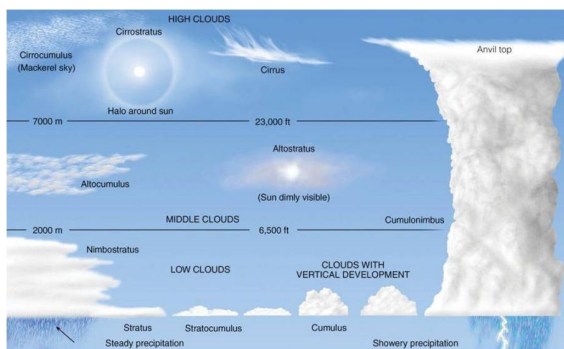




# LMAST4MC Master of Science (MSc) Laurea Magistrale in Atmospheric Science and Technology for Meteorology and Climate (LMAST4MC)

Contacts: <https://www.lmast.it/contacts/>

## LMAST4MC PROGRAMME. The Laurea Magistrale in Atmospheric Science and Technology for Meteorology and Climate



(LMAST4MC) is a Master of Science (MSc) degree in the Physics class (LM-17), organized as an international inter-university programme, jointly proposed by the **Sapienza University of Rome** and **University of L'Aquila**. The unique feature of LMAST programme is to educate **master students with solid knowledge and specific skills in the domain of meteorology, climate and atmospheric science, from a physics and an engineering perspective.**

LMAST4MC includes, atmospheric physics, meteorology, fundamentals of fluid mechanics, dynamical meteorology and climatic modelling, environmental meteorology and monitoring, statistical mechanics as well as satellite Earth observation, radar meteorology and electromagnetics and atmospheric remote sensing. The course can be completed by choosing among a **wide choice of interdisciplinary subjects** such as: i) urban climatology, satellite geodesy and geomatics, advanced fluid mechanics, hydro-climatology, hydrological modelling; ii)

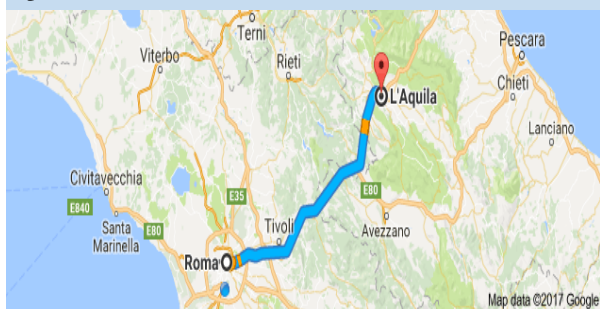
advanced electromagnetics and scattering, optoelectronic sensors, machine learning, radar image processing, engineering electromagnetics, robust statistical data analysis and modelling; ii) atmospheric sounding, lidar remote sensing, radiative transfer in atmosphere, physics of non-linear systems, space weather, hydrometeorological physics, atmospheric chemistry, physical oceanography and snow and glacier physics.

**Stages** for carrying out the **master thesis** are also foreseen through agreements with regional and national meteorological services as well **research institutes and companies**. The program emphasizes system-related and interdisciplinary aspects aiming at **forming professional expertise as meteorologist, climatologist, forecaster, atmospheric scientist, remote sensing scientist, and environmental physicist** LMAST4MC is closely linked with research and innovation activities in the Italian and international job-market context related to agrometeorology, risk management, transport, climate adaptation, civil protection, renewable energy, energy management.

The LMAST4MC graduate can obtain the **Statement of learning curriculum conformity** to the **World Meteorological Organization (WMO) Recommendation 1083 "Guide to the implementation and education and training standards in meteorology and hydrology"**, officially approved by the WMO National Permanent Representative.

## LMAST4MC ORGANIZATION. The Laurea Magistrale in Atmospheric Science and Technology for Meteorology and Climate

is held entirely in English and provides students with advanced concepts, professional training and specific physics and engineering skills, enabling them to address complex issues requiring analysis, development, simulation and application in a wide range of atmospheric science topics.



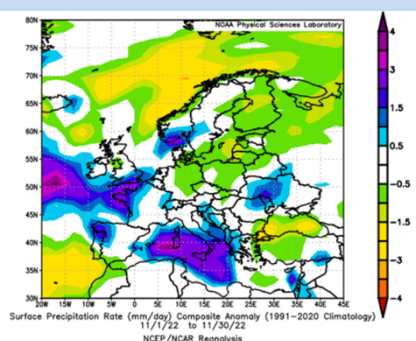
The inter-university **LMAST4MC** programme foresees the following 2-year schedule and logistics:

- 1. LMAST4MC first year is organized in L'Aquila** (90 km far from Rome, about 1-hour trip) and students acquire a basic knowledge related to major areas of atmospheric physics, meteorology, climate as well as on advanced and applied topics on atmospheric dynamics, climate modelling and environmental meteorology and several complementary subjects on atmospheric physics.
- 2. LMAST4MC second year is organized in Rome** and students are introduced to the technology related to the atmosphere as electromagnetics and radar meteorology, satellite Earth observation, atmospheric remote sensing fluid mechanics, statistical mechanics.

