







#### **Rector's Decree**

Additional call for public selection for admission to PhD courses - XL cycle - AY 2024/2025, with the assignment of PhD fellowships financed by the National Recovery and Resilience Plan (Piano Nazionale di Ripresa e Resilienza - PNRR), including those financed in the framework of the Ministerial Decrees no<sup>o</sup> 629/2024 and no<sup>o</sup> 630/2024.

#### **The Rector**

HAVING REGARD TO the Statute of Autonomy;

HAVING REGARD TO the General University Regulations;

**HAVING REGARD TO** the University Teaching Regulations;

HAVING REGARD TO the Administration and Accounting Regulations;

HAVING REGARD TO the University Regulations regarding Research Doctorates;

HAVING REGARD TO the University Code of Ethics and Code of Conduct;

HAVING REGARD TO the Law no° 476 of 13 August 1984;

HAVING REGARD TO the Law no° 240 of 30 December 2010, in particular art. 19;

HAVING REGARD TO the Ministerial Decree no° 226 of 14 December 2021;

**HAVING REGARD TO** the Law no° 104 of 5 February 1992, as integrated and modified by the Law no° 17 of 28 January 1999;

HAVING REGARD TO the Decree of the President of the Republic no° 445 of 28 December 2000;

**HAVING REGARD TO** the Prime Ministerial Decree of 9 April 2001 "Uniform treatment of the right to university studies, pursuant to art. 4 of the Law no<sup>°</sup> 390 of 2 December 1991";

HAVING REGARD TO the Law no° 148 of 11 July 2002;

HAVING REGARD TO the Legislative Decree no° 196 of 30 June 2003;

HAVING REGARD TO the Ministerial Decree no° 270 of 22 October 2004;

**HAVING REGARD TO** the General Data Protection Regulation (GDPR) - Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data, as well as on the free movement of such data;

**HAVING REGARD TO** the Ministerial Decree no<sup>°</sup> 247 of 23 February 2022 which provided for the increase in the gross annual amount of the PhD fellowship;

**HAVING REGARD TO** the Rectoral Decree no<sup>°</sup> 374 of 1 March 2022 with which the "Fees, contributions and exemptions Regulation" was issued, updated for the academic year 2024/2025, with its own decree no<sup>°</sup> 179 of 4 March 2024 and any subsequent amendments;

**HAVING REGARD TO** the Ministerial Decree no<sup>°</sup> 440 of 13 February 2024 containing the list of particularly poor countries for the academic year 2023/2024;

**HAVING REGARD TO** the provisions of Ministry of University and Research (MUR) regarding Procedures for the entry, residence and enrollment of international students and the related recognition of qualifications,



for higher education courses in Italy valid for the academic year 2024-2025, available on the page: <u>https://www.universitaly.it/studenti-stranieri</u>;

**HAVING REGARD TO** the Law no° 33 of 12 April 2022 containing "Provisions regarding simultaneous enrollment in two higher education courses";

**HAVING REGARD TO** the note from the MUR prot. no<sup>°</sup> 8614 of 2 May 2024 relating to the "Operating instructions for the accreditation procedure of doctoral courses for the XL cycle";

**HAVING REGARD TO** the "Guidelines for the accreditation of research doctorates pursuant to article 4, paragraph 3, of the regulation referred to in Ministerial Decree 14 December 2021, no<sup>o</sup> 226" issued with Ministerial Decree no<sup>o</sup> 301 of 22 March 2022;

**HAVING REGARD TO** the resolutions of the relevant Departments of the University's PhD courses, relating to the approval of the renewal of the courses for the AY 2024/2025 - XL cycle;

**HAVING REGARD TO** the resolutions of the Academic Senate and the Board of Directors, sitting on 21 and 28 May 2024 respectively, relating to the PhD courses for the XL cycle;

**HAVING REGARD TO** its own rectoral decree no<sup>°</sup> 620 of 18 June 2024 with which the selection notice was issued for admission to the XL PhD cycle of doctoral courses with administrative headquarters at the University of Calabria;

**HAVING REGARD TO** the document relating to the National Recovery and Resilience Plan (PNRR) and subsequent amendments. and revisions;

**CONSIDERED** that the PNRR is part of the Next Generation EU (NGEU) economic recovery project, developing around three strategic axes shared at European level - Digitalisation and Innovation, Ecology Transition, Social Inclusion - and along six Missions, including Mission 4 "Education and Research";

**HAVING REGARD TO** the Ministerial Decree no° 629 of 24 April 2024 containing the "Allocation of three-year doctoral fellowships for attending doctoral courses in specifically dedicated and structured programmes", based on Mission 4, Component 1 "Strengthening the offer of education services: from nurseries at the University" - Investment 3.4 "Advanced university teaching and skills" and Investment 4.1 "Extension of the number of research doctorates and innovative doctorates for public administration and cultural heritage", by virtue of which the University of Calabria is was awarded ministerial co-financing for doctoral fellowships;

**HAVING REGARD TO** the Ministerial Decree no° 630 of 24 April 2024 containing the "Allocation of three-year doctoral fellowships for the attendance of innovative doctorate courses that respond to the innovation needs of companies and promote the hiring of researchers by companies", pursuant to Mission 4, Component 2 "From Research to Business" - Investment 3.3 "Introduction of innovative doctorates that respond to the innovation needs of companies and promote the hiring of researchers by companies", by virtue of which the University of Calabria was awarded ministerial co-financing for doctoral fellowships;

**HAVING REGARD TO** the letters of intent of the companies interested in co-financing the grants pursuant to Ministerial Decree no° 630 of 24 April 2024;

**NOTICED** that within Mission 4, Component 2 "From research to business" intends to strengthen research and encourage the diffusion of innovative models for basic and applied research conducted in synergy between universities and businesses; support processes for innovation and technology transfer; strengthen research infrastructures, capital and skills to support innovation;



**NOTICED** that Component 2 of Mission 4 envisaged four types of investments, including:

- "Strengthening of research structures for the creation of "National R&D Champions" on some "Key Enabling Technologies";

**HAVING REGARD TO** the Ministerial Decree no<sup>°</sup> 3138 of 16 December 2021 relating to the Public Notice for the presentation of Proposals for intervention for the strengthening of research structures and the creation of "National Champions" to be financed within the PNRR, Mission 4 Component 2 - Investment 1.4 - Strengthening of research structures research and creation of "National R&D Champions" on some Key Enabling Technologies - financed by the European Union - NextGenerationEU (CN Notice);

**CONSIDERED** that the University of Calabria participated in the CN Notice with the project "National Center for HPC, Big Data and Quantum Computing" - HPC (Identification code CN00000013), approved by the MUR with concession decree no<sup>o</sup> 1031 of 17 June 2022;

**HAVING REGARD TO** the CUP number generated by the University of Calabria for the HPC financing: H23C22000360005;

**CONSIDERED** that the interventions covered by the financing provided for by the aforementioned decrees must be:

a) consistent with the objectives and purposes of Regulation (EU) 2021/241, with the general strategy andDetailed sheet of the PNRR Component;

b) oriented towards achieving the results measured in reference to milestones and targets possibly assigned to the Investment within the terms established by the PNRR;

c) comply with the principle of "not causing significant harm" (DNSH) pursuant to art. 17 of Regulation (EU) 2020/852, consistently with the technical guidelines prepared by the European Commission (Communication from the European Commission 2021/C58/01);

d) capable of addressing and bridging gender inequalities;

e) to support the participation of women and young people, also in accordance with the provisions of Legislative Decree no. 77 of 31 May 2021 (so-called Simplification Decree), amended by Conversion Law no. 108 of 29 July 2021, relating to the management of the PNRR;

**HAVING REGARD TO** the "Guidelines for reporting intended for the implementers of the interventions of the PNRR ITALY of which the MUR is the owner Administration", prot. no<sup>o</sup> 785 of 31 January 2023;

**HAVING REGARD TO** the Guidelines for reporting intended for the implementing entities of the Mission 4 Component 1 and Component 2 system initiatives and the "Guidelines for information and communication actions by the implementing entities";

**ASSURED** the financial availability relating to doctoral fellowships on the relevant item of the University's annual budget forecast for 2024;

**ASSURED** the financial availability within the relevant economic budgets of the Departments involved for the financing of the sum, equal to at least 10% of the cost of the doctoral fellowship, intended to finance the research activities for their doctoral students;

**CONSIDERED** that pursuant to Ministerial Decree no<sup>°</sup> 226/2021, mentioned above, the doctoral courses are activated following accreditation granted by the Ministry following the favorable opinion of ANVUR;



**WHEREAS** that the actual assignment of the fellowships referred to in the Ministerial Decrees no<sup>°</sup> 629 and no<sup>°</sup> 630 of 24 April 2024 is subject to the outcome of the required eligibility checks carried out by the MUR and ANVUR;

**CONSIDERED** necessary to provide, pending the conclusion of the aforementioned accreditation renewal procedure, to the issuing of the additional call for public selection for admission to PhD courses - XL cycle - AY 2024/2025, with the assignment of PhD fellowships financed by the National Recovery and Resilience Plan (Piano Nazionale di Ripresa e Resilienza - PNRR), including those financed in the framework of the Ministerial Decrees no° 629/2024 and no° 630/2024;

## DECREES

## Art. 1 Call for selections

**1.** The additional public selection call for admission to the PhD courses - XL cycle - AY 2024/2025 is announced at the University of Calabria, with the assignment of doctoral fellowships within the scope of the National Recovery and Resilience Plan (PNRR), including those referred to the Ministerial Decrees no<sup>o</sup> 629/2024 and no<sup>o</sup> 630/2024 and the overall attribution of n. 34 PhD fellowships.

