



**Laurea Magistrale in Biologia e Tecnologie Cellulari**

*INSEGNAMENTI OPZIONALI DEL SETTORE BIOMOLECOLARE*

**THE **S**CIENTIFIC **M**ETHOD AND ITS  
**A**PPPLICATIONS IN **B**IOLOGY  
*'SMAB'***

**6 CFU**



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# Elearning

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Italiano (it)

🔔 🗨️ Franco Cardone 🖱️

- DASHBOARD | CORSI | LAUREE | SCIENZE MATEMATICHE, FISICHE E NATURALI | BIOLOGIA | LAUREE MAGISTRALI | BIOLOGIA E TECNOLOGIE CELLULARI | INSEGNAMENTI OPZIONALI DEL SETTORE BIOMOLECOLARE | METODO SCIENTIFICO

## Il metodo scientifico ed applicazioni in biologia

🗨️ Forum News

### The scientific method and applications in biology

#### General Information

For the first time, this year the course will be taught in English. Unfortunately, the textbook is in Italian, but the classes will be videorecorded and made available on YouTube, so that the students will be able to prepare for exams without using the book.

##### Aims of the course

The scientific method and its applications in biology. Epistemological foundations of science, conceptual and experimental approaches in biology. The course focuses on scientific reasoning and its countless shapes and applications, rather than the transmission of notions. The students will be introduced to select scientific papers and requested to comment and discuss them, with the goal of fostering their scientific reasoning capabilities. Classroom discussions are key teaching instruments in this course.

**The course will begin on Tuesday, October 4, 2022. Classes will be held on Tuesdays and Thursdays, 4 pm - 6 pm, in the Serra 2 classroom.**

For further information, please write to [marco.crescenzi@iss.it](mailto:marco.crescenzi@iss.it) Please, do not use the uniroma1 address, as that mailbox is checked infrequently.

#### Attività

- 🗨️ Forum
- 📄 Risorse

#### Ricerca nei forum

 **Vai**

Ricerca avanzata ?

#### Annunci recenti

- 10 dic 2020, 18:38:46  
Marco Crescenzi  
Ultime quattro lezioni
- 10 dic 2020, 11:24:32  
Marco Crescenzi  
Lezione anticipata, se possibile
- 29 ott 2020, 13:17:50  
Marco Crescenzi  
Ignorate la precedente email
- 29 ott 2020, 13:15:12  
Marco Crescenzi

# Elearning

## Program

The program of the course is the Table of Contents of the textbook. Here below the chapters are presented in both Italian and English.

### PARTE PRIMA - LE BASI FILOSOFICHE - 1. PHILOSOPHICAL BASES

Come progredisce la scienza? - How does science progress?

Elementi di epistemologia - Elements of epistemology

Nomenclatura - Nomenclature

### PARTE SECONDA - BASI METODOLOGICHE FONDAMENTALI - 2. FUNDAMENTALS OF METHODOLOGY

Basi fondamentali dell'esperimento scientifico - Fundamentals of the scientific experiment

Isolare la variabile allo studio - Isolating the variable under study

Controlli positivi e negativi - Positive and negative controls

Ridondanza di evidenza - Redundant evidence

Osservazioni, correlazioni, rapporto di causa-effetto - Observations, correlations cause-and-effect relationship

Eventi rari o sfuggitivi - Rare or elusive events

Screening

Misurazioni e misure - Measurements and measures

Strumenti di misurazione - Measuring instruments

Statistica - Statistics

Esperimenti di ricostruzione - Reconstruction experiments

# Elearning

## PARTE TERZA - LA COSTRUZIONE DI UN PROGETTO DI RICERCA - 3. DEVELOPING A RESEARCH PROJECT

La domanda - The question

Approccio sperimentale - The experimental approach

Progettazione degli esperimenti e interpretazione dei risultati - Designing the experiments and interpreting their results

Un progetto di ricerca - A research project

## PARTE QUARTA - LA RICERCA IN PRATICA: ALCUNI ASPETTI - 4. SCIENCE IN PRACTICE: SOME ASPECTS

Etica della ricerca - The ethics of scientific research

La scienza pubblicata - Science as published

Leggere - Reading

Vita di laboratorio - Laboratory life

Quaderni di laboratorio - Laboratory notebooks

Il corso si conclude con una lezione dedicata all'orientamento pre- e post-laurea dello studente. Questa lezione non è oggetto di esame.

