



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

### Deep Learning for Physicists

2223-113R-07

---

#### Title

Deep Learning for Physicists

#### Teacher(s)

Prof. Stefano Giagu

#### Language

English

#### Short description

2h lecture: references and concepts on neural networks and DL

2h lecture: Graph Neural Networks

2h lecture: Attention and Transformers

2h lecture: Generative models

hands-on 1 ~3h: implementation and application of a GNN to an interesting physics problem

hands-on 2 ~3h: implementation and application of a Transformer for example to do jet-tagging at the LHC

hands-on 3 ~3h: implementation and application of a generative model for example based on normalizing flow or

on a diffusion model

### **CFU / Hours**

2 CFU/16 hours

### **Teaching period**

September/October

### **Sustainable Development Goals**

---