The fellowships valid for this selection call are financed by the Ministerial Decrees no<sup>o</sup> 629 and no<sup>o</sup> 630 of 24 April 2024 and by the HPC project within the National Recovery and Resilience Plan (PNRR) of the European Union program NextGenerationEU, as specified in Annex A "Analytical Sheets for XL cycle Research Doctorate Courses - AY 2024 /2025" which constitutes an integral and substantial part of this call.

**2.** This callit will be published on the website of the Ministry of University and Research, on the European European european and on the University of Calabria portal at the link: <u>https://unical.portaleamministrazionetrasparente.it/pagina874\_tc-7\_dottorati-di-ricerca.html</u> and has the value of notification in all respects.

**3.** For each doctoral course, information relating to the Coordinator, the duration, the proposing Department (any other Departments involved), the CUN Areas and the relevant Scientific Disciplinary Sectors, the research topics or curricula of the course, the participation requirements, the admission procedures, the qualifications to be attached to the application for participation, the evaluation criteria for the tests, the number of positions and fellowships with the specification of the financing entities and the research objectives/topics, also in relation to individuals curricula, if applicable, the Agenda, any contact information and the PhD course website, are shown in Attachment A.

**4.** The positions with fellowship from the Ministerial Decrees funds no° 629 and no° 630 of 24 April 2024 are banned subject to the approval of ministerial financing. The doctoral fellowships are activated within the bounds of the topics indicated in the aforementioned decree and in compliance with the eligibility criteria set out in the Ministerial Decrees.

**5.** Any changes, updates or additions to the content of the call will be made known, exclusively, upon publicationon the University of Calabria portal at the link <u>https://unical.portale</u> <u>amministrazionetrasparente.it/pagina874\_tc-7\_dottorati-di-ricerca.html</u>.

Any personal communications to candidates relating to this call will take place via ordinary email. For this purpose, the e-mail address indicated by the candidate in the online application is used. The University assumes no responsibility for the dispersion of communications resulting from inaccurate indications of personal contact details by the candidate or from failure or late communication of their change, nor from electronic errors also linked to the candidate's personal email inbox.



**6.** The submission of the application for participation through the procedure referred to in art. 4 presupposes the candidate's knowledge of the rules contained in this call, in the University Regulations regarding research doctorates and of the regulations relating to the sources of funding for the fellowships.

7. The start of the XL cycle doctoral courses is scheduled for November 1, 2024.

## Art. 2 Admission requirements

**1.** They can submit an application to participate in the selections for admission to the Research Doctorate Courses referred to in the previous art. **1**, without age and citizenship limits, those who hold one of the following qualifications:

- a. Old system degree diploma (ex ante DM 509/1999);
- b. Specialist/Master's Degree (DM 509/1999 and DM 270/2004);
- c. Second level academic qualification issued by institutions belonging to the AFAM sector;
- d. Qualification obtained from legally recognized foreign universities, provided that it is comparable in duration, level and disciplinary field to the Italian qualification that allows access to the course.

To access the selection of some of the doctoral courses, the possession of specific master's/specialist degrees (or equivalent) is required, as indicated in Annex A of this call.

2. Those who obtain the qualification required in paragraph 1 by the date of enrollment in the doctoral course can also submit an application to participate in the call for admission. If the candidate is successful, he/she will be admitted "conditionally" and must submit, by the date of enrollment in the doctoral course, via e-mail to <u>dottorati@unical.it</u>, the self-certification relating to the achievement of the qualification with an attached copy of a valid identity document. Failure to obtain the qualification within the indicated deadline will result in exclusion from the merit rankings.

- 3. Those who:
  - have benefited from a PhD fellowship or part thereof in the past;
  - have already obtained a research doctorate.

### Art. 3 Qualification obtained abroad

**1.** The suitability of the qualification obtained from foreign universities is ascertained, solely for the purposes of admission to the selection, by the judging commissions in compliance with the legislation in force in Italy and in the country where the qualification was issued, as well as international treaties or agreements regarding the recognition of qualifications for the continuation of studies.

2. In this case, candidates must present, in the manner indicated in article 4 below, the degree certificate, indicating the exams passed and the study plan followed, both first and second level. The candidate can also attach the diploma supplement or the declaration of on-site value or comparability certificate issued by CIMEA or other ENIC-NARIC centers and any other documentation useful for evaluating the admissibility of the qualification held for the chosen course. The aforementioned documents, if they are not drawn up in Italian or English, must, under penalty of exclusion from the selection, be accompanied by a sworn translation into Italian or English. The judging commissions will proceed to evaluate the suitability of the foreign qualification based on the documentation presented and therefore may exclude the candidate even if there are not sufficient elements for the evaluation.

**3.** Candidates in possession of a foreign qualification are admitted to the selection with reservation, which can be dissolved only when, if successful, they produce the diploma supplement or declaration of value on



site or certificate of comparability from CIMEA or other ENIC-NARIC centres, such as provided for by the art. 8.

## Art. 4 Application for admission

**1.** The application for admission to the selection must be sent exclusively using the specific online procedure available on the page: <u>https://unical.esse3.cineca.it/.ù</u>

2. The IT procedure for submitting the online admission application will necessarily close at 12:00 p.m. (midday Italian time) dated July 19, 2024.

**3.** The online procedure provides for preliminary registration for those who do not have a student number from the University of Calabria, in order to obtain the credentials that allow access to the subsequent phase of completing the application for admission to the selection.

4. Candidates who are already registered must access the Reserved Area using the credentials they already have. Candidates are invited to update the data already present in the registry, in particular the place of residence, telephone number and e-mail address, to which any communications relating to the competition will be delivered.

**5.** The application for admission to the selection is considered correctly submitted only with the completion of the electronic procedureand can no longer be modified online.

**6.** An application for admission may be submitted for each administrative category referred to in the following paragraph 11.

**7.** The date of submission of the application for admission to the selection is certified by the computer system which, upon expiry of the deadline useful for submission, it will no longer allow access and sending the application.

8. In order to participate in the selection call, it is mandatory, under penalty of exclusion, to pay an admission fee of €10.00 (for each application and administrative category presented) through the PagoPA integrated system in the esse3 online procedure. Only each "closed and transmitted" application with the relevant payment made will be considered valid for the purposes of participation in the selection call. Complaints due to any malfunctions of the IT system near the deadline will not be accepted nor will the admission fee be refundable under any circumstances; Candidates are therefore invited to complete the application to participate in the selection notice sufficiently in advance of the deadline to ensure the necessary assistance.

**9.** The online admission procedure involves uploading the following documents in pdf format:

- self-certification of access qualification pursuant to art. 47 of Presidential Decree 445/2000 (annex B) exclusively for academic qualifications obtained in EU countries;
- documentation required for the evaluation of candidates in possession of an academic qualification obtained abroad;
- self-certification of exams taken during the academic career, for candidates not yet in possession of the qualification;
- research project, with a maximum length of 16,000 characters (including spaces), unless otherwise requested in the PhD course information sheet for which you intend to participate, in compliance with the specifications indicated in Attachment A;
- candidate's curriculum vitae and studiorum;



- copy, front and back, of a valid identity document;
- copy of the tax code, exclusively for Italian candidates;
- any further qualifications subject to evaluation, specified in "Annex A" of this call.

**10.** All the titles, documents and publications deemed useful for the purposes of the competition procedure must be attached in PDF format with a maximum size of 20 MB; in a completely exceptional case, any documentation that the candidate is unable to attach may be sent via certified email (PEC) to the address <u>amministrazione@pec.unical.it</u> or delivered by hand to the Protocol Office of the Central Administration, Via Pietro Bucci cubi 7-11 b, Arcavacata di Rende (CS), on weekdays from 10:00 to 12:00, always respecting the expiry date of this document call. Furthermore, using the same methods, candidates who wish to integrate or modify the application or attachments can send them, together with the signed admission application and a photocopy of a valid identity document, within the peremptory deadline of the call. In the event that the attachments are not received within the deadline and in the manner indicated, only the documents inserted using the IT procedure will be evaluated. The University assumes no responsibility for any electronic problems.

**11.** Candidates who intend to participate in multiple administrative categories of the same doctorate course referred to in this call must submit a different application for each administrative category, each accompanied by the specific qualifications required and the relevant payment of the admission fee. The administrative categories envisaged are:

- 4 PNRR Category (for doctoral courses in Information and Communication Technology, in Civil and Industrial Engineering, in Life Science and Technology, in Translational Medicine, in Geology, Engineering and Science of Sustainable Earth and Energy Transition, in Physical Sciences and Technologies, Chemistry and Materials, in Economic and Business Sciences and in Technology Applied to Cultural Heritage) to be considered fellowships Ministerial Decree 629/2024 and HPC Project;
- 5 Innovative Doctorates Category (for doctoral courses in Information and Communication Technology, in Civil and Industrial Engineering, in Life Science and Technology, in Mathematics and Informatics, in Translational Medicine, in Geology, Engineering and Science of Sustainable Earth and Energy Transition, in Physical, Chemical and Materials Sciences and Technologies and in Technology Applied to Cultural Heritage), to be considered fellowships Ministerial Decree 630/2024.

