«finanziato dal Ministero dell'Università e della Ricerca»

Decree
Year 2025

Subject: Issuance of the call for applications for admission to the First-Level University Master's Program "Earth Observations from Space: Advanced Technologies and Applications (EO-SAT)" for the academic year 2025-2026, within the framework of the " Patto Territoriale dell'Alta Formazione per le imprese," funded under the DPCM Decree of September 26, 2023, pursuant to Article 14-bis of Decree-Law No. 152 of November 6, 2021, CUP: C32C23000230001.

THE RECTOR

HAVING REGARD TO The Statute of the University of Basilicata;

HAVING REGARD TO Ministerial Decree of October 22, 2004, No. 270;

HAVING REGARD TO The University Academic Regulations issued by Rectoral Decree No. 216 of May 21, 2008, and subsequent amendments;

HAVING REGARD TO The University Regulation on University Master's Programs issued by Rectoral Decree No. 643 of October 8, 2024;

HAVING REGARD TO the Rectoral Decree No. 611 of September 27, 2024, establishing the First-Level Master's Program "*Earth Observations from Space: Advanced Technologies and Applications (EO-SAT)*" for the academic year 2025-2026;

CONSIDERED the Rectoral Decree No. 504 of August 7, 2024, which activated, starting from September 2, 2024, the Department of Engineering, under which the *Master's Program EO-SAT* will be managed;

CONSIDERED The need to issue the call for admission to the aforementioned Master's Program;

HEREBY DECREES

ART. 1
GENERAL PROVISIONS

For the academic year 2025-2026, the call for admission to the **First-Level University Master's Program *"Earth Observations from Space: Advanced Technologies and Applications (EO-SAT)"*** is hereby issued. The Master's Program is established at the University of Basilicata – **Department of Engineering**, and is promoted in collaboration with companies from CLAS (Lucanian Aerospace Cluster) and the TeRN Technological District (Technologies for Earth Observation and Natural Hazards).

Pursuant to Article 3, paragraph 9, of Ministerial Decree No. 270 of October 22, 2004, the Master is configured as a program of Scientific Specialization and Higher Continuing Education. Upon passing a final examination, participants will be awarded the First-Level University Master's Degree in ***"Earth Observations from Space: Advanced Technologies and Applications (EO-SAT)."***

The maximum number of available spots is 20. The program will be activated only if at least 6 participants are enrolled.

Courses will begin by January 2026 and will conclude in June 2026. A minimum 2-month company internship will follow. Classes will be held Monday through Friday at the Macchia Romana Campus of the University of Basilicata, Via dell'Ateneo Lucano 10, Potenza. Classes may also be held remotely via the Google Meet platform.

Administrative and financial management of the *Master's Program* is entrusted to the Department of Engineering.

The Program Coordinator is Prof. Valerio TRAMUTOLI.

ART. 2
STRUCTURE OF THE MASTER'S COURSE

The *Master* consists of 1,500 hours of activities (classes, internships, practice e personal study), which correspond to 60 CFU. **Teaching will be in English**.

Activities are structured as follows:

LIST OF TEACHING MODULES AND UNITS AND OTHER ACTIVITIES, INCLUDING INTERNSHIPS [Art. 5.9 - lett. e)]						
Name	**SSD**	**CFU**	**CFU Structure**			**Total**
			Classes	**Other activities**	**Personal study**	
Module 1: Modern sensor physics	IINF-02/A PHYS-03/A	**6**	**48**		**102**	**150**
Ud1.1 Optical Physics	PHYS-03/A ING-INF/02	2	16		34	50
Ud1.2 Physics of sensors	PHYS-03/A	2	16		34	50
Ud1.3 E.m. Radiation sensors	PHYS-03/A	2	16		34	50
Module 2: Atmospheric Physics and Meteorology	PHYS-05/B	**8**	**64**		**136**	**200**
Module 3: Digital mapping and GIS	CEAR-04/A	**6**	**48**		**102**	**150**
Module 4: Fundamentals of Optical Band Remote Sensing	PHYS-05/B	**6**	**48**		**102**	**150**
Module 5: Fundamentals of Microwave Remote Sensing	IINF-02/A IINF-03/A	**6**	**48**		**102**	**150**
Module 6: Inverse problem theory applied to EO Remote Sensing	PHYS-05/B	**6**	**48**		**102**	**150**
Module 7: Engineering of spacecraft systems for Earth Observations	IIND-01/E CEAR-01/B	**9**	**72**		**153**	**225**

Ud7.1 Spacecraft dynamics	IIND-01/E	2	16		34	50
Ud7.2 Engineering of space systems and vehicles	IIND-01/E	4	32		68	100
Ud7.3 Earth Observation techniques from Aircraft Systems to Remote Piloting (SAPR)	CEAR-04/A	3	24		51	75
TOTAL CFUs - TEACHING AND STUDY HOURS		**47**	**376**		**799**	**1175**
Internships		**10**		**250**		**250**
Final exam		**3**			**75**	**75**
TOTAL		**60**	**376**	**250**	**874**	**1500**

