



# Faculté des sciences appliquées

## FSA

### ELEC2313 ELECTRONIC CONTROL OF ELECTROMECHANICAL CONVERTERS

[30h+30h exercises] 5 credits

This course is taught in the 2nd semester

**Teacher(s):** Damien Grenier, Francis Labrique  
**Language:** french  
**Level:** 2nd cycle course

#### 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.

#### Content and teaching methods

- Dynamic modelling and control of DC machines including brushless DC machines
- Dynamic modelling and vector control of synchronous machines
- Control of switched reluctance machines
- Dynamic modelling and main control strategies of induction machines (v/f control, vector control, direct torque control)

#### 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](http://www.electromecanique.net)

Prerequisites :

Electromechanical convertors (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

<b>ELEC22</b>	Deuxième année du programme conduisant au grade d'ingénieur civil électricien	(5 credits)	
<b>ELME22/M</b>	Deuxième année du programme conduisant au grade d'ingénieur civil électro-mécanicien (mécatronique)	(5 credits)	Mandatory
<b>FSA3DA</b>	Diplôme d'études approfondies en sciences appliquées	(5 credits)	
<b>FSA3DS/EL</b>	Diplôme d'études spécialisées en sciences appliquées (électricité)	(5 credits)	
<b>FSA3DS/TO</b>	Diplôme d'études spécialisées en sciences appliquées (automatique)	(5 credits)	