

# CAMOSUN COLLEGE

## PHYSICS DEPARTMENT

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### **PHYS 291 APPLIED THERMODYNAMICS**

An introductory course in the application of thermodynamics to engineering. Topics include the basic concepts and laws of thermodynamics, entropy balance, thermodynamic properties of pure, fluids physical phase equilibrium, thermodynamic potentials, availability, conversion of heat into work refrigeration, and liquefaction.

OFFERED:	Q3
CREDIT:	3
IN-CLASS WORKLOAD:	4 Lec, 2 Lab (Alternate Weeks) 1 Tutorial
OUT-OF-CLASS WORKLOAD:	6
PREREQUISITES:	Restricted to students in the Civil and Mining Engineering Bridge Program or departmental permission
COREQUISITE:	Engr 252

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### **OUTLINE**

1. **Basic Concepts**
2. **Energy and the First Law**
3. **Pure, Simple, Compressible Substances**
4. **Control Volume Analysis**
5. **The Second Law**
6. **Entropy**
7. **Availability**
8. **Vapour Power Systems**
9. **Gas Power Systems**
10. **Refrigeration and Heat Pumps**

## TEXTS AND REFERENCES

Fundamentals of Engineering Thermodynamics – Moran and Shapiro, 3<sup>rd</sup> Ed.

*It is the policy of the physics department that instructors are not required to give make-up tests. At their discretion, instructors may give make-up tests in the case of documented excuses.*