The **mandatory subjects** of LMAST are the following (69 credits, 650 hours of lectures, exercises and laboratories):

1. Introduction to atmospheric physics (6 credits)
2. Foundations of meteorology (9 credits)
3. Atmospheric dynamics: meteorological and climate modelling (12 credits)
4. Environmental meteorology (12 credits)
5. Electromagnetics and radar meteorology (6 credits)
6. Fundamentals of fluid mechanics (6 credits)
7. Statistical mechanics (6 credits)
8. Satellite Earth observation (6 credits)
9. Laboratory of atmospheric remote sensing (6 credits)

Other **24 credits** can be chosen by the student within a wide offer of subjects in LMAST4MC together with a **stage** of 3 credits (75 hours). A **final Master thesis** of 24 credits (600 hours of work), to be presented and discussed, concludes the LMAST4MC programme





**LMAST4MC MANAGEMENT.** LMAST4MC is managed in **L'Aquila** by the Department of physical and chemical sciences (**DSFC**, <http://www.dsfc.univaq.it/en/>). Univaq student welcome services can be visited at <http://www.univaq.it/en/>).

LMAST4MC is co-managed in **Rome** by the Department of Information engineering (DIET, [https://web.uniroma1.it/dip\\_diet/en](https://web.uniroma1.it/dip_diet/en)) at Sapienza University of Rome together with the Department of Civil, Environmental and Construction Engineering (**DICEA**) and **Department of Physics (DF)**. Sapienza student welcome services can be visited at <http://en.uniroma1.it/Hello>.



**LMAST4MC ADMISSION REQUIREMENTS.** Candidates, wishing to apply to LMAST4MC, are required to have a Bachelor degree and curriculum background with the following **requirements**:

- **Italian candidates** should exhibit a **Laurea in Physics (L-30)** or a **Laurea with at least 24 credits in MAT and 24 credits in FIS** as well as (preferably) 6 credits in INF and 6 credits in CHIM.
- **Foreign candidates from EU and non-EU countries** should hold a **BSc in Physics or a degree in a technical-scientific subject** with a **list of exams** showing a strong background in mathematics (calculus, algebra, analysis, numerics) and physics (classical and modern) as well as in chemistry and computer programming.
- **All students** must have a good knowledge of the English language preferably **certified at level B2** (within **Common European Framework of Reference for Languages**). IELTS (International English Language Testing System) or TOEFL (Test of English as a Foreign Language) proficiency certification are welcome.



The submission of the **following documents** is **strongly recommended** and will constitute a positive element in the LMAST4MC evaluation:

- Grade Point Average (GPA) and Cumulative-weighted Grade Point Average (CGPA) *larger than 75% of its maximum*.
- GRE (Graduate Record Examinations) General test, or Subject Tests in Math/Physics *larger than 75% of its maximum*.
- Admission test grades either general or specific for physics and engineering, as for instance GATP (Graduate Aptitude Test in Physics) or GATE (Graduate Aptitude Test in Engineering) *larger than 75% of its maximum*.
- 2 letters of recommendation from 2 different university professors.

The **LMAST4MC Admission Committee** may request an **interview with the prospective students** via Skype or other services. The number of students per year of LMAST4MC MSc programme is not limited.

## LMAST4MC EROLLEMENT PROCEDURE

- **Student with a foreign degree:**
  1. application for **pre-selection and scholarship**, **deadline 2 March 2023** at: [https://www.univaq.it/en/section.php?id=2062&lang\\_s=en](https://www.univaq.it/en/section.php?id=2062&lang_s=en)
  2. application for **pre-selection only (no scholarship)** **after 2 March 2023** and preferably **before 30 June 2023**: <https://www.universitaly.it/index.php> or at <https://sapienza.gomovein.com/locallogin/618e2c2b71cc863622480502/eng>
  3. moreover, for **non-EU citizens that missed application at point 1**, **MUST** apply to University web site (<https://www.universitaly.it/index.php>), for VISA application.
- **Italian students:**
  1. Application of pre-enrollement at: [https://www.univaq.it/section.php?id=400&lang\\_s=it](https://www.univaq.it/section.php?id=400&lang_s=it), opens 18 July, **deadline 31 October**.
- The Admission Committee evaluate the pre-selection application form and send, within the deadlines, an official letter of pre-acceptance, an official message of acceptance or refusal.
- All accepted students will proceed to the **final enrolment** via **procedures and tuition fees** at University of L'Aquila.

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