ESIROI
ÉCOLE D'INGÉNIEURS
UNIVERSITÉ DE LA RÉUNION

DEPARTMENT : *BE*
SEMESTER : *S5*

IDENTIFICATION

Course code : E3BE5EF1
ECTS : 1.5

DURATION

Lectures :	6
Tutorial classes :	22
Labs :	8
Total :	36

Project :
Personnal work :

ASSESSMENT

- 2 Continuous Assessment (CA) grades - 1 Practical Work (PW) grade - Personal Project grades

TEACHING MATERIALS

- Course and tutorial handouts - Past exam papers - Home calculation tools

LANGUAGE

English

CONTACT

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UE : UE5.3-EFFI

COURSE : Energy Thermodynamics

SCOPE OF THE COURSE

OBJECTIVES

To be able to analyze and design an energy system

COMPETENCE AND SKILLS

After this course, students should be able to apply thermodynamics to energy systems

PROGRAM

— Introduction, principles and fundamental definitions
— Different forms of energy, first law of thermodynamics
— Fluids and their properties
— Energy analysis of closed systems
— Open systems (energy, mass and species conservation)
— Second law of thermodynamics
— Entropy and its use – Exergetic analysis
— Steam power cycles
— Gas power cycles
— Refrigeration cycles and heat pumps

BIBLIOGRAPHY

— Thermodynamique et optimisation énergétique des systèmes et procédés. M. Feidt ISBN 2-85206-372-7
— Fundamentals of engineering thermodynamics (Moran J., Shapiro N.M. - 5th ed. - 2006 – Wiley) ISBN-13 978-0-470-03037-0

REQUIREMENTS

Thermodynamics Cycle 1