



Faculté des sciences appliquées

FSA

ELEC2661 **SWITCH MODE ELECTRONIC POWER SUPPLIES**

[30h+30h exercices] 5 credits

This course is taught in the 1st semester

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

Aims

The aim of the course is to study the main types of electronic power supplies using power semiconductors working as switches.

Content and teaching methods

- DC switch mode power supplies with or without sinusoidal input
- Resonant DC switch mode power supplies
- Uninterruptible AC power supplies

For each type of power supply the main converter topologies are analysed. The analysis includes the working principles of the converters, their dynamic modelling and their control. The domain of application of each type of converter is also discussed.

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

Teaching method :

The practical works consists in the design, simulation and realization of a switch mode power supply

Prerequisites :

ELEC2370 : Measurements and electrical circuits

Assessment :

Oral examination and a report on the practical work

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)
ELME23/M	Troisième année du programme conduisant au grade d'ingénieur civil électro-mécanicien (mécatronique)	(5 credits)
FSA3DA	Diplôme d'études approfondies en sciences appliquées	(5 credits)