

## COURSE SYLLABUS

### **Scintillating materials and their applications**

2526-116R-M10

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#### **Title**

SCINTILLATING MATERIALS AND THEIR APPLICATIONS

#### **Teacher(s)**

Prof. Mauro Fasoli, Dr. Francesca Cova

#### **Language**

English

#### **Short description**

The primary goal of the course is to provide PhD students with an advanced understanding of the principles and applications of scintillators. The program covers fundamental aspects of scintillation as well as advanced concepts and technological applications.

Specifically, the topics include

- Physical processes of scintillation
- Key scintillator parameters and their estimation
- Role of Defects in scintillation

- History and Frontiers in scintillators research
- Scintillating nanocrystals and their embedding in polymeric matrices
- Scintillators in High Energy Physics and rare events search
- Scintillators for nanomedicine and medical diagnostics
- Introduction to GEANT4 and simulations of radiation-matter interaction

## **CFU / Hours**

1 CFU / 8 hours

## **Teaching period**

20 - 23 January 2026 in the Seminar room 1st floor U5

Tuesday 20th from 10.30 to 12.30

Wednesday 21st from 10.30 to 12.30

**Thursday 22nd from 9.30 to 11.30**

Friday 23rd from 10.30 to 12.30

## **Sustainable Development Goals**

INDUSTRY, INNOVATION AND INFRASTRUCTURE

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