



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, Francis Labrique (coord.), Ernest Matagne
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)

Prerequisites :

Electromechanical converters (ELEC1310) 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

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)	