To this end, multiple procedures for submitting the application for admission will be available on the Esse3 application for each doctoral course in compliance with the administrative categories listed above.

**12.** Candidates who intend to participate in more than one selection for admission to the doctoral courses referred to in this call must submit a different application for each selection, each accompanied by the required qualifications and the relevant payment of the admission fee.

**13.** Applications for admission to the selection submitted using a method other than that set out above will not be taken into consideration, as will payments relating to the admission fee made using methods other than those provided by the esse3 system.

**14.** It is the candidate's responsibility to ensure the correct conclusion of the IT procedure; in this regard, this University declines any responsibility for any malfunctions of the IT system close to the deadline.



**15.** Candidates with proven disabilities, pursuant to law no. 104/1992 as integrated by law 17/99, can request, in relation to their disability, the necessary aids and any additional time to complete the test. For candidates suffering from specific learning disabilities in accordance with law no. 170/2010 in relation to the type of test, an additional time equal to 30 percent more than that defined is granted. Disabled candidates, if they intend to make use of the aids provided for by Law no. 104/1992 as integrated by law 17/99, they must also report it when completing the online application, indicating the type of aid requested.

**16.** All candidates are admitted to the selection subject to verification of the requirements set out in the call, which will be carried out pursuant to art. 43 of Presidential Decree 445/2000. The University may, therefore, decide at any time to exclude candidates from the selection procedure. The University will also, ex officio, ascertain the truthfulness of the declarations in lieu of certification submitted by the candidates: anyone who issues false declarations is punished in accordance with the penal code and special laws on the matter.

**17.** The University reserves the right to adopt, even after the completion of the selection, measures to exclude candidates who do not possess the required requirements or who have not complied with the provisions of the call.

## Art. 5 Judging commissions

**1.**The selection commissions for admission to doctoral courses are appointed by the Rector in compliance with the "University Regulations regarding research doctorates" of the University of Calabria.

**2.**Each judging commission is responsible for the entire procedure of evaluating the applications, drafting the minutes, formulating the merit rankings and assigning the doctoral fellowships.

**3.**The composition of the individual Commissions will be published on the University of Calabria portal at the link <u>https://unical.portale amministrazionetrasparente.it/pagina874\_tc-7\_dottorati-di-ricerca.html</u>.

### Art. 6 Admission tests

**1.** Admission takes place according to the methods explained for each course in Annex A, an integral part of this decree.

**2.** The admission Agenda, reported for each course in the aforementioned Attachment A, constitutes notification to all intents and purposes to interested parties. Any changes or additions to the exam calendar will be published exclusivelyon the portal of the University of Calabria at the web addresses indicated in Attachment A for each course, by the Department proposing the doctoral course.

**3.** Failure to show up for the admission tests will be considered as a waiver of the selection.

**4.** To take the competitive tests, candidates must show one of the following valid identification documents: identity card, passport, car license with photograph, gun licence, identification cards - with photograph and stamp or other marking equivalent - issued by a State Administration.

**5.** The selection procedure, aimed at ascertaining the candidate's aptitude for scientific research, consists of an evaluation of the candidates' qualifications, integrated, in accordance with the provisions of each course in Annex A, by a written test and/or a test Oral.

**6.** The points available for each individual test, the attribution criteria and the minimum score scores for admission to subsequent tests are indicated in the form for each doctorate.



**7.** Each Commission, prior to the qualification evaluation operations, must designate the president and the recording secretary and establish the evaluation and scoring criteria relating to each individual item (research project, curriculum vitae et studiorum, any certifications, any publications, etc.). In the case of candidates who do not yet have the qualification to access the PhD, for the purposes of an appropriate evaluation of their educational path, the Commission must take into account their self-certified academic career at the time of submitting the application.

**8.** The written test, where applicable, must be carried out by all candidates, as a rule, in the Italian language, without prejudice to the possibility for the individual Commission to decide to carry out the essay, for all candidates, in a foreign language.

9. The oral test is public and includes testing of knowledge of one or more foreign languages.

10. Only for those courses that do not require a written test, candidates resident or domiciled abroad will be permitted and all candidates who demonstrate, by providing adequate justification to the Selection Committee, the impossibility of going in physical presence to the place and date scheduled for the oral test, to request that it be carried out electronically. In such cases the candidate must request it by sending a PEC (amministrazione@pec.unical.it) to the Department proposing the doctoral course reported in the doctoral form, as well as to the address dottorati@unical.it, immediately after the publication of the results of the evaluation of gualifications, as indicated in the individual doctorate forms. The request must be accompanied by a copy of a valid identification document. Candidates must guarantee the use of a webcam to allow their identification to the Judging Commission and must be available on the day and time established in the Agenda in Annex A. Each Commission has the right to decide to agree with the candidates a specific time for the start of the interview. For identification purposes and under penalty of exclusion from the selection procedure, each candidate is required, before the interview begins, to identify himself, showing the same identity document already sent as an attachment to the e-mail and the online participation application. Failure to connect, the unavailability of the candidate on the established day or time or failure to show the identification document transmitted constitute causes of exclusion from the selection procedure. The University declines any responsibility for the eventuality that technical reasons prevent the oral interview from taking place properly.

**11.** At the end of the evaluation, the Commission, based on the score reported by each candidate in the individual administered categories for which he/she submitted an application for admission, prepares the merit rankings. The Commission draws up a separate ranking for each administrative category referred to in paragraph 11 of the previous art. 4 and assigns the fellowships taking into account the position in the merit ranking, the number of fellowships in competition, the theme of the research project presented by the candidate and/or the suitability of the candidate to develop the research theme of the fellowships put up for competition each administrative category.

**12.** In each merit ranking by category, at the end of the selection procedures, the Commission, in finalizing the merit rankings, must provide positions for the 'suitable non-winners', definable as candidates entitled to participate in the possible procedure for scrolling the rankings until they expire as they are useful placed in the positions following those advertised. These positions will be subject to reallocation by the MUR of any resources of the Ministerial Decrees no° 629 and no° 630 of 2024.

**13.** In case of non-assignment of the positions reserved for the specific administrative category, these cannot be assigned using the ranking of the other administrative category.

14. Pursuant to current national legislation, each candidate cannot benefit from multiple doctoral



fellowships at the same time.

**15.** For the assignment of the positions referred to in this call, in the event of a tie in the general merit ranking, the evaluation of the economic situation (ISEE of the candidate) prevails.

**16.** The documents relating to the competition procedure are sent to the Rector by the Judging Commission.

**17.** Candidates are guaranteed access to the documentation of the competition proceedings, in accordance with current legislation.

## Art. 7 Admission to doctoral courses

**1.** The Rector approves the selection documents and decrees the merit rankings for the admission of candidates.

**2.** The decrees approving the selection documents will be made known through publication on the University of Calabria portal at the link <u>https://unical.portale amministrazionetrasparente.it/pagina874\_tc-7\_dottorati-di-ricerca.html</u>.

**3.** Candidates will therefore not receive any personal communication.

4. Candidates are admitted to courses according to therankings drawn up by each judging commissionuntil all positions available for each doctorate are filled. In case of any withdrawals by those entitled before the start of the course, the same number of candidates will take over according to the order of the ranking drawn up by the Commission. In case of useful placement in multiple rankings, the candidate must exercise the option for only one doctorate course or administrative category.

**5.** This selection involves the assignment only of positions covered by fellowships and equivalent funding. Renunciation of the fellowship, therefore, entails renunciation of the doctoral course.

### Art. 8 Registration methods

**1.** The winners will have to pre-register via the procedure available at <a href="https://unical.esse3.cineca.it/">https://unical.esse3.cineca.it/</a>, within the terms indicated together with the publication of the Rectoral Decree approving the selection documents. Failure to complete the pre-enrolment will result in the forfeiture of the right to admission to the doctoral course.

**2.** The amount relating to the fees for attending doctoral courses, to be paid by all doctoral students, includes the regional tax for the right to study, the stamp duty and the insurance premium pursuant to the Regulation on taxes, contributions and exemptions mentioned in the introduction and to which reference is made.

**3.** Non-EU winners, once they have enrolled, must deliver to the Research Doctorates Sector of the Research, Innovation and Social Impact Area, within a suitable deadline agreed with the Sector itself, a copy of the entry visa for study/university or of the permit of stay.

**4.** Non-EU citizens requesting visas must register on the Universitaly Portal <u>https://www.universitaly.it/index.php/dashboard</u>, under "International students", to request an entry visa. Enrollment is completed only upon issuance of the entry visa for study in Italy, the exclusive responsibility of the Italian Diplomatic Representations abroad, regardless of the eligibility acquired.

5. Candidates with a foreign qualification admitted to the course, if they have not submitted it during the admission phase, will have to submit to the Research Doctorate Sector of the Research, Innovation and Social



Impact Area, within a suitable time agreed with the Sector itself, under penalty block of career and subsequent forfeiture, the declaration of local value of the qualification, issued by the Italian Diplomatic Representation of the country to which the qualification refers. As an alternative to the declaration of value on site, it is possible to present the diploma supplement in English, issued by the same institution that issued the qualification, drawn up according to the model developed by the European Commission, the Council of Europe and UNESCO/ CEPES, or the comparability certificate from CIMEA or the ENIC-NARIC centres. If the "Declaration of value" presented by the candidate certifies that the qualification is not valid in the country of achievement for enrollment in a course similar to the Doctorate, the interested party will forfeit the Doctoral Course.