The course ends with a lesson aimed to orient the students in the early years of their career, before and after obtaining their degree. This lesson will not be part of the final exam.

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## Textbook

Marco Crescenzi

**Metodologia della ricerca scientifica per la biologia cellulare e molecolare** (2a edizione)

Disponibile su Amazon.it - Available on Amazon.it



# Teaching materials

[www.marcocrescenzi.it](http://www.marcocrescenzi.it)

marcocrescenzi.it



EN



Posta - Cardone Fra...



Home - Intranet ISS



Suggested Sites (2)



ftp iss



Roma Capitale | Sit...



DGLC-UIB

## Marco Crescenzi

Home



Puerto Natales, Chile

Sito personale di Marco Crescenzi

Per contattare Marco Crescenzi: [webmaster@marcocrescenzi.it](mailto:webmaster@marcocrescenzi.it)

### Notizie generali

- [Home](#)
- [Interessi scientifici](#)
- [Didattica](#)
- [Curriculum vitae](#)

### Materiali

- [Lezioni](#)
- [Presentazioni](#)
- [Libri \(narrativa\)](#)
- [Libro di testo](#)
- [Pubblicazioni scientifiche](#)

# Examinations calendar

- 2 dates soon after the end of the course (January-February)
- 1-2 date(s) after the end of 2<sup>nd</sup> semester (June-July)
- 1 date in September
- 1 date in April and 1 date in November, only for students that are preparing their final thesis or are beyond the duration of the course

# The lab is the best place to learn how to do research

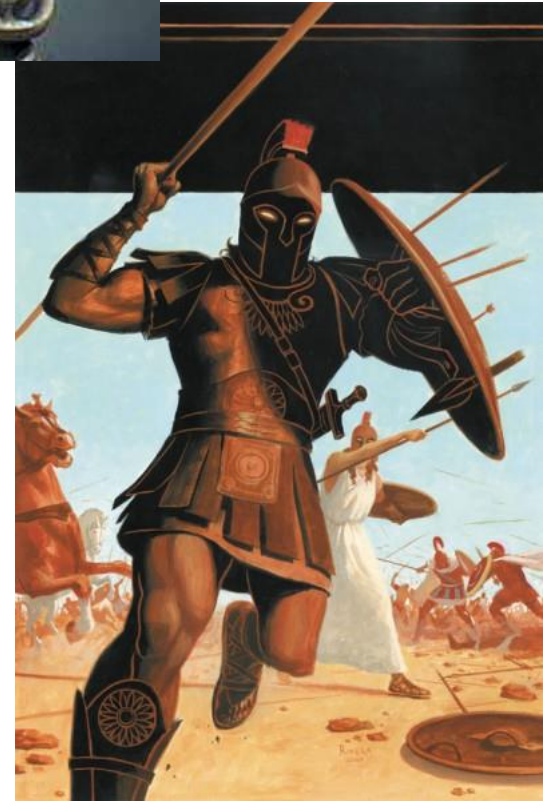
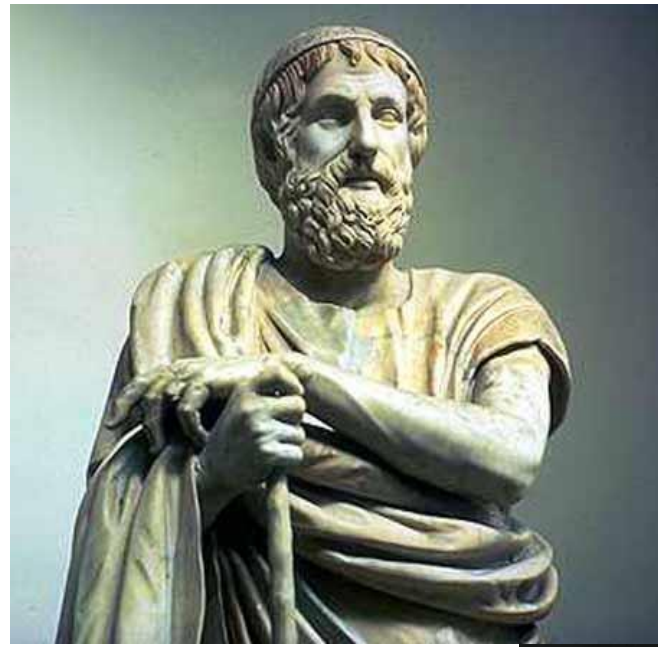




