

# UNIVERSITÀ DEGLI STUDI DI MILANO-BICOCCA

### **COURSE SYLLABUS**

## **Neuromorphic Computing: materials and devices**

2526-116R-M07

#### **Title**

Neuromorphic Computing: materials and devices

#### Teacher(s)

Sabina Spiga and Stefano Brivio (CNR, MDM-Agrate)

#### Language

**English** 

#### **Short description**

Sabina Spiga - MODULO A - Introduction to Neuromorphic Computing and Role of Resistive Switching Memories

- 1: Introduction to Neuromorphic Computing: basics concepts and role of novel materials and devices
- 2: Resistive Switching Memories and Memristive Devices: materials, technologies and neuromorphic functions

Stefano Brivio - MODULO B - Resistive Switching Memories: Device physics and Applications for Neuromorphic Computing

- 3: Physics of Resistive Switching Memories: mixed electronic and ionic effects at the nanoscale
- 4: Computing with Resistive Switching Memories: in-memory computing, inference and learning, spiking neural networks

#### **CFU / Hours**

8 hours, 1 CFU

## **Teaching period**

May 18-21, 2026

## **Sustainable Development Goals**