – SUMMER 2015 (201505)

Instructor
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Office Hours
Days: M, TH
Time: 14:30-15:50
Location: ECS 116

Course Objectives
Develop analytic tools for design of low temperature systems, processes, gas liquefaction and storage

Learning Outcomes
- Predict variations in material properties at low temperature
- Propose designs for liquid cryogen storage systems (Dewars)
- Determine liquefier yield and efficiency for a given process
- Design regenerators for high effectiveness
- Describe working principles of magnetocaloric systems

Syllabus
1. Low Temperature Physics: material properties, thermal design, cryogen storage systems.

Required Text
Title: N/A
Author:
Publisher:
Year:

Optional Text
Title: Cryogenic Systems
Author: R. F. Barron
Publisher: Oxford University Press
Year: 1985

Assessment:
Assignments: 25 %
Labs 0 %
Quiz 1 30 %
Quiz 2 30 %
Quiz 3 15 %

Due Dates: See detailed schedule for dates.
Date:
Date: See detailed schedule for dates.
Note:

The final grade obtained from the above marking scheme for the purpose of GPA calculation will be based on the percentage-to-grade point conversion table as listed in the current Undergraduate Calendar.

Assignment of E grade and supplemental examination for this course will be at the discretion of the Course Instructor. The rules for supplemental examinations can be found in the current Undergraduate Calendar.

Note to Students:
Students who have issues with the conduct of the course should discuss them with the instructor first. If these discussions do not resolve the issue, then students should feel free to contact the Chair of the Department by email or the Chair's Secretary to set up an appointment.

Accommodation of Religious Observance
See entry in current Undergraduate Calendar

Policy on Inclusivity and Diversity
See entry in current Undergraduate Calendar

Standards of Professional Behaviour
You are advised to read the Faculty of Engineering document Standards for Professional Behaviour in current Undergraduate Calendar, which contains important information regarding conduct in courses, labs, and in the general use of facilities.

Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult entry in current Undergraduate Calendar for the UVic policy on academic integrity.

Course Lecture Notes
Unless otherwise noted, all course materials supplied to students in this course have been prepared by the instructor and are intended for use in this course only. These materials are NOT to be re-circulated digitally, whether by email or by uploading or copying to websites, or to others not enrolled in this course. Violation of this policy may in some cases constitute a breach of academic integrity as defined in the UVic Calendar.