Advanced digital architecture

Lecturers
Jan Tobias Mühlberg (Coordinator) and Dragomir MILOJEVIC

Course mnemonic
ELEC-H505

Language(s) of instruction
English

Course period
Second term

Course content

Design of advanced architectures under constraints of performance, low-power and cost. Systems-on-Chip, Multi-Processors Systems-on-Chip, Networks-on-Chip. Co-Design.

Teaching method and learning activities

Contribution to the teaching profile

This teaching unit contributes to the following competences:

- In-depth knowledge and understanding of integrated structural design methods in the framework of a global design strategy
- In-depth knowledge and understanding of the advanced methods and theories to schematize and model complex problems or processes
- Conceive, plan and execute a research project, based on an analysis of its objectives, existing knowledge and the relevant literature, with attention to innovation and valorization in industry and society
- Correctly report on research or design results in the form of a technical report or in the form of a scientific paper
- Present and defend results in a scientifically sound way, using contemporary communication tools, for a national as well as for an international professional or lay audience
- Collaborate in a (multidisciplinary) team
- Work in an industrial environment with attention to safety, quality assurance, communication and reporting
- Develop, plan, execute and manage engineering projects at the level of a starting professional
- Think critically about and evaluate projects, systems and processes, particularly when based on incomplete, contradictory and/or redundant information
- A creative, problem-solving, result-driven and evidence-based attitude, aiming at innovation and applicability in industry and society
- Has an active knowledge of the theory and applications of electronics, information and communication technology, from component up to system level.
- Has a profound knowledge of either (i) nano- and opto-electronics and embedded systems, (ii) information and communication technology systems or (iii) measuring, modelling and control.
- Has a broad overview of the role of electronics, informatics and telecommunications in industry, business and society.
- Is able to analyse, specify, design, implement, test and evaluate individual electronic devices, components and algorithms, for signal-processing, communication and complex systems.
- Is able to model, simulate, measure and control electronic components and physical phenomena.
- Is aware of and critical about the impact of electronics, information and communication technology on society.

Other information

Contact(s)

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Evaluation method(s)

Other

Programmes

Programmes proposing this course at the Brussels School of Engineering

MA-IREL | Master of science in Electrical Engineering | finalité electronics and information technologies/unit 2 and MA-IRIF | Master of science in Computer Science and Engineering | finalité Professional/unit 2