**6.** In the event of withdrawal by those entitled, the remaining vacant positions are assigned to those who hold a useful position in the merit rankings, with communication sent only by ordinary email. For this purpose, the e-mail address indicated by the candidate in the online application is used. The University assumes no responsibility for the dispersion of communications resulting from inaccurate indications of personal contact details by the candidate or from failure or late communication of their change, nor from electronic errors also linked to the candidate's personal email inbox.

**7.** The University reserves the right to proceed with appropriate checks on the truthfulness of the content of the winner's declarations. If the content of the declarations is found to be untrue, the winner will lose the benefits resulting from the provision issued on the basis of the untruthful declaration.

## Art. 9 Fellowships

1. The amount of the doctoral fellowship is a minimum of €16,243.00 per year gross of social security contributions to be paid by the fellowship holder, with the exception of some administrative categories as reported in Attachment A of the doctoral courses involved. The doctoral fellowship is exempt from the payment of local income tax and personal income tax (IRPEF) and is subject to the payment of separately managed INPS social security contributions, of which two thirds are paid by the University and one third paid by the fellowship holder. Doctoral students enjoy related protections and rights. Fellowship recipients must register for INPS separate management.

2. The total gross annual personal income limit to be able to benefit from the doctoral fellowship is €15,000.00. Income from assets as well as emoluments of any other nature, including those of an occasional nature, contribute to the determination of this income. The income refers to the tax period relating to the calendar year of greatest use of the fellowship (for the academic year 2024/2025 the year 2025). Exceeding the income limit in one of the academic years of enjoyment of the fellowship determines the loss of the right to the fellowship for the year in which the income event incompatible with the fellowship occurred. In this case there will be an obligation to return any monthly payments already received during the academic year.

**3.** The doctoral fellowship is paid in installments on a deferred monthly basis, has an annual duration and is renewed annually for the duration of the course, provided that the doctoral student has completed the activities foreseen in the previous year and has been admitted by the Teaching Board to the 'next year.

**4.** Doctoral fellowships cannot be cumulated with research grants or other fellowships awarded for any reason, except with those granted by national or foreign institutions useful for integrating training or research activities with stays abroad.

**5.** The amount of the fellowship is increased by 50 percent for periods of stay abroad at universities or research institutes previously authorized by the teaching body and proven by a certificate from the host



institution, not less than 30 consecutive days and overall not exceeding 12 months, extendable up to 18 months for doctorates in co-supervision with foreign universities and for those activated in associated form pursuant to article 3, paragraph 2 of Ministerial Decree no. 226/2021. The doctoral student is required to certify the actual stay abroad under penalty of reimbursement of the amount received. The increase cannot be received for stays spent in the country of origin or in the country of residence of the doctoral students.

## Art. 10 Rights and duties of doctoral students

**1.** Without prejudice to the rights and obligations provided for by the current University Regulations regarding Research Doctorates and by Ministerial Decree no<sup>°</sup> 226/21, acceptance of grants implies compliance with the obligations established by the relevant funding sources.

**2.** Admission to the doctorate involves an exclusive, full-time commitment. Doctoral students have the obligation to assiduously attend doctoral courses, to carry out all study and research activities in the structures intended for this purpose and according to the methods established by the Teaching Board, to present to the Teaching Board, at the end of each year of the course, an oral or written report on the activity and research carried out and to comply with anything else established by the College itself.

**3.** Each PhD student is guaranteed a budget for research activity in Italy and abroad amounting to no less than 10% of the cost of the Ministerial grant.

**4.** Pursuant to Ministerial Decree no<sup>°</sup> 629/2023, recipients of funded fellowships are required to comply with the following obligations:

- for PNRR research grants: spend a period of study and research abroad for a minimum of six (6) months;

- for Public Administration, Cultural Heritage, Digital and Environmental Transitions fellowships: spend a period of study and research abroad for a minimum of six (6) months and include periods of study and research in companies or research centers or Public Administrations of minimum six (6) months.

**5.** Pursuant to Ministerial Decree no<sup>°</sup> 630/2023, recipients of funded fellowships are required to comply with the following obligations:

- spend a period of study and research abroad of at least six (6) months;

- spends a period of study and research in the company of at least six (6) months.

**6.** The winner of the fellowship for the HPC Project will have to carry out a mandatory period of study and research in public or private entities abroad of at least ninety (90) days in the three-year period, previously authorized by the Teaching Body.

**7.** Doctoral students are required to read itof the University Regulations regarding Research Doctorates of the University of Calabria and to consultperiodically the web portal, in particular the page <a href="https://www.unical.it/didattica/editore-formativa/dottorati/">https://www.unical.it/didattica/editore-formativa/dottorati/</a>.

### Art. 11 Final exam and awarding of the title

The title of Doctor of Research ("Dott. Ric. or Ph.D.") is issued by the Rector of the University of Calabria at the conclusion of the Course following the public discussion, before a Commission appointed by the Rector himself, of a thesis research that contributes to the advancement of knowledge or methodologies in the chosen field of investigation, in accordance with the provisions of the University Regulations regarding Research Doctorates.



### Art. 12 Ownership of the results

1. Intellectual property rights on the possible results achieved by the doctoral student, including, by way of example and not limited to, software, patentable or non-patentable industrial inventions, know-how, models, data and data collections, are regulated in accordance with current legislation, the University regulations and based on what is established in the individual agreements with the Universities, Companies or Bodies involved.

2. The doctoral student has the obligation to communicate the achievement of the results without delay to the Coordinator, undertaking not to disclose them or use them without the prior authorization of the University. In the event that the doctoral student collaborates in research groups, he may be invited to sign a specific commitment to recognize intellectual property rights and confidentiality in relation to information, data and documents of a confidential nature that he becomes aware of in carrying out his activity. at and/or on behalf of the University.

## Art. 13 Processing of personal data

1. Pursuant to art. 13 of the General Data Protection Regulation (Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016), candidates are informed that the processing of personal data provided by them during participation in the selection or otherwise acquired to this end by the University of Calabria is aimed solely at carrying out the competition activities and will be carried out by the people in charge of the competition proceedings, also by the Judging Commission, at the University of Calabria, with the use of also computerized procedures , in the ways and within the limits necessary to pursue the aforementioned purposes, even in the event of any communication to third parties. The provision of such data is necessary to verify the participation requirements and possession of qualifications and failure to provide them may preclude such verification.

The data collected by the University of Calabria, for the aforementioned purposes, will be processed through an automated database even after the conclusion of the selection procedure for the purposes inherent to the management of the academic careers of the winners. They may also be used, in aggregate form and for statistical purposes, also by the MUR.

**2.** The personal data provided by the candidates will be communicated to the administrative structures of the University of Calabria and to the public bodies directly interested in the legal and economic position of the successful candidates.

**3.** Candidates are granted the rights referred to in the articles. 15 et seq. of the aforementioned Regulation 2016/679, in particular, the right to access their personal data, to request rectification, cancellation, limitation of processing, as well as to oppose their processing, addressing requests to the University of Calabria.

Interested parties who believe that the processing of personal data relating to them occurs in violation of the provisions of the Regulation have the right to lodge a complaint with the Guarantor for the protection of personal data, as provided for by the art. 77 of the Regulation itself, or to take action in the appropriate judicial offices (art. 79 of the Regulation).

**4.** All documentation and information relating to the protection of personal data of the University of Calabria are available at the following link: <u>https://www.unical.it/privacy/.</u>



**5.** The data controller is the University of Calabria, via Pietro Bucci, 87036 Arcavacata di Rende (CS), tel. (+39) 0984 4911.

**6.** The contact details of the Data Protection Officer (Responsabile Protezione Dati RPD) are: via Pietro Bucci, Cubo 7/11, 87036 Arcavacata di Rende (CS), tel. (+39) 0984 493918; e-mail: rpd@unical.it.

### Art. 14 Responsible for the procedure

Pursuant to Law 7 August 1990, no<sup>o</sup> 241, the person responsible for the procedure of this selection notice is the Head of the Research Doctorates Sector of the Research, Innovation and Social Impact Area - University of Calabria (e-mail: <u>dottorati@unical.it</u>).

#### Art. 15 Final rules

**1.** For anything not explicitly specified in this selection notice, the provisions established by current legislation on the matter, by the University Regulations on research doctorates, by the PNRR, as well as by the relevant ministerial implementing decrees, apply.

**2.** This selection notice is translated into English but in the event of disputes the legal text of reference will be the one in Italian.

The Rector Nicola Leone

Within this notice, terms relating to people appear only in the masculine form. They refer indiscriminately to people of the female and male gender. Formulations that respect gender identity were renounced so as not to compromise the readability of the text and satisfy the need for simplicity of the same.

Document digitally signed pursuant to the Digital Administration Code and related regulations.