ART. 3
EDUCATIONAL OBJECTIVES AND PROFESSIONAL PROFILES

The gap between supply and demand for specialized skills in the field of Earth Observation (EO) from Space has been recognized by the European Commission as one of the main limiting factors in the development of the aerospace sector and, in particular, in the insufficient growth of the European market for EO-based products and services.
The lack - at the European level - of a university curriculum specifically designed to train researchers and professionals with competencies covering the entire EO value chain - from the design of platforms and sensors to the development of systems, applications, and services based on the processing of space-based EO data - has been identified as a critical gap. The European Commission encourages overcoming this through the joint effort of European universities participating in the Copernicus Academy Network. Companies in the sector have repeatedly expressed difficulty in finding professionals with this type of expertise - individuals capable not only of responding to current demands but also of anticipating future needs in a constantly evolving market like that of space-based EO applications.
Following the EU's guidelines and leveraging the synergies made possible by UNIBAS's membership in the European Copernicus Academy Network, this Master aims to train professionals equipped with all the core and specialized skills required across the entire EO chain - from the design and operational deployment of remote sensing platforms and instruments to the analysis and interpretation of remotely sensed data for the development of advanced applications and services.
These skills are already taught separately, although in a fragmented and inconsistent way, across various university programs, such as Aeronautical Engineering, Environmental Engineering, Mechanical Engineering, Electronic and Telecommunications Engineering, Physics, Computer Science, etc. However, there is currently no coordinated university curriculum at the European level that brings together all these foundational competencies to enable the design of new EO services and applications starting from platform and instrument design, not only, as it happens today, from the mere use of available EO data.

This educational gap, widely acknowledged by the European Commission (and not currently represented in the ESCO European classification of occupations), has been specifically targeted by

the Commission through its recognition of the role of European universities - via the Copernicus Academy Network - as a cornerstone of its Copernicus User Uptake Strategy.

The Master organized by the University of Basilicata therefore aims to fill this gap by training new professional profiles suitable for integration into aerospace and ICT companies, as well as public administrations.

The *Master* will benefit from the specific expertise available at the University of Basilicata, as well as from the contribution of highly qualified professors from other universities, research centers, and private sector companies. A major added value of this Master, beyond its well-established relationships with both local and national aerospace companies grouped under the TeRN Technological District and the CLAS cluster, lies in its strong interconnection with the National PhD Program in Earth Observation (to which UNIBAS has been a member since its inception) and with the European Copernicus Academy Network, of which UNIBAS has been an early promoter. This will expand both the faculty and the internship opportunities available to Master's participants.

The *Master* is designed to attract young graduates interested in directing their professional careers toward a highly innovative and competitive field, and to develop skills that are readily transferable to other productive sectors. The content of the Master's program is aimed at integrating scientific knowledge with the professional practices and methodologies employed by companies in the sector. Teaching activities will be carried out by faculty from the University of Basilicata and other institutions conducting advanced research in the aerospace and space-based Earth Observation domains.

The course is mainly intended for young graduates in scientific disciplines who are motivated to pursue professional activities in the aerospace sector. It requires both a scientific and professional mindset, as well as an international outlook. The Master's program may also be of interest to professionals and public/private sector employees who wish to broaden and deepen their expertise in this specific field.

The *Master* aims to train professionals capable of envisioning and designing new systems, sensors, services, and EO applications from space - professionals who will be able to contribute to companies operating in the aerospace and ICT sectors, as well as public administrations.

ART. 4
ATTENDANCE AND DEGREE AWARDING

The Master's program will have a total duration of 12 months. Classes will be conducted in English and will take place in person at the University of Basilicata (Macchia Romana Campus – Potenza), as well as in online mode.

Classes will begin in January 2026, followed by the company internship period. During the instructional phase, learning assessments will be carried out at the end of each two-month teaching block. To obtain the degree, participants will be required to present and defend a final project developed during the course and/or the internship.

The teaching will require full-time commitment, with classes held mainly from Monday to Friday. In addition to lectures (either in person or remote), the program will also include in-depth activities in laboratories and/or seminars. The first 6 months of activities correspond to 47 ECTS credits of classroom and lab-based instruction. The final examination, worth 3 ECTS credits (75 hours), will take place at the end of the internship.

The overall workload for the entire program is approximately 1500 hours, corresponding to 60 ECTS credits.

The Master has an annual duration, with mandatory attendance of at least 80% overall and a minimum of 75% for each individual teaching unit (excluding the internship period, which also requires at least 80% attendance).

