



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

### Elementi di Elettronica

2425-3-E3001Q052

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#### Aims

The course target is providing the basic principles of analog electronics, concerning electronics device operations, bias condition, and signal processing.

#### Contents

Introduction to analog electronics, with the study of simple circuits with diodes, MOS transistors and operational amplifiers.

#### Detailed program

Electrical network theory.

Semiconductor diode, Bias. Use of the diode for large signals. Small signal equivalent circuit.

MOS Transistor. Operations, bias point, small signal equivalent circuit, gain stage with a transistor.

Operational amplifier: circuit with an operational amplifier.

Notes on noise in electronic devices

#### Prerequisites

Notions of fundamental Physics: Electricity and Magnetism

## **Teaching form**

The lessons will be held in frontal mode in delivery form

## **Textbook and teaching resource**

Notes and exercise of the course  
Sedra, Smith, "Microelectronics circuits"

## **Semester**

I semester

## **Assessment method**

Written text only at the end of the course with usually 3 exercises similar to those discussed at the lectures of analysis and synthesis of simple networks with electronics components.

Alternatively, during the year oral exam, that is a colloquium in which the student is requested to know the topics discussed at the lessons and present in the course notes. In particular, the student is required to know the main circuit topologies discussed at lessons, to solve few circuits with electronics components, and to evaluate the effects of possible changes of the circuits.

Oral exams are scheduled on appointment.

## **Office hours**

Upon appointment (via mail [andrea.baschirotto@unimib.it](mailto:andrea.baschirotto@unimib.it))

## **Sustainable Development Goals**

QUALITY EDUCATION

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