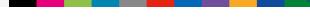


Real-time computer systems



Titulaire

François QUITIN (Coordonnateur)

Mnémonique du cours

ELEC-H410

Crédits ECTS

5 crédits

Langue(s) d'enseignement

Anglais

Période du cours

Deuxième quadrimestre

Campus

Solbosch

Contenu du cours

- › Overflow management
- 1 Chapter 6: Priority-driven scheduling
- › Foreground-background systems
- › RTOS
 - › Principles of a RTOS
 - › Main scheduling algorithms
 - › RTOS services for application programs
 - › Task management
 - › Time management
 - › Intertask communication and synchronization
 - › Dependency hazards
 - › Managing interrupts
 - › Choosing your RTOS
- 1 Chapter 7: Programming languages
 - › Introduction
 - › Selection criteria
 - › Man-machine interface
 - › Real-time
- 1 Chapter 8: Logic analyzers
 - › Introduction
 - › Classical logic analyzers
 - › Specialized analyzers
- 1 Chapter 9: Emulators
- 1 Chapter 10: Networks
 - › Networks in industrial processes
 - › Classification
 - › Architectures
 - › Layers, protocols and interfaces
 - › OSI model
 - › TCP/IP
- 1 Medium allocation control
 - › Introduction
 - › IEEE 802.3: CSMA/CD
 - › IEEE 802.11: WiFi
 - › (IEEE 802.5 and 802.4, but I usually drop this part)
 - › Conclusions
- 1 Control Area Networks (CANs)

- › CAN vs OSI
 - › Layer #1
 - › Medium
 - › Medium dependent interface
 - › Physical medium attachment
 - › Physical layer signaling
 - › Layer #2
 - › MAC protocol (CSMA/NDA)
 - › Logical Link control
 - › Conclusions
- › Has an in depth scientific knowledge, understanding and skills in at least one of the subfields needed to design, produce, apply and maintain complex mechanical, electrical and/or energy systems;
- › Has an in-depth understanding of safety standards and rules with respect to mechanical, electrical and energy systems.

Support(s) de cours

Université virtuelle

Autres renseignements

Lieu(x) d'enseignement

Solbosch

Contact(s)

Titulaire: François QUITIN

Assistant: Youssef AGRAM

Méthode(s) d'évaluation

Autre, Examen oral et Projet

Méthode(s) d'évaluation (complément)

1/3 of the mark is given on a project that is realized throughout the labs. There is no second session mark for the project, i.e. the first session mark of the project will count for the final grade of the course.

2/3 of the mark is given on the written exam. During the written exam, the student will receive questions that cover both theoretical and practical aspects covered during the course. The written exam is open-book, i.e. all notes are permitted.

Construction de la note (en ce compris, la pondération des notes partielles)

1/3 on the lab project. There is no second session mark for the project, i.e. the first session mark of the project will count for the final grade of the course.

2/3 on the written exam.

Langue(s) d'évaluation principale(s)

Anglais

Programmes

Programmes proposant ce cours à l'école polytechnique de Bruxelles

MA-IRCB | Master : ingénieur civil biomédical | finalité Spécialisée/bloc 2, MA-IREM | Master : ingénieur civil électromécanicien | finalité Spécialisée/bloc 1 et MA-IRIF | Master : ingénieur civil en informatique | finalité Spécialisée/bloc 1 et finalité Spécialisée/bloc 2