**So, is it worthwhile to attend this kind of courses?**



**And what's the best way to do it?**

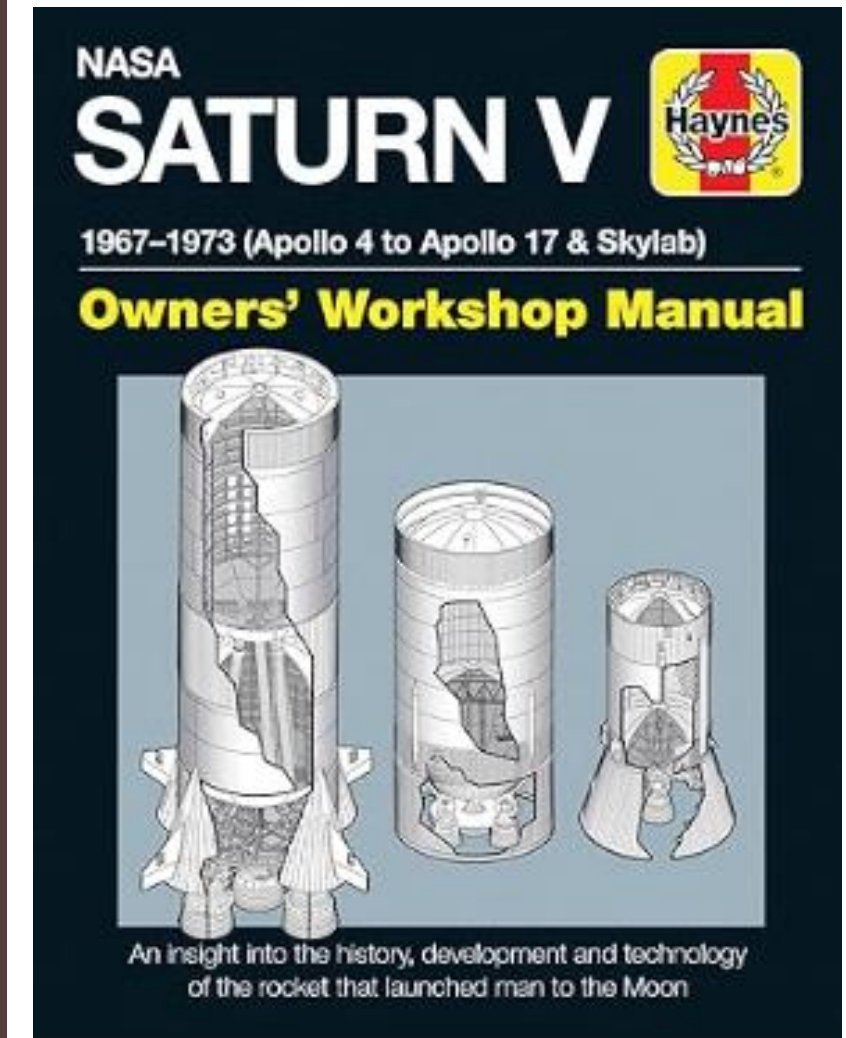




# PROGRAM APOLLO

## 1961-1972





# PROGRAM ARTEMIS

## 2017-ongoing



