Electrical drives

Lecturers
Johan GYSELINCK (Coordinator) and Omar HEGAZY

Course mnemonic
ELEC-H406

ECTS credits
5 credits

Language(s) of instruction
English

Course period
Second term

Campuses
Solbosch and Plaine

Course content

The electrical drives studied are:

- DC machine drives;
- Grid-connected synchronous machines (generators and motors operating at constant speed);
- Synchronous machine drives (wound-rotor, permanent-magnet, reluctance...);
- Induction machine drives.

Objectives (and/or specific learning outcomes)

To study the most commonly used electrical drives, with a focus on the supply and control of the power electronic converter (if any).

Teaching method and learning activities

Ex cathedra classes (24h)

Practical work: simulation (with MATLAB/Simulink/Simscape/Electrical/Specialized Power Systems) and laboratory sessions (36h)

References, bibliography and recommended reading

- P.C. Sen, *Principles of electric machines and power electronics*, John Wiley & Sons, 2nd edition, 1997, 610 p.
- Boldea, S.A. Nasar, *Electric drives*, CRC Press, 1rst edition, 1999, 411 p.
- N. Mohan, T. Undeland, W. Robbins, *Power electronics - converters, applications and design*, John Wiley & Sons, 3rd edition, 2004, 802 p.
- B. Bose, *Power electronics and motor drives - advances and trends*, Elsevier, 1rst edition, 2006, 917 p.
- T. Wildi, G. Sybille, *Electrotechnique* (in French), DeBoeck Unversité, 4ième édition, 2005, 1215 p.

Course notes

Université virtuelle

Other information

Place(s) of teaching

Plaine and Solbosch

Contact(s)

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Evaluation method(s)

written examination and Practice exam

Main language(s) of evaluation

English

Programmes

Programmes proposing this course at the Brussels School of Engineering

MA-IREM | Master of science in Electromechanical Engineering | finalité Professional/unit 1, finalité Professional/unit 2 and finalité Operations engineering and management/unit 1