



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Laboratory of Data Analysis

2122-1-F5802Q001

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#### Aims

Provide core knowledge and skills for planning and conducting a scientific investigation in astrophysics using archival observations and theoretical models.

#### Contents

Brief introduction on the basic principles of galaxy formation and evolution, learn how to formulate a scientific question, design and conduct a scientific experiment in astrophysics using archival observations, analysis and data mining of observations and theoretical models, how to present results in a science report.

#### Detailed program

Galaxy formation and evolution: collapse of dark matter, cooling, gas accretion and star formation, feedback

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## **Prerequisites**

Undergraduate degree in physics.

Students particularly interested in a more in depth understanding of how astrophysical data are acquired are encouraged to follow the "Laboratory of data acquisition" offered in the first semester.

Students interested in deepening their understanding of galaxy formation and evolution should also consider the course "Cosmic Structure Formation".

## **Teaching form**

Introductory workshops on elements of galaxy formation and evolution, formulating a valid scientific question, structuring a scientific investigation, report writing. Hands-on sessions to conduct the analysis and mining of archival data.

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## **Textbook and teaching resource**

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## **Semester**

Second semester.

## **Assessment method**

Written report and oral exam on the material presented in the report and discussed during the workshops.

## **Office hours**

By appointment (via email).

