



UniTs - University of Trieste

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Faculty of Scientific and Data Intensive Computing  
Department of mathematics informatics and geosciences

# Introduction to Galaxies and Astrophysics

*Lecturers:*

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*Author:*

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# Preface

As a student of Scientific and Data Intensive Computing, I've created these notes while attending the **Introduction to Galaxies and Astrophysics** course.

This is an optional course for the second semester of the first year my master's degree, but this course is also available for students of the Physics department, anyway, next year it will probably be removed from both curricula.

The course is held by Prof. Alexandro Saro, a researcher at the INAF Astronomical Observatory of Trieste; the lecture of the course are taken in Italian, but the notes are written in English conformly to the language of the master's degree; however, some images or text could be in Italian due to the original language of the slides.

The first part of the course will be focused on gravity and Einstein's theory of general relativity:

- Non euclidean geometry
- Tensors
- Principles and equations of Einstein
- Gravitational waves

The second part of the course will be focused on cosmology:

- Robertson-Walker metric
- Hubble law
- Friedmann equations
- Cosmological models
- Precision cosmology (hints)

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