

ADMISSION CRITERIA AND PREREQUISITES

The admission process for MAUCA is quite selective. Selection is based on academic background and personal motivation.

Students with a BSc (L3 in France) in Physics, Mathematics and Engineering can apply. Students in other MSc can apply in the framework of Erasmus+ program. Admission in Master 2 is possible depending on the results obtained in Master 1.

MAUCA welcomes students from any country.

PHD PROGRAM AFTER THE MASTER OR FUTURE CAREERS

Former MAUCA students have been enrolled in PhD programs of various Universities in France and Europe. Some students have also been hired in industry, in the field of space engineering and computer science. More than 80% of graduated MAUCA students have been offered such positions before or a few months after their graduation.

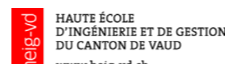
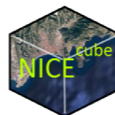
RESEARCH

MAUCA provides intensive training in research within the three laboratories of the Observatoire de la Côte d'Azur : Lagrange, Géoazur and Artemis. The labs of more than 10 partner Universities across Europe also host and train MAUCA students during 2-months internships abroad and a final research internship of 3 months.



DEVELOPED IN COLLABORATION WITH

Numerous European Universities, Observatories, Institutes and several companies related to space or high tech like Thales Alenia Space, TBTech and Fastlite.



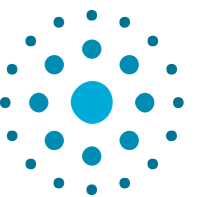
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Master Fundamental Physics & Applications MAUCA MASTER IN ASTROPHYSICS

UNIVERSITÉ CÔTE D'AZUR



Master Fundamental Physics & Applications **MAUCA** **MASTER IN ASTROPHYSICS**

ACQUIRED SKILLS

- Work as an autonomous researcher or engineer.
- Combine theory, observation, instrumentation, computing and data-processing skills to improve our knowledge in Astrophysics.
- Identify the difficulties of a project and find the knowledge, tools and resources required to overcome them.
- Manage your schedule to complete all your projects on time.
- Identify scientific careers and fields that best fit you. Adapt your background to match the required profile.

Key features of the program

International, high level master in astrophysics.

Unique teaching modules called METEORs.

2-months internships abroad.
Travel and lodging fees covered by Observatoire de la Côte d'Azur.



PRESENTATION

Interactive, participatory learning experience in a multi-cultural environment. The focus is on the hottest topics of Astrophysics and on the international projects/instruments/space missions of the 2020s+. You will understand the features of the present and future theories along with the instruments of modern Astrophysics and space sciences, as well as their limits. You will learn to interact, exchange ideas and benefit from team working on research or industrial projects.

- Project-based and collaborative learning in close interaction with first-class experts through teaching modules called METEORs : Modules of Experimentation Theory and Research.
- Intensive research-based training : 70 % of MAUCA is in Labs.
- *A la carte* program : choose 70 % of your courses.
- International Master, with 30 to 50% students from various countries (Brazil, England, India, Iran, Russia, US, Yemen... more than 12 nationalities in total. All courses in English.
- MAUCA offers 2-months internships in a Lab outside France.
- MAUCA also offers a 2-week immersion in a professional Observatory, at the C2PU center at Calern (<http://c2pu.oca.eu>).
- First-hand lab experience with extensive on-line material.
- Personal laptop prepared and provided by OCA.
- In MAUCA, you can tune your training between two main tracks : research and space/industry.

CONTENT

- Two series of fundamental courses providing general background in Astrophysics, Physics, Mathematics, Data Processing, Astronomical Instrumentation and Numerical Simulation.
- Six Modules of Experimentation Theory and Research (METEOR). METEORs typically last 2 months and give students a chance to experience real-life research or engineering challenges in Astrophysics/Space sciences. Each METEOR entails a formal course provided by a world-class expert and a supervised project-oriented lab work. METEOR works include project reports, research notes, functional algorithms, computer programs and oral presentations. You choose the 6 METEORs you will follow in list of 30+ METEORs subjects. In the second year, one METEOR is hosted by a foreign institute of your choice in a list of 10 European partner Universities.
- METEORs are grouped in 5 main topics: Planetology, The physics of Stars and Galaxies, Extragalactic Astronomy / Cosmology / Relativity, Signal & Image Processing, Astronomical Optics & Instrumentation, Space / Industry.
- A 2-week immersion module in a professional astronomical observatory setting, using two 1-meter class telescopes (C2PU).
- One module of scientific communication where you learn to write articles, make posters and presentations.