



PhD in PHYSICS
LIST OF COURSES
Academic Year 2024-2025

<i>COURSE</i>	<i>TEACHER(S)</i>	<i>CONTACT</i>	<i>PERIOD</i>	<i>LOCATION</i>
Experimental Tests of the Standard Model	Fabio Cossutti	fabio.cossutti@ts.infn.it	Tentative period March - June	TO BE AGREED.
Bayesian Statistics with Numerical Applications	Edoardo Milotti	milotti@units.it	Monday 24/2, ore 10-12 Tuesday 25/2, ore 10-12 Wednesday 26/2, ore 10-12 Giovedì 27/2, ore 14-16 Monday 7/4, ore 10-12 Tuesday 8/4, ore 10-12 Wednesday 9/4, ore 14-16 Giovedì 10/4, ore 14-16 Monday 5/5, ore 11-13 Tuesday 6/5, ore 11-13 Wednesday 7/5, ore 14-16 Giovedì 8/5, ore 10-12	Dipartimento di Fisica Via Valerio 2
Quark Gluon Plasma: theory and experimental observations	Enrico Fragiaco	enrico.fragiacomo@ts.infn.it	Tentative period 28/04 - 09/05	TO BE AGREED.
Cosmic-Ray and Gamma-ray Astrophysics	Riccardo Munini / Francesco Longo	riccardo.munini@ts.infn.it, francesco.longo@ts.infn.it	Tentative period April - May	TO BE AGREED.
Simulation of particle interactions	Francesco Longo / Valentina Zacco	francesco.longo@ts.infn.it , valentina.zacco@ts.infn.it	Tentative period May - July	TO BE AGREED.
Introduction to RooFit	Michele Pinamonti	michele.pinamonti@ts.infn.it	Tentative period End of September - October	TO BE AGREED.
Advanced data analysis techniques with machine and deep learning	Grazia Luparello	grazia.luparello@ts.infn.it	29/4, 9 to 11 a.m. 30/4, 9 to 11 a.m. 5/5, 9 to 11 a.m. 6/5, 9 to 11 a.m. 7/5, 9 to 11 a.m.	Dipartimento di Fisica Via Valerio 2



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			12/5, 9 to 11 a.m. 13/5, 9 to 11 a.m. 14/5, 9 to 11 a.m.	
Imaging with X-rays - fundamentals and applications	Pierre Thibault Vittorio Di Trapani	pthibault@units.it, vittorio.ditrapani@units.it	Tentative period April - June	TO BE AGREED.
Astrophysical sources of gravitational waves	Giacomo Principe	giacomo.principe@ts.infn.it	Tentative period 23/5 - 13/6	TO BE AGREED.
Introduction to Density Functional Theory	Maria Peressi Davide Bidoggia	peressi@units.it , davide.bidoggia@units.it	Tentative period March - April	TO BE AGREED.
Low Temperature Physics: gases and Fluids	Luis Peña Ardila	luisaldemar.penaardila@units.it	Tentative period autumn 2025	TO BE AGREED.
Low Temperature Physics: Quantum Hall effect and Topology	Federico Becca	fbecca@units.it	Tentative period September	TO BE AGREED.
Modern Tools for Computational Physics	Daniele Coslovich	dcoslovich@units.it	Tentative period February - April	TO BE AGREED.
Free Electron Laser and Synchrotron based spectroscopies: getting to the nanometer with femtosecond resolution	Claudi Masciovecchio	claudio.masciovecchio@elettra.eu	Tentative period April - June	TO BE AGREED.
Advanced Spectroscopy of Quantum Materials	Fulvio Parmigiani	fulvio.parmigiani@elettra.eu	Tentative period March - June	TO BE AGREED.
Principles of Free-Electron laser physics	Luca Giannessi	luca.giannessi@elettra.eu	Tentative period March - April	TO BE AGREED.
Modern experiments in quantum optics and quantum information	Natalia Bruno Francesco Scazza Matteo Marinelli	bruno@lens.unifi.it, francesco.scazza@units.it, matteo.marinelli@units.it,	Tentative period Second half of September	TO BE AGREED.
Non-equilibrium approaches to complex quantum materials	Daniele Fausti	dfausti@units.it	Tentative period October	TO BE AGREED.
Advanced topics in supersymmetric and conformal QFT's	Roberto Valandro Lorenzo Di Pietro	ldipietro@units.it, roberto.valandro@ts.infn.it	Tentative period March - June	TO BE AGREED.



<i>COURSE</i>	<i>TEACHER(S)</i>	<i>CONTACT</i>	<i>PERIOD</i>	<i>LOCATION</i>
Decoherence in Open Quantum Systems	Matteo Carlesso	matteo.carlesso@units.it	Tentative period March – April	TO BE AGREED.
Statistical Field Theory	Andrea Trombettoni	atrombettoni@units.it	Tentative period April - May	TO BE AGREED.
Formation of cosmic structures	Stefano Borgani Matteo Costanzi	stefano.borgani@inaf.it, matteo.costanzi@inaf.it	Tentative period May 12 – June 12	TO BE AGREED.
Active galactic nuclei	Fabrizio Fiore	fabrizio.fiore@inaf.it	Tentative period April - June	TO BE AGREED.
Galaxy formation	Gabriella De Lucia	gabriella.delucia@inaf.it	Tentative period October – November	TO BE AGREED.
Galactic Archaeology in the era of large surveys. From chemical abundances to galaxy formation and evolution	Francesca Matteucci	francesca.matteucci@inaf.it	Tentative period late March-early April.	TO BE AGREED.
Gamma Ray Bursts: observations and theoretical implications	Francesco Longo	francesco.longo@ts.infn.it	Tentative period June	TO BE AGREED.
Introduction to parallel computing	Luca Tornatore	luca.tornatore@inaf.it	Tentative period September - October	TO BE AGREED.
Physics Education Research and Physics Communication	Valentina Bologna Francesco Longo	valentina.bologna@units.it , francesco.longo@ts.infn.it	Tentative period May	TO BE AGREED.