Participants who successfully pass the final examination will be awarded the First-Level University Master's Degree in ***"Earth Observations from Space: Advanced Technologies and Applications (EO-SAT)"***.

ART. 5
INTERNSHIP

The internship is foreseen to require a commitment equivalent to 10 CFU (250 hours) and will have a duration of about 2 months with *full time* commitment (or equivalently 3 months of *part time* commitment).

ART. 6
ADMISSION REQUIREMENTS

The Master's Program is open to candidates who hold a three-year university degree (Bachelor's level) or an equivalent qualification in one of the following degree classes (including bachelor's, professionalizing, or single-cycle degrees):

Bachelor's Degree Classes:

- L-2 Biotechnology
- L-7 Civil and Environmental Engineering
- L-8 Information Engineering
- L-9 Industrial Engineering
- L-13 Biological Sciences
- L-17 Architectural Sciences
- L-21 Territorial, Urban, Landscape and Environmental Planning
- L-25 Agricultural and Forestry Sciences and Technologies
- L-26 Agro-Food Sciences and Technologies
- L-27 Chemical Sciences and Technologies
- L-29 Pharmaceutical Sciences and Technologies
- L-30 Physical Sciences and Technologies
- L-31 Computer Sciences and Technologies
- L-32 Environmental and Nature Sciences and Technologies

- L-33 Economics
- L-34 Geological Sciences
- L-35 Mathematical Sciences
- L-41 Statistics

Professional Bachelor Degrees (authorized by the Ministry of University and Research):

- LP-01 Technical Professions for Construction and Land Management
- LP-02 Technical Professions in Agriculture, Food, and Forestry
- LP-03 Technical Professions in Industry and Information

Single-Cycle Degree:

- LM-4 C.U. Architecture and Building-Engineering/Architecture

Other Degrees:
Other degree holders may be admitted following an evaluation of their curriculum by the Master's Scientific Committee.

Students who have not yet obtained the required degree at the time of application may also participate in the admission selection, provided they earn the degree before the official start of classes and, in any case, no later than **December 31, 2025**.

Candidates holding a foreign academic qualification equivalent - by level, content, nature, and academic rights (such as access to further studies) - to the above-mentioned degrees may also apply. If such qualifications have not already been officially recognized according to existing Italian regulations, they must be evaluated by the Master's Scientific Committee, which may recognize them solely for the purpose of admission.

These candidates must comply with the current regulations governing the admission of foreign students to study programs at Italian universities, available at: http://www.studiare-in-italia.it/studentistranieri/

ART. 7
APPLICATION PROCEDURE AND DEADLINE

Applications for the selection process must be submitted **exclusively online** via the platform https://unibas.esse3.cineca.it. To apply:

- New users must register on the platform by selecting "Registrazione."
- Registered users should select "Login," enter their username and password, then follow the path: **Menu (top right) → "Segreteria" → "Test di ammissione" → "Iscrizione Concorsi."**
- Please note that applicants who have previously studied at UNIBAS should select their most recent academic career from the dropdown menu before accessing the registration options.

The application must be completed no later than September 22, 2025.

The online application system will be active starting from the day after the publication of this call on the official online notice board of the University. Once completed, the application must be printed and sent via **certified email (PEC)** to: polis@pec.unibas.it, with the subject line: **"Application for admission to EO-SAT Master – A.Y. 2025/2026."**

The following documents must be attached:

a) A European-format CV, duly signed;
b) A self-certification, as per D.P.R. No. 445/2000, declaring possession of the required academic degree, including the date of completion and final grade; alternatively, a self-certification of the degree yet to be awarded, including a list of exams taken and respective grades;
c) A self-certification, in accordance with D.P.R. No. 445/2000, of any additional qualifications relevant to the selection (e.g., Master's Degrees, other advanced courses, and documented professional experiences related to the themes of the Master), provided they were obtained by the application deadline, i.e., **by September 22, 2025**;
d) Any IT or language certifications, provided they were obtained by **September 22, 2025**;
e) A copy of a valid and signed identity document.

Foreign applicants or those holding a degree obtained abroad must submit, instead of the self-certification at point (b), a copy of their degree and an official transcript listing all courses and grades.

Self-certification templates are available at:

http://portale.unibas.it/site/home/didattica/master.html

At any time, the University reserves the right to exclude candidates who are found not to meet the eligibility requirements. False declarations will result in criminal penalties as per applicable laws.

ART. 8
SELECTION PROCESS FOR ADMISSION

If the number of applicants is lower than the maximum number of available spots, the Selection Committee will only verify the eligibility of the applications and the suitability of the individual candidates (including, if necessary, through an interview). Eligible candidates will be listed in **alphabetical order**.

If the number of applicants exceeds the available places, selection will be based on the **evaluation of qualifications**.

