

FACULTY OF **ENGINEERING**

DEGREE COURSE: **INDUSTRIAL ENGINEERING**

MASTER DEGREE: **INDUSTRIAL ENGINEERING / ENERGY**

SUBJECT: GRIDS AND ELECTRICAL POWER SYSTEMS

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OBJECTIVES

The course aims at providing an overview of the electricity grids for different values of voltages: it also aims at providing the basic elements necessary to analyze and project electrical power systems.

CONTENTS

1. Production-transmission-distribution of electrical power
2. Grid and Italian energy market
3. The intelligent networks (Smart Grid)
4. The electrical systems in different values of voltages
5. Calculation of the electric network and load flow
6. Study of three-phase electrical systems
7. Project of electrical systems with transformer substation

LEARNING OUTCOMES

At the end of the course students will have acquired the knowledge necessary to project electrical systems with transformer substation

ASSESSMENT

Written exam: multiple-choice tests and open-ended questions

RECOMMENDED TEXTBOOKS

J. Duncan Glover, Mulukutla S. Sarma, Thomas Overbye, *Power Systems Analysis and Design*, Cengage, 2012. ISBN: 978-8131516355
