ELEC2630 DYNAMICS OF ELECTRIC POWER SYSTEMS

[30h+7.5h exercises] 4 credits

This two-yearly course is taught in 2007-2008, 2009-2010,...
This course is taught in the 2nd semester

Teacher(s): Noël Janssens, Alain Robert
Language: French
Level: Second cycle

Aims

At the end of the course, students will be able to :
- Master power system modelling and simulation and understand the stability issue,
- Grasp the technical aspects and the economic weight of frequency and voltage amplitude control,
- Understand the physics of transient phenomena having in mind to limit their importance and effects

Main themes

Identical to the contents of the course

Content and teaching methods

Bulk power system dynamics
. dynamic models of the power systems
. dynamics of the primary frequency control
. dynamics of the secondary load frequency control
. steady state stability, transient stability, long term stability, voltage stability
. means to improve the power systems stability
Localized dynamic phenomena
. switching on and off power installations
. transient overvoltages
. mitigation methods
Interactive course, based on a thorough professional experience in the domain
Dynamic simulations making use of MatLab/Simulink
Practical exercices are proposed, to be further considered at the plenary lessons

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

Prerequisites :
ELEC2520 : Electric Power Systems (Réseaux d'Energie électrique).
Assessment :
Laboratory report
Oral examination
Support :
Yearly updated syllabus