COURSE DETAIL

ELECTRIC DRIVES
Country Italy
Host Institution University of Bologna
Program(s) University of Bologna
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Mechanical Engineering Electrical Engineering
UCEAP Course Number 183
UCEAP Course Suffix
UCEAP Official Title ELECTRIC DRIVES
UCEAP Transcript Title ELECTRIC DRIVES
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description

This course is part of the Laurea Magistrale program. The course is intended for advanced level students only. Enrollment is by permission of the instructor. This course offers a study of electric drives. The course discusses topics including fundamentals of electromechanical conversion systems and fundamentals of electrical machines; DC machines; brushless machines with trapezoidal back emf; brushless machines with sinusoidal back emf; and principle of static conversion. The course discusses: the fundamentals of static and electromechanical conversion systems; the configuration of basic power electronic conversion systems, of main electrical machines, either direct current (DC) or alternate current (AC), and of electric drives used in automotive sector; the topology, control principles, input, and output characteristics of main DC and AC electric drives; modeling power electronic converters, control system, electrical machines, and full drive systems with reference to application for torque and speed control; and how to represent an electric drive in terms of energetic conversion system, for the integration in a multiphasic model of a vehicle.

Language(s) of Instruction
English

Host Institution Course Number
28553,91300

Host Institution Course Title
ELECTRIC DRIVES

Host Institution Campus
BOLOGNA

Host Institution Faculty

Host Institution Degree

LM in ADVANCED AUTOMOTIVE ENGINEERING; LM in MECHANICAL ENGINEERING

Host Institution Department
Industrial Engineering

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