

# DOTTORATO IN FISICA DEGLI ACCELERATORI

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**SAPIENZA**  
UNIVERSITÀ DI ROMA



Istituto Nazionale di Fisica Nucleare

# GENERAL INTRO

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- PhD programme oriented to the **Accelerator Theory and Practice** (the only one in Italy)
- **Based at Sapienza Univ. but intended as a National PhD**
- **Funded by INFN (6 grants) and Sapienza (1 grant)**
- Lectures give **principles of the Accelerator Theory and to their applications** in the different domains of this science
- Students required to follow both **theoretical and practical lectures** in the INFN laboratories
- **Possibility to follow classes from remote**
- **Research activity can be performed in remote sites**
- **All info in**
  - [https://phd.uniroma1.it/web/FISICA-DEGLI-ACCELERATORI\\_nD3504\\_IT.aspx](https://phd.uniroma1.it/web/FISICA-DEGLI-ACCELERATORI_nD3504_IT.aspx)

# PHD IN A NUTSHELL

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- **First year:**
  - follow **classes**: total of about 144 hours (18 credits)
  - follow **seminars** (mandatory)
  - present (by end of December) **study plan** to be approved by the Teaching Board
- **Second year:**
  - (beginning of the year) prepare a **thesis project**
  - (end of the year) present a **seminar on the project**
  - based on both, **admission to the third year** by Board
  - **hand's on** training
- **Third year:**
  - **work on PhD thesis**
  - **Thesis finalisation** and final seminars **three months before thesis defense**
  - **Three slots for thesis defense: January - May - September**

# COURSES AND SEMINARS

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- *1<sup>st</sup> semester:*
  - **JUAS** (I and II courses). **Please register!**, deadline is beginning of next week.
- *2<sup>nd</sup> semester:*
  - **Alesini**: “Physics, Technology and Applications of Linear Accelerators” (3), Mar-May
  - **Ferrario**: “Physics of High Brilliance Accelerators” (6), Mar-May
  - **Migliorati, Metral, Mostacci**: “Collective effects in circular accelerators” (3) Apr-Jun
  - **Pietropaolo (ENEA)**: “Strumentazione ed impianti per neutroni e applicazioni” (3)
  - **Seminars**
- *3<sup>rd</sup>, 4<sup>th</sup> semester:*
  - **Seminars. Hands-on**
- *5<sup>th</sup>, 6<sup>th</sup> semester:*
  - **Seminars**
- **Detailed program of each course (last year):** <https://phd.uniroma1.it/web/offertaFormativa37.aspx?i=3504&l=IT>
- In principle **courses from PhD and Master in Physics can be added** (need to be approved by the PhD board)

# DETAILS ABOUT JUAS PROGRAM


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- **JUAS 1 course is mandatory**
  - Can be replaced by other courses in case you have already followed JUAS 1 in the past
- **To be followed in person**
  - Archamps 9 January → 10 February 2023
- Letter from supervisor will be replaced by a letter I will **circulate later today**
- **To be uploaded**
  - Copy of passport/ID needed
  - Your CV
- Please, **do not pay for fee and accommodation for now** (details will come later)
- **Subsistence** (50% increase of the PhD grant) **by Sapienza**

# THESIS TOPICS












- **Today's presentations will be used as repository of proposals**

## Dottorato in Fisica degli Acceleratori: Incontri con gli studenti del I anno

 Friday 11 Nov 2022, 10:30 → 12:45 Europe/Rome

Description zoom link

<https://uniroma1.zoom.us/j/97133955143>

<b>10:30</b>	→ 10:50	<b>presentazione dottorato in acceleratori</b> Speaker: Daniele Del Re (Istituto Nazionale di Fisica Nucleare)	🕒 20m 
<b>10:50</b>	→ 11:10	<b>temi su beam dynamics</b> Speaker: Mauro Migliorati (Istituto Nazionale di Fisica Nucleare)	🕒 20m 
<b>11:10</b>	→ 11:30	<b>temi su radiation sources</b> Speakers: Andrea Renato Rossi (Istituto Nazionale di Fisica Nucleare) , Luca Serafini (Istituto Nazionale di Fisica Nucleare)	🕒 20m 
<b>11:30</b>	→ 11:45	<b>temi su fisica medica</b> Speaker: Alessio Sarti (La Sapienza - INFN Roma 1)	🕒 15m 
<b>11:45</b>	→ 12:00	<b>temi su plasma acceleration</b> Speaker: Massimo Ferrario (Istituto Nazionale di Fisica Nucleare)	🕒 15m 
<b>12:00</b>	→ 12:15	<b>temi per target and particle sources</b> Speaker: Gianluca Cavoto (Istituto Nazionale di Fisica Nucleare)	🕒 15m 
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<b>12:15</b>	→ 12:30	<b>temi su cultural heritage</b> Speaker: Patrizio Antici (INRS)	🕒 15m 