

Faculty of Applied Sciences



ELEC2313 Electronic control of electromechanical converters

[30h+30h exercises] 5 credits

This course is taught in the 2nd semester

Teacher(s): Bruno Dehez (supplée N.), Francis Labrique
Language: French
Level: Second cycle

Aims

The course deals with the dynamical modelling of electromechanical converters and the main control strategies when they are part, as actuators, of automatic control systems.

Main themes

Identical to the contents of the course

Content and teaching methods

- Remainder on magnetic circuits and polyphase systems : application to the transformers,
- General theory of electromagnetic converters
- Principle of rotating field converters
- Use of rotating field converters as motors or generators : analysis of induction and synchronous machines connected to the mains
- Classical and brushless DC machines
- Variable reluctance machines

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

Support :

The course relies on the book "Electromécanique, convertisseurs d'énergie et actionneurs" (Dunod ed., 2001) and the associate website www.electromecanique.net

Prerequisites :

Electromechanical converters (ELEC2310) or Electrotechnics (ELEC2753)

Assessment :

Exam during the session for one part, and assessments during the year for the part "practical works"

Other credits in programs

ELEC22	Deuxième année du programme conduisant au grade d'ingénieur civil électricien	(5 credits)	
ELME22/M	Deuxième année du programme conduisant au grade d'ingénieur civil électro-mécanicien (mécatronique)	(5 credits)	Mandatory