ESIROI
ÉCOLE D'INGÉNIEURS
UNIVERSITÉ DE LA RÉUNION

DEPARTMENT : *BE*
SEMESTER : *S6*

IDENTIFICATION

Course code :	E3B65EF5
ECTS :	1.5

DURATION

Lectures :	6
Tutorial classes :	18
Labs :	4
Total :	28

Project :
Personnal work :

ASSESSMENT

- In-class assignments - Homework assignments - Practical work

TEACHING MATERIALS

- Course and tutorial handouts - Past exam papers - In-house calculation tools

LANGUAGE

English

CONTACT

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UE : UE6.3-EFFI

COURSE : Heat and Cold Production

SCOPE OF THE COURSE

OBJECTIVES

Master the heat and cold production cycles (analysis and sizing)

COMPETENCE AND SKILLS

Mastery of refrigeration and heating production applied to buildings.

PROGRAM

- Heat exchangers
  - Introduction
  - School exchangers (pure co-current and pure counter-current)
  - Industrial exchangers, sizing methods
    - LMTD method
    - Effectiveness - NTU method
  - Heat exchanger networks
- Refrigeration production
  - Introduction/Context
  - Refrigerants, diagrams
  - Mechanical vapor compression (single-stage, two-stage cycles)
  - Environmental and economic impacts
- Heat production
  - Introduction/Context
  - Boilers, heat pumps
  - Domestic hot water production

BIBLIOGRAPHY

- F. Meunier et al. *Froid industriel*, DUNOD, ISBN 978-2-10-0511404-5
- ASHRAE Handbook : 1989 Fundamentals
- *Echangeurs thermiques*. Jacques PADET. ISBN : 2-225-84256-6

REQUIREMENTS