### ANNEX A "ANALYTICAL SHEETS OF RESEARCH DOCTORAL COURSES - XL cycle - AY 2024/2025"

SUMMARY OF AVAILABLE POSITIONS				
No°	No° PhD Course Coordinator Positions available		Positions available	Pages
1	Information and Communication Technologies	Prof. Giancarlo Fortino	<b>7 positions</b> : - n. 1 position with fellowship Ministerial Decree 629/2024 PA - n. 1 position with fellowship PNRR CN HPC project - n. 5 positions with fellowship Ministerial Decree 630/2024	16-18
2	Civil and Industrial Engineering	Prof. Domenico Mundo	<b>7 positions</b> : - n. 1 position with fellowship Ministerial Decree 629/2024 PA - n. 6 positions with fellowship Ministerial Decree 630/2024	19-21
3	Life Science and Technology	Prof. Tommaso Angelone	<b>6 positions</b> : - n. 1 position with fellowship Ministerial Decree 629/2024 PA - n. 5 positions with fellowship Ministerial Decree 630/2024	22-25
4	Mathematics and Computer Science	Prof. Giorgio Terracina	<b>1 position</b> : - with fellowship Ministerial Decree 630/2024	
5	Translational Medicine	Prof. Stefania Catalano	<b>3 positions</b> : - n. 1 position with fellowship Ministerial Decree 629/2024 PA - n. 2 positions with fellowship Ministerial Decree 630/2024	29-31
6	Geology, Engineering and Science of Sustainable Earth and Energy Transition	Prof. Salvatore Critelli	<ul> <li>- 4 positions:</li> <li>- n. 1 position with fellowship Ministerial Decree 629/2024 TDA</li> <li>- n. 3 positions with fellowship Ministerial Decree 630/2024</li> </ul>	32-35
7	Physical, Chemical and Materials Sciences and Technologies	Prof. Gabriella Cipparrone	<b>2 positions</b> - n. 1 position with fellowship Ministerial Decree 629/2024 PNRR Research - n. 1 position with fellowship Ministerial Decree 630/2024	36-38
8	Economic and Business Sciences	Prof. Fabio Piluso	<b>1 position</b> : - with fellowship Ministerial Decree 629/2024 PA	39-40
9	Technology Applied to Cultural Heritage	Prof. Mauro Francesco La Russa	<b>3 positions</b> : - n. 1 position with fellowship Ministerial Decree 629/2024 PC - n. 2 positions with fellowship Ministerial Decree 630/2024	41-42



## PhD Course in "Information and Communication Technologies"

Coordinator	Prof. Giancarlo Fortino - Department of Computer Engineering, Modelling, Electronics and Systems (DIMES) Via Pietro Bucci - Cubo 41/C, 87036 Arcavacata di Rende (CS) Tel.: +39 0984.494063 - e-mail: <u>g.fortino@unical.it</u> - SSD: ING-INF/05	
Duration	3 years	
Main Department	Department of Computer Science, Modelling, Electronics and Systems Engineering (DIMES)	
CUN Areas and Scientific Disciplinary SectorsCUN Area 01: MAT/08, MAT/09, INF/01; CUN area 09: ING-INF/01, ING-INF/02, ING-INF/03, ING-INF/0 ING-INF/07, ING-IND/24, ING-IND/ 31; CUN Area 11: M-STO/08.		
Research Topics	<ul> <li>The educational path of the doctoral course is multidisciplinary and strongly oriented towards the integration, development and use of new Information and Communication Technology (ICT) systems. The main research topics are listed below:</li> <li>Design of Internet of Things (IoT) systems.</li> <li>Cybersecurity.</li> <li>Big Data analysis techniques and applications.</li> <li>Artificial intelligence.</li> <li>Wearable computing and m-health systems.</li> <li>Modeling and simulation for the reliability analysis of IoT systems.</li> <li>Software engineering methodologies for the development of distributed and complex software systems.</li> <li>Models and algorithms for digital social networks.</li> <li>Management and analysis systems for large amounts of data and scalable processing: distributed systems, parallel systems, cloud computing architectures and systems, provisioning models.</li> <li>Knowledge Management: document management, extraction, integration and modeling of knowledge, methodologies for formalization and classification taxonomies, thesauri and ontologies, management of distributed data, data mining and data warehousing.</li> <li>Microsystems: development and characterization of intelligent MEMS devices.</li> <li>Development of low-power, high-performance circuits and systems for 3D image processing.</li> <li>Photovoltaic conversion: solar cell models and technologies, intelligent systems for energy management, conversion and storage.</li> <li>Energy-efficient integrated circuits for logic and memory applications.</li> <li>Modeling and design of spintronic nanodevices.</li> </ul>	









	Systems and techniques for the management	ement of electric mobility			
	infrastructures				
	Reconfigurable antennas.				
	<ul> <li>Smart antennas and their integration.</li> </ul>				
	<ul> <li>Advanced techniques for measuring electroma</li> </ul>	agnetic fields.			
	<ul> <li>Electromagnetic diagnostics and biomedical a</li> </ul>	pplications.			
	• Radar systems for environmental monitoring.				
	• Electronic circuits for radio frequency applicat	ions.			
<ul> <li>Monolithic integration of transmitters and receivers.</li> </ul>					
	<ul> <li>Energy efficiency in wireless sensor networks.</li> </ul>				
	<ul> <li>Cognitive networks and 5G systems.</li> </ul>				
	<ul> <li>Technologies, protocols and network architect</li> </ul>	tures for IoT systems			
	<ul> <li>New generation vehicular networks and proto</li> </ul>	-			
	<ul> <li>Control and estimation for networked agent s</li> </ul>				
	<ul> <li>Control strategies resilient to cyber-attacks in</li> </ul>	-			
		-			
	<ul> <li>Safe navigation schemes and environment autonomous robots.</li> </ul>	reconstruction for teams of			
		as and control in outonomous			
	<ul> <li>Techniques and devices for navigation, guidan underwater vehicles.</li> </ul>	ce and control in autonomous			
	• Techniques and devices for underwater ad	coustic communications and			
<ul> <li>rechniques and devices for underwater acoustic communi localization.</li> </ul>					
<ul> <li>Non-destructive diagnostics of materials.</li> </ul>					
<ul> <li>Fault diagnosis and isolation techniques and control reconfig</li> </ul>					
					dynamic systems.
	<ul> <li>Synchronization methods for IoT-based distributed measurement syst</li> </ul>				
	<ul> <li>IoT-based distributed measurement systems for structural monitoring</li> </ul>				
	• Food engineering.				
	Legal IT				
	- Degree (before Ministerial Decree 509/1999)				
Participation	(formerly Ministerial Decree 509/1999 and M				
Requirements	- Equivalent qualification obtained from legally recognized foreign				
universities.					
Admission Procedures	Assessment qualifications and oral exam.				
	The knowledge of the English language will be assessed during the oral exam				
	- Research project.				
Assessable	- Curriculum Vitae et Studiorum (CV) with atta				
Qualification	and Master's Degree or Degree before Minis				
	indication of the exams taken and related grad				
	Maximum overall score 60				
Assessment	Qualification Assessment	Score			
Criteria		maximum 30 points			
Criteria	Research project	Maximum score 10 points			
	Curriculum Vitae et Studiorum (CV) Maximum score 20 points				









		Oral exam		
		ral exam will focus	s on the	Score
	description of the p	proposed research pr	roject and	maximum 30 points
	the areas of interes		-	-
	Minimum score r	required for the a	dmission to	the oral admission and
	examinsation: 21 p	oints		
	7 (seven) positions	of which:		
Positions and Fellowships	<ul> <li>7 (seven) positions of which:</li> <li>n. 1 position with fellowship Ministerial Decree 629/2024 PA, on the research topic: Digitalization methods based on AI and/or Big Data, administrative category 4 - PNRR;</li> <li>n. 1 position with fellowship PNRR CN HPC project, on the research topic: Models and Techniques for the Management and Analysis of Big Data in HPC Systems, administrative category 4 - PNRR;</li> <li>n. 5 positions with fellowship Ministerial Decree 630/2024, administrative category 5 - Innovative Doctorates: <ul> <li>n. 1 co-financed by the company SISMLAB srl, on the research topic: Development of signal processing algorithms and prototype electronic systems for the mechanical characterization and detection of defects in metal and concrete structures via ultrasonic diagnostics;</li> <li>n. 1 co-financed by the company Quantavis srl, on the research topic: Design of neuromorphic integrated circuits;</li> <li>n. 1 co-financed by the NXP company, on the research topic: Design and verification of antennas at millimeter frequencies, in highly integration-intensive substrates and optimized for large-scale production;</li> <li>n. 1 co-financed by the Bruno Kessler Foundation, on the research topic: Study of the dynamics of disinformation diffusion on federated social media;</li> <li>n. 1 co-financed by the company Tecnoter srl, on the research topic:</li> </ul></li></ul>			
	Emerging Don	nains".		
	Test	Date	Time	Place
	Results of			http://dottorato.dimes.u
	Qualification	tion 25 July, 2024		nical.it/
	Assessment			
Agenda		26 July, 2024	9:00 a.m.	DIMES Seminar Room,
	Oral exam			University of Calabria
	The supervise of the			Arcavacata di Rende (CS)
		exam will be posted o	on the websi	te:
Contact datails for	<u>http://dottorato.di</u>	mes.unical.it/		
Contact details for	<u>g.fortino@unical.it</u>			
information	http://dottorato.di			