The Selection Committee will have a total of **100 points**, distributed as follows:

- Final grade of the qualifying degree: **max 50 points**
- IT and/or language certifications: **max 10 points**

- Documented previous experiences relevant to the Master's topics: **max 10 points**
- Other Master's degrees and specialization courses: **max 10 points**
- Second-level (Master's) degree: **max 20 points**

For candidates who will complete their degree by the time of enrollment, the weighted average of grades obtained in the exams taken up to the date of the application will be considered in place of the final degree grade.

The merit ranking will be compiled in descending order of the total score achieved by each candidate. In the event of a tie, preference will be given to the younger candidate. The ranking list will be approved by Rectoral Decree.

The top 20 candidates on the merit list will be admitted to the Master's program. In the event of a withdrawal, the next eligible candidate on the list will be admitted.

The merit ranking, i.e., the list of eligible candidates, will be posted on the official online notice board of the University and also published on the University website: http://portale.unibas.it/site/home/didattica/master.html
Publication on the official notice board shall serve as formal legal notification.

ART. 9
EXAMINING COMMITTEE

The judging committee for admission to the Master's program, composed of at least three members, is appointed by the Rector by official decree, upon proposal by the Master's Scientific Committee.

ART. 10
ENROLLMENT AND FEES

Admitted candidates, within the deadline that will be announced at the time of publication of the ranking list, must complete their enrollment exclusively through the online procedure, following the instructions that will be provided simultaneously.

Students enrolling in the Master's program are required to pay only the **virtual stamp duty**, amounting to **€16.00**.

After the activation of the Master's program, and by the start date of the educational activities, students must pay the regional university study rights fee of €140.00 exclusively via the PagoPA platform available on the Basilicata Region Portal, accessible with SPID (path to follow: **Portale Regione → PagoPA → Pagamenti spontanei → Seleziona Ente → Regione Basilicata → Seleziona un pagamento → Tassa Regionale per il diritto allo studio universitario**). The payment description must indicate: "Tassa regionale per il diritto allo studio Master Unibas a.a. 2025/2026 – Codice fiscale _____" (tax code of the student).

ART. 11

SUPPORT MEASURES FOR STUDENTS

To support in-person attendance only, twenty scholarships are provided, each worth 7,000.00 euros (seven thousand euros) net of taxes and of any other related contribution.

Such scholarships will be awarded to all candidates successfully ranked in the ranking list who meet the following conditions (to be declared at the time of application):

- Not receiving any other scholarships for attending the same Master's program
- Not holding any permanent employment contract of any kind
- No impediments to guaranteeing their in-person attendance for at least 80% of the Master's lessons

The scholarships will be paid in four installments: the first after the first month of attendance, the others at the end of each quarter.

The payment of the second and third installments will be conditional on regular attendance of lessons and on passing exams, while the fourth installment will be paid upon obtaining the degree. Failure to attend at least 80% of the classes in person will require the full repayment of the scholarship amount received.

In case of failure to enroll within the deadlines and according to the procedures outlined in Article 10 above, the rightful beneficiary will be considered to have waived the scholarship and the ranking list will be updated accordingly.

ART. 12
PERSONAL DATA TREATMENT

Pursuant to Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 (General Data Protection Regulation), as well as Legislative Decree 196/2003 as amended by Legislative Decree No. 101 of 10 August 2018, candidates are informed that the personal data provided will be collected by the University of Basilicata for purposes related to the management of the selection process and will be processed manually and/or electronically, including after the selection procedure, for purposes related to managing the relationship established by enrollment in the Master's course. Providing the requested data is mandatory for participation in the selection; failure to do so will result in exclusion.

ART. 13
PERSON RESPONSIBLE FOR THE PROCEDURE

Pursuant to Article 5 of Law No. 241 of 7 August 1990 and subsequent amendments and additions, the person in charge the procedure referred to in this call is Dr. Carmela BISACCIA (email: carmela.bisaccia@unibas.it).

ART. 14
PUBLICITY

This call for applications will be published on the University's Official Online Notice Board and will also be on the University website at http://portale.unibas.it/site/home/didattica/master.html and on the Department of Engineering website at https://diing.unibas.it/site/home.html.

Further information can be obtained by contacting the Master's Coordinator, Prof. Valerio TRAMUTOLI, email: valerio.tramutoli@unibas.it.

ART. 15
FINAL PROVISIONS

For all matters not covered by this call for applications, the regulations contained in the University Regulations on University Master's programs and other applicable provisions will apply.

This call for applications is translated into English from the original Italian version; in case of any disputes, only the Italian text shall be considered authoritative.

THE RECTOR
(Prof. Ignazio M. MANCINI)

BA/CB

Firmato digitalmente da
Ignazio Marcello Mancini
C = IT

Signed by: PORZIONATO MARCO
Issuer: Namirial CA Firma Qualificata
Signing time: 02-07-2025 10:06 UTC +02