

Faculty of Applied Sciences



ELEC2753 POWER ELECTRICAL ENGINEERING

[30h+30h exercises] 5 credits

This course is taught in the 2nd semester

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

Aims

Conversion of electrical power is essential in production, transmission and utilization of electricity. The aim of the course is to provide a basis understanding of the principles involved in the working of most widespread electrical and electromechanical converters.

Examples of applications are presented.

Main themes

Identical to the contents of the course

Content and teaching methods

1 Static converters

- transformers
- power electronic converters : rectifiers, choppers, inverters

2 Electromechanical converters

- principles of electromechanical conversion
- rotating field converters : induction and synchronous machines
- direct current machines
- stepping and reluctance motors

1

3 Applications

- production and transmission of electrical power
- variable speed drives

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

Prerequisites :

Basic knowledge in electricity and mechanics

Contents and methods :

The course is based on lectures completed by exercises and practical laboratory training

Support :

A course text and transparencies are available in french

Bibliographic reference : "Electromécanique : Convertisseurs d'énergie et actionneurs", H. Buyse, D. Grenier, F. Labrique, E. Matagne, Dunod 2001

Other credits in programs

MAP22	Deuxième année du programme conduisant au grade d'ingénieur civil en mathématiques appliquées	(5 credits)	
MECA22	Deuxième année du programme conduisant au grade d'ingénieur civil mécanicien	(5 credits)	Mandatory
MECA23	Troisième année du programme conduisant au grade d'ingénieur civil mécanicien	(5 credits)	