UCL Faculté des sciences appliquées

FSA

ELEC2630 DYNAMICS OF ELECTRIC POWER SYSTEMS

[30h+7.5h exercises] 4 credits

This two-yearly course is taught in 2005-2006, 2007-2008,...
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 :
- 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

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