

IDENTIFICATION

Course code : E2CP3B7
ECTS : 2

DURATION

Lectures : 10
Tutorial classes : 6
Labs : 16
Total : 32

Project :
Personnal work :

ASSESSMENT

2 Written exams (2h/2h) + 1 Lab report

TEACHING MATERIALS

- Python Notebook course material - On-line lab manual

LANGUAGE

English

CONTACT

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UE : BATIMENT-ENERGIE

COURSE : Signal, Sensors and Metrology

SCOPE OF THE COURSE

OBJECTIVES

- To know how to analyze the static and dynamic characteristics of a sensor
- To know how to calibrate a sensor
- To understand the different types of measurement errors
- To understand the principle of sensor conditioning
- Detailed study of the PT100 probe

COMPETENCE AND SKILLS

- To be able to set up a measurement campaign
- To be able to select equipment and/or communicate with a specialist
- To know and analyze the limits of measurement

PROGRAM

- Static characteristics of a sensor : calibration curve, sensitivity, accuracy, linearity and hysteresis errors
- Influence quantities
- Dynamic characteristics : time constant, cutoff frequency, bandwidth, first-order sensor response

BIBLIOGRAPHY

REQUIREMENTS

- Mathematics and statistics
- General physics and chemistry
- Electricity
- Metrology