



Faculté des sciences appliquées

FSA

ELEC2631 ELECTROMAGNETIC COMPATIBILITY AND DISPERSED GENERATION OF ELECTRICITY

[30h+7.5h exercises] 4 credits

This two-yearly course is taught in 2004-2005, 2006-2007,...

This course is taught in the 2nd semester

Teacher(s): Noël Janssens, Alain Robert
Language: french
Level: 2nd cycle course

Aims

At the end of the course, students will be able to :

- use the fundamental concepts of the electromagnetic compatibility (requirements to be fulfilled by devices to be put on the market; adequate design of electrical installations, particularly wiring and grounding practices),
- grasp the issue of dispersed generation integration in a power system, considering technical and safety aspects.

Content and teaching methods

General aspects of electromagnetic compatibility :

- sources of disturbances and coupling mechanisms
- characterization of disturbance levels
- emission and immunity levels of equipment

N.B. The problematic is close to - and partially overlapping - Power Quality (see course ELEC2595). Only phenomena not involved in ELEC2595 are considered here, i.e. 1) HF phenomena, 2) all phenomena (HF or BF) reaching equipment other than through the electricity supply (input/output of signals, grounding connections, radiation).

Electrical aspects of the dispersed generation and compatibility with the power system :

- . electrical aspects description of the various dispersed generations types (power control, voltage control, fluctuations, etc.) and the interactions between generator and electric grid,
- . technical management issue of power systems having a significant part of dispersed generation.

Some safety and resistibility concerns :

- aspects linked to grounding practices,
- aspects linked to dispersed generation

Teaching method :

- interactive course, based on a thorough professional experience in the domain,
- yearly updated syllabus
- practical exercises are proposed, to be further considered at the plenary lessons

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

Prerequisites :

Nihil

Assessment :

Oral examination

Other credits in programs

ELEC22	Deuxième année du programme conduisant au grade d'ingénieur civil électricien	(4 credits)
ELME22/E	Deuxième année du programme conduisant au grade d'ingénieur civil électro-mécanicien (énergie)	(4 credits)
ELME23/E	Troisième année du programme conduisant au grade d'ingénieur civil électro-mécanicien (énergie)	(4 credits)
FSA3DS/EL	Diplôme d'études spécialisées en sciences appliquées (électricité)	(4 credits)