# PhD Course in "Civil and Industrial Engineering"

	Duck Demonics Munde Demontrate of Machanizal France		
Coordinator	Prof. Domenico Mundo - Department of Mechanical, Energy and Management Engineering (DIMEG) - Via Pietro Bucci - Cubo 45/C, 87036 Arcavacata di Rende (CS) Tel.: +39 0984.494159 - e-mail: <u>domenico.mundo@unical.it</u> - SSD: ING- IND/13		
Duration	3 years		
Main Department	Department of Mechanical, Energy and Management Engineering (DIMEG)		
Other DepartmentsDepartment of Civil Engineering (DInCi)Other DepartmentsDepartment of Computer Science, Modelling, Electronics and SysinvolvedEngineering (DIMES)Department of Environmental Engineering (DIAm)			
CUN Areas and Scientific Disciplinary Sectors	CUN Area 08: ICAR/01, ICAR/02, ICAR/04, ICAR/05, ICAR/07, ICAR/09, ICAR/10, ICAR/14 ICAR/17, ICAR/20 Area CUN 09: ING-IND/08, ING-IND/09, ING-IND/10, ING-IND/11, ING- IND/13, ING-IND/14, ING-IND/15, ING-IND/ 16, ING-IND/17, ING-IND/22, ING-IND/24, ING-IND/25, ING-IND/26, ING-IND/35		
Research Topics	The doctoral course aims to develop skills in the topics relating to the two reference curricula: Civil Engineering and Industrial Engineering.		
Participation Requirements	<ul> <li>Master's Degrees (ex DM 270/2004): LM-3 Landscape Architecture, LM-4 4 Architecture and Building Engineering-Architecture, LM-4 cu Architecture and Building Engineering-Architecture (five-year), LM-20 Aerospace and Astronautical Engineering, LM -21 Biomedical Engineering, LM-22 Chemical Engineering, LM-23 Civil Engineering, LM- 25 Automation Engineering, LM-26 Safety Engineering, LM-28 Electrical Engineering, LM-30 Energy and Nuclear Engineering, LM-31 Engineering Management, LM-32 Computer Engineering, LM-33 Mechanical Engineering, LM-35 Environmental and Land Engineering, LM-53 Materials Science and Engineering.</li> <li>Specialist Degrees (ex DM 509/1999): 3/S (Specialist Degrees in Landscape Architecture), 4/S (Specialist Degrees in Acrospace and Astronautical Engineering), 25/S (Specialist Degrees in Biomedical Engineering), 27/S (Specializations in chemical engineering), 28/S (specialists in Civil Engineering), 29/S (specialists in Automation Engineering), 31/S (specialists in Electrical Engineering), 33/S (specialists in Energy and Nuclear Engineering), 34/S (specialists in Management Engineering), 35/S (specialists in computer engineering), 36/S (specialists in Mechanical Engineering), 38/S (specialists in Environmental and Territorial Engineering), 61/S (specialists in Materials Science and Engineering);</li> </ul>		









Admission Procedures	<ul> <li>Bachelor's Degrees (before Ministerial Decree 509/1999) equivalent to the Master's Degrees mentioned above pursuant to Ministerial Decree 09/07/2009.</li> <li>Qualification obtained from legally recognized foreign universities, equivalent to one of the above.</li> <li>Assessment qualifications and oral exam.</li> <li>The knowledge of the English language will be assessed during the oral test.</li> <li>Curriculum Vitae et Studiorum (CV) with attached certificate of Master's Degree (or equivalent) with analytical indication of the exams taken and related grade; for undergraduates it is sufficient to certify the exams taken and taken and the related grade.</li> </ul>		
Assessable Qualification	<ul> <li>taken and the related grade.</li> <li>Research project.</li> <li>Any publications relating to the topics of the Doctorate.</li> <li>Any Masters, Grants and Research Grants relating to the topics of the Doctorate.</li> </ul>		
	Maximum overall scor	· ·	
	Qualification Assessment	Maximum score 30 points	
	Research projectMaximum score 15 pointsCurriculum Vitae et Studiorum (CV) with attached certificate of Master's Degree (or equivalent) with analytical indication of the exams taken and related grade; for undergraduates it is sufficient to certify the exams taken and the related gradeMaximum score 9 points		
Assessment Criteria	Publications relevant to the topics of the Doctorate	Maximum score 3 points	
	Masters, grants and research grants related to the topics of the Doctorate	Maximum score 3 points	
	Oral examMethod of implementation: Discussion of the proposed research project and the scientific and professional experiences gained. During the oral test, knowledge of the English language will be tested.Maximum score 30 pointsMinimum score for access to the oral test and for passing the interview: 23 points		
Positions and Fellowships	<ul> <li>7 (seven) positions of which:</li> <li>- n. 1 place with fellowship Ministerial Decree 629/2024 PA, on the research topic "Digitalization, innovation, competitiveness and security in the Public Administration", administrative category 4 - PNRR</li> <li>- n. 6 positions with fellowship Ministerial Decree 630/2024 administrative category 5 - Innovative Doctorates:</li> </ul>		



	<ul> <li>n. 1 co-financed by the company 3D4MEC srl, research topic: "Contribution to the development of a larger-scale metal additive</li> </ul>			
	manufacturing machine";			
	<ul> <li>n. 1 co-financed by the company GPI SpA, research topic: "Business Process Digitalization in the healthcare sector";</li> </ul>			
	<ul> <li>n. 1 co-financed by the company Personal Factory, research topic: "Efficient and sustainable drying of powdered chemical products for circular processing in the construction industry";</li> </ul>			
	<ul> <li>n. 1 co-financed by the company Siemens Industry Software NV, research topic: "Advanced modeling and testing methodologies to face structural dynamics challenges";</li> </ul>			
	<ul> <li>n. 1 co-financed by the company Vega Energia srl, research topic: "The role of buildings in energy communities";</li> </ul>			
	<ul> <li>n. 1 co-financed by the company Clor Industry srl, research topic: "Additive deposition strategies for reinforced composites".</li> </ul>			
	Test	Date	Time	Place
	Test Results of Qualification Assessment	<b>Date</b> July 26, 2024	Time	Place dici.unical.it
Agenda	Results of Qualification		Time           3.00           pm	
Agenda	Results of Qualification Assessment Oral exam	July 26, 2024	3.00 pm	dici.unical.it "Giannattasio" DInCi classroom (cube 45/b, driveway bridge level), University of Calabria Arcavacata di Rende (CS)
Agenda Contact details for information	Results of Qualification Assessment Oral exam	July 26, 2024 July 29, 2024 exam will be posted o	3.00 pm	dici.unical.it "Giannattasio" DInCi classroom (cube 45/b, driveway bridge level), University of Calabria Arcavacata di Rende (CS)



# PhD Course in "Life Science and Technology"

Coordinator	Prof. Tommaso Angelone - Department of Biology, Ecology and Earth Sciences (DiBEST) - Via Pietro Bucci - Cubo 6/C, 87036 Arcavacata di Rende (CS) Tel.: +39 0984.492902 - e-mail: <u>tommaso.angelone@unical.it</u> - SSD: BIO/09		
Duration	3 years		
Main Department	nt Department of Biology, Ecology and Earth Sciences (DiBEST)		
CUN Areas and Scientific Disciplinary Sectors	CUN Area 01: MAT/09; CUN Area 03: CHIM/02, CHIM/06, CHIM/08, CHIM/09; CUN Area 04: GEO/01; Area CUN 05: BIO/01, BIO/02, BIO/03, BIO/05, BIO/06, BIO/07, BIO/09, BIO/10, BIO/11, BIO/15, BIO/16, BIO/ 18; CUN Area 06: MED/04; CUN Area 08: ICAR/03; CUN Area 09: ING-IND/24.		
Research Topics	The Doctorate is multidisciplinary and aims to develop skills in the following research topics. Experimental cardiology. Cellular physiology. Signal transduction mechanisms. Biochemical and biomolecular aspects of membrane transport systems. Applications of membrane transport systems to human health and drug design. Analysis of genetic and epigenetic variability in relation to human aging and forensic issues; biology, genetics and epigenetics of microorganisms and their relationship with the host. New molecular mechanisms involved in the progression of hormone-sensitive tumors. Bioinformatic analysis of multi-omics data for cancer research through digital platforms and solutions. Biodiversity. Wildlife conservation and risk. Developmental biology. Neurobiology. Morphofunctional cellular alterations in eukaryotes. Adaptive biology of fish in aquaculture. Behavioral ecology. Morpho-functional organ adaptations in the presence of environmental, physical and chemical stress. Cyto-physiology of apical meristems. Molecular and cytophysiological aspects induced by secondary metabolites. Environmental stress and parasites. Identification and characterization of genes involved in key metabolic processes. Comparative study of the genome and mitochondrial gene expression of plants. Epigenetic mechanisms and developmental processes in plants. Response of plant organisms to environmental stress. Plant biosystematics. Flora and vegetation of Calabria. Biodiversity and conservation of plant resources. Cytophysiological and molecular analysis of seagrasses; ecological analysis and functioning of coastal marine ecosystems. Bioindicators of internal water quality. New synthetic and nutraceutical compounds of plant and animal matrices using high resolution MALDI-MS and MS/MS and NMR. Self-assembly of multifunctional biocompatible molecular nanoarchitectures for drug delivery and tissue reconstitution. Use of arthropods in the assessment of environmental quality and		



