

EFS8AA INTRODUCTION INTO ELECTRICAL ENGINEERING

EFS8AA		ECTS Credits: 2		Semester: S8	
Introduction into Electrical Engineering		Duration: 21 h + 3 h Dept + 3 h RTE			
Person(s) in charge:					
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Keywords: Electrical conversion, Electromechanical conversion					
Prerequisites: Initial concepts of electrical circuits and electromagnetism					
Objective:					
Describe the principle of the various devices of electrical engineering and how they interact.					
Program and Contents:					
<ul style="list-style-type: none">• One-phase and three-phase electrical circuits ;• Electrical networks, initial concepts ;• Transformation of electric energy by steady-state converters : transformers, rectifiers, power inverters and choppers ;• Electromagnetic converters : synchronous motors and alternators, induction motors, reluctance motors, DC machines ;• Case study of induction heating ;• Devices studied in class are set into operation at the National school of electrical and mechanical engineering (ENSEM)• Electrical networks, advanced concepts - visit of the dispatching of East France, by Benjamin L�vy - RTE.					
Abilities:					
Levels		Description and operational verbs			
Know		The usual electrical engineering devices			
Understand		The conversion of electrical and electromechanical energies			
Apply		The science's modelling tools			
Analyse		A series of converters accomplishing a specified task			
Summarise		Identify the components responsible for a specific function in any given electrical circuit			
Assess		Different solutions possible for implementing several specific functions			
Evaluation:					
<input checked="" type="checkbox"/> Written test		<input checked="" type="checkbox"/> Continuous Control		<input type="checkbox"/> Oral report	
		<input type="checkbox"/> Project		<input type="checkbox"/> Written report	