Practical info

Location(s)

 Toulouse

Device modeling and digital circuits architectures (reconfigurable computing)

ECTS
5 crédits

Hourly volume
55h

Introducing

Objectives

At the end of this module, the student will have understood and be able to explain (main concepts):

-the electronic device and digital electronic systems modelling
-the issue of the integration of electronic circuits
-the design and performance optimisation of digital architectures especially in frequency and power consumption. Ultra low power architectures will be studied for sustainable development.
- the technologies for green computing
- reconfigurable computing using FPGAs
-digital architectures dedicated to embedded Artificial Intelligence (AI)

The student will be able to understand the models of main electronics active devices and digital complex architectures and their optimisation for sustainable development The student will be prepared for the future technological breakout in their professional life.

Necessary prerequisites

Electrical circuits, electrostatics, analog and digital electronics, computer engineering

Practical info

Location(s)

Toulouse

Analog electronic system architecture

ECTS
4 crédits

Hourly volume
54h

Introducing

Objectives

At the end of this module, the student will have understood and be able to explain (main concepts):
- Dimension and design of analog electronic functions of information processing (filtering,
amplification, automatic gain control, voltage controlled oscillators, modulators / demodulators AM and FM;
-Optimize the signal to noise ratio in each subset of an embedded system
-Modeling architectures for robust usage constraints (consumption, temperature to dissipate), the
thermal variations of the environment and dispersions characteristics of components

Practical info

Location(s)

Toulouse

[FRANCAIS] Analyse des systèmes complexes

ECTS
4 crédits

Hourly volume
50h

Introducing

Objectives

At the end of this module, the student will have understood and be able to explain (main concepts):

- Principles, difficulties and limits of the modelling of systems with multiple inputs and multiple outputs.
- Design and implementation of control of systems with multiple inputs and multiple outputs.
- Main possible and observable behaviors which can occur in the nonlinear systems (equilibrium states, limit cycles, complex behaviors) and their evolution by variation of the parameters.
- Basis of the theory of Lyapunov

The student will be able to:
- To apprehend the implementation of the control of a process with multiple inputs and multiple outputs.
- To begin the analysis of a nonlinear system by various techniques (qualitative, geometrical, and simulations)
- To lean on numerical analysis (Matlab©) to establish, confirm, validate, simulate and implement the theoretical results discussed during the courses.

(I2MAAU11)
- Cours 3e année IMACS « Modélisation et analyse des systèmes linéaires » (I3AMAU11)
- Cours 3e année IMACS « Commande des systèmes » (I3AMAU12

Practical info

Location(s)

Toulouse

Necessary prerequisites

- Cours de 2e année « Systèmes bouclés »

Digital signal acquisition architectures and Computed controlled systems

ECTS
4 crédits

Hourly volume
60h

Introducing

Objectives

At the end of this module, the student will have understood
and be able to explain (main concepts):

The complete modelling from sensor to actuator is presented, associated with digital control technics. A specific labwork deal with the implementation of a complete chain of acquisition and digital processing in order to carry out the control of an actuator.

Practical info

Location(s)

 Toulouse

ECTS
3 crédits

Hourly volume

Introducing

Objectives

At the end of this module, the student will have understood and be able to explain:
- Programming specificities of the peripheral units for microcontroller.
- The different peripherals of a microcontroller and their behaviour.
- How to take into account hardware constraints for the design of embedded system.

The student will be able to:
- To select an architecture processor adapted to the software application and to the process configuration.
- To conceive and test the techniques of the programming by hardware interruption.
- To use debug tools o and test in the context of cross-development.
- To find information into datasheet

Practical info

Location(s)

Toulouse

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QSE APS 4A GEI – 1

ECTS
4 crédits

Hourly volume
67h

Practical info

Location(s)

📍 Toulouse

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Improve your management abilities

ECTS
4 crédits

Hourly volume
45h

Introducing

Objectives

At the end of this module, the student will

¿ Know the legal environment and responsibilities of a business
activity
¿ Be able to objectively assess the financial health of a company and evaluate the rentability of an investment
¿ Realize a market diagnosis (benchmarking) and a business diagnosis in order to make decisions and set goals and strategies
¿ Collect the market data and put in action a business plan adapted to the means and goals of the company
Module L 2
The objectives, defined in reference to the CEFRL for the 5 language activities, are specific for the language studied Chinese, German, Spanish ¿ and the level of the student.

They can be consulted on :

https://moodle.insa-toulouse.fr/course/view.php?id=44

In certain cases, students may be authorised to follow an English module instead of another language

Necessary prerequisites

Management I3CCGE51

Practical info

Location(s)

⦿ Toulouse

Non-contractual information

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Toulouse School of Management

Practical info

Location(s)

📍 Toulouse

Machine Learning

ECTS
2 crédits

Hourly volume

Practical info

Location(s)

Toulouse

Non-contractual information

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Political sciences semester 1

ECTS
3 crédits

Hourly volume

Practical info

Location(s)

📍 Toulouse

Non-contractual information

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