

ENERGY, ENVIRONMENT FIELD_10 ECTS

Introducing

Description

Évaluation

L'évaluation des acquis d'apprentissage est réalisée en continu tout le long du semestre. En fonction des enseignements, elle peut prendre différentes formes : examen écrit, oral, compte-rendu, rapport écrit, évaluation par les pairs...

Practical info

Location(s)

 Toulouse

Thermodynamics and energy

Introducing

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Practical info

Location(s)

 Toulouse

Water, Environment and Risks

Introducing

Description

1- Environmental legislation and regulation
Basics of law and regulatory instruments (TD)
Design office project: Water in a region: from use to discharge

2- Environment
- Pollutant dispersion (mechanisms, consequences)
- Characterisation and typology of waste, waste management (treatment and storage methods), ordinary and radioactive waste, environmental impact of waste.

3- Process safety
Definitions of the main types of risk in the field of processes: calculation of the probability of human impact, toxicity, different types of explosion, thermal runaway. Protection methods and devices.

4- Water: issues for actors and industries
Environmental and health issues, indicators of pollution
Main treatment stages and processes

Objectives

- Explain the principles of environmental law in France and be familiar with legal and regulatory information tools.
- Describe the main environmental problems, the principles of water and waste management and the main treatment processes.

- Know the main risks in the process industry and the mechanisms of accidents.

Necessary prerequisites

Chemistry for solutions / Unit operations . Mass and Energy balances / kinetics and thermodynamics

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Careers in Chemical Engineering (1)

Introducing

Description

presentation of various possible careers in process engineering: design office engineer (preparing calls for tender, responding to calls for tender, business management, contracts and public finance, etc.), project manager, R&D engineer, teacher-researcher, consulting and environmental management engineer, regional engineer.... . The tools specific to these professions (which form part of their knowledge and skills), the ways of accessing them and career paths are discussed.

Objectives

At the end of this CE, students will be able to:

- Identify the sectors of activity of GP3E engineers; the different possible professions (design office, territorial engineer, environmental management, research and development, production, consulting, business engineer, etc.), their specific features and the conditions for accessing them.
- build a professional network based on meetings and information provided by speakers

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Practical info

Location(s)

 Toulouse

Numerical culture and skills 2

Introducing

Description

The flow of Machine Learning
Data preparation
Machine Learning Terminology
Data types
Data visualization, quality and size
Reliability
Some activation functions
Model performance
Environmental impact

Objectives

At the end of this module, which follows the 2A module, the student will have consolidated his knowledge of the field of AI: accuracy, loss function, overfitting, batch size, visualization techniques... He will also have prepared and passed a PIX certification.

Necessary prerequisites

Basics of Python programming

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Practical info

Location(s)

 Toulouse