



Faculty of Applied Sciences

ELEC2660 Power electronic

[30h+30h exercises] 5 credits

This course is taught in the 1st semester

Teacher(s): Francis Labrique
Language: French
Level: Second cycle

Aims

This course is devoted to the analysis of power electronic converters and to their application to motor control and power management in electrical networks.

Main themes

Identical to the contents of the course

Content and teaching methods

- Main types of power semiconductors
 - Basic structure and working principle of power electronic converters
 - DC-DC, AC-DE, DC-AC and AC-AC converters
 - Application to motor control and power management in electrical networks
 - Dynamical modelling and control of power electronic converters as part of automatic systems.
- Design and realization of power electronic converters in the frame of the project in Mechatronics
 Study and simulation of a power electronic converter.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisites :

ELEC1370 : Measurements and electrical circuits

Assessment :

Exam during the session + assessment on the practical works during the year

Support :

This lecture refers to : G. Segquier, R. Bausière, F. Labrique : Electronique de puissance, éd. Dunod

Other credits in programs

ELME22/E	Deuxième année du programme conduisant au grade d'ingénieur civil électro-mécanicien (énergie)	(5 credits)	
ELME22/M	Deuxième année du programme conduisant au grade d'ingénieur civil électro-mécanicien (mécatronique)	(5 credits)	Mandatory
ELME23/M	Troisième année du programme conduisant au grade d'ingénieur civil électro-mécanicien (mécatronique)	(5 credits)	