INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

DPT GENIE ENERGETIQUE ET ENVIRONNEMENT
ENERGETICS AND ENVIRONMENTAL ENGINEERING
INSA Campus LyonTech - 9 rue de la Physique
Batiment Sadi Carnot - 69621 VILLEURBANNE
Phone 0472438430
E-mail : gen-s@insa-lyon.fr

Thermodynamics

Energy systems design

IDENTIFICATION

CODE : GEN-5-S1-EC-DSE
ECTS : 3.0

HOURS

Lectures :	12.0 h
Seminars :	12.0 h
Laboratory :	0.0 h
Project :	0.0 h
Teacher-student contact :	24.0 h
Personal work :	36.0 h
Total :	60.0 h

ASSESSMENT METHOD

- final examination

TEACHING AIDS

- course material (ppt)

TEACHING LANGUAGE

French

CONTACT

M. CLAUSSE Marc
marc.clausse@insa-lyon.fr

AIMS

This course aims to present a first introduction to issues, tools and methods linked to the optimisation of energy system design. Students will be able to implement this approach for basic cases and to propose the corresponding technologies when needed.

CONTENT

- exergo-économic analysis
+ concept of exergy
+ exergy balance
+ F-P-L approach

- Optimisation
+ issues on energy system design
+ tools and method presentation

- Waste heat recovery
+ issues
+ heat conversion system
+ heat storage system

PRE-REQUISITE

- Applied Thermodynamic (GEN-3-thermo)
- Heat engines (GEN-4-mcthm-s1 and GEN-4-mcthm-s2)

INSA LYON
Campus LyonTech La Doua
20, avenue Albert Einstein - 69621 Villeurbanne cedex - France
Phone +33 (0)4 72 43 83 83 - Fax +33 (0)4 72 43 85 00
www.insa-lyon.fr