	in forensic investigations, parasitosis in humans and animals caused by some
	species of insects.
	Study of fossil organic matter, in particular lipid biomarkers, in biogenic carbonates
	for the characterization of the evolution of their biocoenosis in the history of life.
	Agri-food and pharmacological processes. Characterization of weakly structured
	and multiphasic systems for food and pharmacological applications. Rheology of
	complex systems. Renewable energy sources. Efficiency of energy production
	processes. Air monitoring technologies. Development of water and industrial waste
	treatment and management systems. Innovative systems for optimizing the waste
	hierarchy and preventing the creation of waste. Development and characterization
	of new additives for the asphalt industry to safeguard the health of workers and
	the environment. Characterization and study of biomimetic membranes using
	chemical-physical techniques. Characterization and study of bituminous
	membranes using chemical-physical techniques
	- Italian Master's Degrees (ex DM 270/204): LM-6 Biology; LM-7 Agricultural
	Biotechnology; LM-8 Industrial Biotechnology; LM-9 Medical, Veterinary and
	Pharmaceutical Biotechnologies; LM-11 Sciences for the conservation of
	cultural heritage; LM-13 Pharmacy and industrial pharmacy; LM-17 Physics, LM-
	18 Computer Science, LM-21 Biomedical Engineering; LM-22 Chemical
	Engineering; LM-23 Civil Engineering, LM-30 Energy and Nuclear Engineering,
	LM-31 Management Engineering, LM-32 Computer Engineering; LM-33
	Mechanical Engineering; LM-35 Environmental and Territorial Engineering; LM-
	40 Mathematics; LM-41 Medicine and Surgery; LM-42 Veterinary Medicine; LM-
	44 Mathematical-physical modeling for engineering, LM-53 Materials science
	and engineering, LM-54 Chemical sciences; LM-60 Natural Sciences; LM-61
	Nutrition Sciences; LM-69 Agricultural sciences and technologies; LM-70 Food science and technology; LM-74 Geological sciences and technologies, LM-75
	Sciences and technologies for the environment and the territory; LM-79
	Geophysical Sciences; LM-82 Statistical Sciences; LM-86 Zootechnical sciences
Participation	and animal technologies.
Requirements	- Italian Specialist degrees (ex DM 509/1999): 3/S (specialist in landscape
	architecture); 6/S (specialists in biology); 7/S (specialists in agricultural
	biotechnology); 8/S (specialists in industrial biotechnology), 9/S (specialists in
	medical, veterinary and pharmaceutical biotechnology); 12/S (specialists in
	conservation and restoration of the historical-artistic heritage), 14/S (specialists
	in pharmacy and industrial pharmacy), 20/S (specialists in physics), 23/S
	(specialists in IT), 26/S (specialists in specializations in biomedical engineering),
	27/S (specializations in chemical engineering), 28/S (specializations in civil
	engineering), 33/S (specializations in energy and nuclear engineering), 34/S
	(specializations in management engineering), 36/ S (specialists in mechanical
	engineering), 38/S (specialists in environmental and territorial engineering),
	45/S (specialists in mathematics), 46/S (specialists in medicine and surgery),
	47/S (specialists in veterinary medicine), 50/S (specialists in mathematical-
	physical modeling for engineering), 61/S (specialists in materials science and
	engineering), 62/S (specialists in chemical sciences), 68/S (specialists in science









	<ul> <li>of nature), 69/S (specialists in human nutrition sciences), 74/S (specialists in science and management of rural and forestry resources), 77/S (specialists in agricultural sciences and technologies), 78/S (specialists in agri-food sciences and technologies), 81/S (specialists in indusTest chemical sciences and technologies), 82/S (specialists in environmental and territorial sciences and technologies), 85/S (specialists in geophysical sciences), 86/S (specialists in geological sciences), 92/S (specialists in statistics for experimental research);</li> <li>Bachelor's Degrees (before Ministerial Decree 509/1999) equivalent to the Master's Degrees mentioned above pursuant to Ministerial Decree 09/07/2009.</li> <li>Qualification obtained from a legally recognized foreign university, equivalent to one of the above.</li> </ul>		
Admission Procedures	Assessment qualifications and oral exam.	scad during the arel test	
Assessable Qualification	<ul> <li>The knowledge of the English language will be assessed during the oral test.</li> <li>Research project.</li> <li>Curriculum vitae and studiorum (CV).</li> <li>Any other titles (Publications, Conference participation).</li> </ul> Maximum overall score 60 points		
	Qualification Assessment Research project to be drawn up in Italian or English only and exclusively according to the scheme at the following link: https://www2.unical.it/portale/portaltemplates/v iew/view.cfm?118202.	Maximum score 30 points Maximum score 20 points	
	Curriculum Vitae et Studiorum (CV)	Maximum score 5 points	
	Other titles: Publications, participation in conferences.	Maximum score 5 points	
Assessment Criteria	Oral exam		
	Procedure: The oral test will focus on the discussion of the research project, the Curriculum Vitae et Studiorum (CV) and the other qualifications presented. The candidate's skills will be assessed for the purpose of carrying out the project presented. During the oral test, knowledge of the English language will also be tested. Foreign candidates will be able to take the oral test electronically. Minimum score for access to the oral test and for particular.	Maximum score 30 points	







	connectivity. Corr biodiversity in pilo		adow ger	etic variability and epiphytic	
	- n. 5 positions with fellowship Ministerial Decree 630/2024, administrative				
	category 5 - Innovative Doctorates				
	• n. 1 co-financed by the company Synbalance srl, research topic: "Novel				
	pharmaceutical technologies for the stabilization of probiotics";				
	n. 1 co-financed by the company Romolo Hospital srl, research topic: "New				
	perspectives for the prevention and treatment of kidney stones through the				
	identification of genetic, epigenetic and environmental profiles";				
			-	ola Mulinum srl, research topic:	
		of ancient grains of Ca			
				Ingredients srl, research topic:	
	"Study of pectins obtained with innovative methods and their potential				
	commercial applications";				
	<ul> <li>n. 1 co-financed by the companyValter Longo Onlus Foundation, research</li> </ul>				
	topic: "Nutritional interventions and longevity: molecular, clinical and functional aspects for characterizing a successful anti-aging strategy".				
	Test	Date	Time	Place	
	1630	Date	Time	https://dibest.unical.it/didatt	
	Result of			ica/formazione-post-	
		Qualification July 29, 2024 Assessment		laurea/dottorato-di-	
	Assessment			ricerca/dottorato-ricerca-life-	
				science-technology/	
Agenda				Room 5C3 DiBEST	
	Oral exam July 30, 2024	9:00	(cube 5C, driveway),		
		July 30, 2024	a.m.	University of Calabria	
				Arcavacata di Rende (CS)	
	The results of the exam will be posted on the website:				
	https://dibest.unical.it/didattica/formazione-post-laurea/dottorato-di- ricerca/dottorato-ricerca-life-science-technology/				
Contact details for		doctoral course: Prof. 902, e-mail: <u>tommaso.</u>		<b>e</b>	
information		DottoratoLifeScienceA			
		al.it/didattica/formazi			
PhD Course website					
	ricerca/dottorato-ricerca-life-science-technology/				



### PhD Course in "Mathematics and Computer Science"

Coordinator	Prof. Giorgio Terracina - Dipartimento di Matematica e Informatica (Department of Mathematics and Computer Science) - Via Pietro Bucci - Cubo 31/B, 87036 Arcavacata di Rende (CS) Tel.: +39 0984.496465 - e-mail: <u>giorgio.terracina@unical.it</u> - SSD: INF/01			
Duration	3 years			
Main Department	Dipartimento di Matematica e Informatica (Department of Mathematics and Computer Science)			
Other Departments involved	Dipartimento di Ingegneria Meccanica, Energetica e Gestionale - DIMEG (Department of Mechanical, Energy and Management Engineering)			
CUN Areas and Scientific DisciplinaryArea CUN 01: INF/01 - Computer Science, MAT/02 - Algebra, MAT/03 - Ge MAT/04 - Complementary Mathematics, MAT/05 - Mathematical MAT/06 - Probability and Mathematical Statistics, MAT/07 - Mathematical Physics, MAT/08 - Numerical Analysis, MAT/09 - Operations Research				
Research Topics	<ul> <li>The main research topics are listed below:</li> <li>Artificial Intelligence, Knowledge Representation and Reasoning, Answer Set Programming, Logic Programming, Constraint Satisfaction Problems.</li> <li>Artificial Intelligence in multidisciplinary contexts.</li> <li>Databases, Data and Knowledge Integration, Data and Text-Mining, Knowledge Management.</li> <li>Theoretical Computer Science, Game theory, Decidability and Complexity Theory.</li> <li>Grid Computing, Computational Science, Cellular Automata.</li> <li>Optimization Models and Methods for solving problems in Transport and Logistics.</li> <li>Optimization Nonlinear e Machine Learning.</li> <li>Combinatorics.</li> <li>Study of canonical models of surfaces of general type. Algebraic curves and their moduli spaces. Groups and Graphs.</li> <li>Interactions between algebra and geometry and between geometry and mathematical physics in modern and contemporary Mathematics. Historical developments of the decisions theory. History of the mathematics in the didactical field. Mathematic teaching with particular interest in the role and in the use of the technology.</li> <li>Calculus of variations. Variational methods in Nonlinear Analysis. Critical point Theory and applications to nonlinear PDE. Geometry of Banach spaces. Local and nonlocal ODE. Approximation methods. Minimum problems and projections. Equilibrium problems. Uniform distribution and discrepancy.</li> <li>Monte Carlo type integration methods.</li> <li>Random fields, namely: percolation, statistical mechanics, interacting particle systems, dynamic systems, quantitative finance, stochastic simulation and mathematical statistics.</li> </ul>			









	<ul> <li>Quantum Theory problems. Group-theoretic approach to the interaction theory. Semiclassical models for the electricity and heat transmission in semiconductors. Coupling problems in devices-electrical networks.</li> <li>Sequences of Sheffer polynomials and approximation of the involved operators. Numerical approximation of solutions to high order partial differential equations under boundary conditions or initial data. Approximations for Scattered Data and rational interpolation. Applications to engineering problems and statistics.</li> </ul>			
Participation Requirements	Ministerial Dec Decree 509/19	cree 509/1999) or Ita	alian Univ	inisterial Decree 270/2004 and rersity Degree (before Ministerial foreign university.
Admission Procedures		alifications and oral ex of the English langua		n. assessed during the oral exam.
Assessable Qualification	<ul> <li>Research project</li> <li>Curriculum Vitae et Studiorum (CV) including a copy of Bachelor's and Master's</li> <li>Degree (in Italian or English) and the list of examinations taken with grade and final mark (download the template from www.mat.unical.it/phd/Admission).</li> </ul>			
	Maximum score 60 points			
	Qualification A	ssessment		Maximum score 30 points
	Research project		Maximum score 15 points	
	Curriculum Vitae et Studiorum (CV)			Maximum score 15 points
Assessment Criteria	Procedure: Project discussi on disciplines r doctorate. Can abroad may tak Italian candidat presentation of may take the te authorized by t Minimum scor examination: 2	didates residing se the test online. tes, subject to f a justified request, est online if he Commission. re required for the 1 points	admissi	Maximum score 30 points on to the oral admission and
Positions and Fellowships	<ul> <li>1 (one) position with fellowship Ministerial Decree 630/2024, administrative category 5 - Innovative Doctorates:</li> <li>co-financed by the company Nuovo Pignone Tecnologie srl, research topic: Advanced ML algorithms for Energy;</li> </ul>			
	Test	Date	Time	Place
Agenda	Results of Qualification Assessment	July 29, 2024		www.mat.unical.it/phd



	Oral exam	July 31, 2024	9:00 a.m. CEST	Room MT10 (cube 30B), Department of Mathematics and Computer Science University of Calabria Arcavacata di Rende (CS) online - the link will be provided at the web page <u>http://www.mat.unical.it/phd/A</u> <u>dmission</u>	
	The results of the exam will be posted on the website: http://www.mat.unical.it/phd/Admission.				
Contact details for information	arduino.dieni@unical.it				
PhD Course website	www.mat.unical.it/phd				



### PhD Course in "Translational Medicine"

Coordinator	Prof. Stefania Catalano - Dipartimento di Farmacia e Scienze della Salute e della Nutrizione (Department of Pharmacy and Health and Nutritional Sciences) Edificio Polifunzionale, 87036 Arcavacata di Rende (CS) Tel.: +39 0984.496207 - e-mail: <u>stefania.catalano@unical.it</u> - SSD: MED/05		
Duration	3 years		
Main Department	Department of Pharmacy, Health and Nutritional Sciences		
Other departments involved	Department of Chemistry and Chemical Technologies (Chimica e tecnologie Chimiche - CTC)		
CUN Areas and Scientific Disciplinary Sectors	CUN Area 03: CHIM/01, CHIM/02, CHIM/03, CHIM/06, CHIM/08, CHIM/09, CHIM/10; CUN Area 05: BIO/10, BIO/11, BIO/12, BIO/13, BIO/14, BIO/15, BIO/16; CUN Area 06: MED/03, MED/04, MED/05, MED/06, MED/07, MED/09, MED/11, MED/14, MED/15, MED/18, MED/45, MED/ 46, MED/50; CUN Area 07: AGR/15.		
Research Topics	<ol> <li>Molecular Design;</li> <li>Molecular bases of diseases and innovative therapeutic applications.</li> </ol>		
Participation Requirements	<ul> <li>Italian Master's Degrees (ex DM 270/204): LM-6 Biology, LM-9 Medical, veterinary and pharmaceutical biotechnologies, LM-13 Pharmacy and industrial pharmacy, LM-17 Physics, LM-21 Biomedical engineering, LM-22 Chemical engineering, LM-41 Medicine and Surgery, LM-42 Veterinary Medicine, LM-53 Materials Science and Engineering, LM-54 Chemical Sciences, LM-61 Human Nutrition Sciences, LM-70 Food Science and Technology, LM-71 Science and Technology of industrial chemistry, LM/SNT3 Sciences of technical health professions, LM/SNT4 Sciences of prevention health professions;</li> <li>Italian Specialist degrees (ex DM 509/1999): 6/S (specialists in biology), 9/S (specialists in pharmacy and industrial pharmacy), 20/S (specialists in pharmacy and industrial pharmacy), 20/S (specialists in physics), 26/S (specialists in biomedical engineering), 27/S (specialists in chemical engineering), 46/S (specialists in materials science and engineering), 62/S (specialists in chemical sciences), 78/S (specialists in agrifood sciences and technologies), 79/S (specialists in agrifood sciences and technologies), 81/S (specialists in the sciences and technologies), 81/S (specialists in the sciences and technologies), 81/S (specialists in the sciences and technologies), 79/S (specialists in the sciences of prevention health professions);</li> <li>Bachelor's Degrees (before Ministerial Decree 509/1999) equivalent to the Master's Degrees mentioned above pursuant to Ministerial Decree 07/09/2009;</li> <li>Academic Degree obtained abroad equivalent to Master's Degree listen above.</li> </ul>		









Admission	Assessment qualifications and oral exam.				
Procedures	The knowledge of the English language will be assessed during the oral test.				
	-	Curriculum Vitae and Studiorum (CV).			
Assessable	Research proj	Research project.			
Qualification		lification and/or job ex	perienc	es.	
•	Any scientific publications.				
	,	Maximum ov	erall sco	pre 60 points	
	Quali	fication Assessment		Maximum score 30 points	
	Research project		Maximum score: 18 points		
		tae and Studiorum (CV)	)	Maximum score: 7 points	
		qualification and/or		Maximum score: 3 points	
	experiences.		Je.2		
	Scientific publ	ications		Maximum score: 2 points	
Assessment Criteria		Oral exam			
	Procedure:	Oral exam			
		ion and knowledge of	the	Maximum score 30 points	
		age. The oral examina			
	<b>°</b>	discussion of the re			
		sed by the applicant.	Scaren		
	· · · · ·	, ,,	niccion t	o the oral examination: 21 points	
		itions of which:	113310111	o the oral examination. 21 points	
			wchin	Ministerial Decree 629/2024 PA,	
			•		
	research topic: "Identification of New Molecular Targets in Chronic-				
Positions and	Degenerative Pathologies", administrative category 4 - PNRR;				
	- n. 2 (two) positions with fellowship Ministerial Decree 630/2024,				
Fellowships	administrative category 5 - Innovative Doctorates:				
	<ul> <li>n. 1 co-financed by the company Erbagil srl, research topic:</li> </ul>				
	<ul><li>"Neurosciences and Neuropharmacology",</li><li>n. 1 co-financed by the company Diatech Pharmacogenetics srl,</li></ul>				
	research topic: "Molecular Diagnostics and Precision Oncology".				
	Test	Date	Time	Place	
	Result of	hube 26, 2024		https://sites.google.com/unic	
	Qualification	July 26, 2024		al.it/phdintraslationalmedicin	
	Assessment			e/home-page	
				Seminar room	
Agenda				Department of Pharmacy and	
	Oral exam	July 29, 2024	9.30	Health and Nutrition Sciences -	
				University of Calabria Arcavacata	
	di Rende (CS)				
	The results of the exam will be posted on the website:				
	https://sites.google.com/unical.it/phdintraslationalmedicine/home-page				
Contact details for	Dr. Gemma Ca				
information	Department of Pharmacy and Health and Nutrition Sciences				
mormation	University of Calabria				



	Tel.: +39 0984.493109 Fax: +39 0984.493107
	Email address: gemma.capparelli@unical.it
PhD Course website	https://sites.google.com/unical.it/phdintraslationalmedicine/home-page



## PhD Course in "Geology, Engineering and Science of Sustainable Earth and Energy Transition"

Coordinator	Prof. Salvatore Critelli - Environmental Engineering Department (DIAm) - Via Pietro Bucci - Cubo 45/A, 87036 Arcavacata di Rende (CS)		
	Tel.: + 39 0984.496760 - e-mail: <u>salvatore.critelli@unical.it</u> - SSD: GEO/02		
Duration	3 years		
Main Department	Department of Environmental Engineering (DIAm)		
Other Departments involved	Department of Mechanical, Energy and Management Engineering (DIMEG) Department of Biology, Ecology and Earth Sciences (DiBEST) Department of Physics Department of Civil Engineering (DInCi) Department of Chemistry and Chemical Technologies (CTC) Department of Cultures, Education and Society (DiCES)		
CUN Areas and Scientific Disciplinary Sectors	CUN Area 01: MAT/07; CUN Area 02: FIS/01, FIS/07, FIS/08; CUN Area 03: CHIM/06, CHIM/07; CUN Area 04: GEO/01, GEO/02, GEO/04, GEO/06, GEO/07, GEO/08, GEO/09, GEO/10; CUN Area 08: ICAR/01, ICAR/02, ICAR/07, ICAR/08, ICAR/09, ICAR/20; CUN Area 09: ING-IND/22, ING-IND/27, ING-IND/33; CUN Area 10: L-ANT/09		
Research Topics	<ul> <li>The doctorate aims to develop skills in the fields of environmental geology and engineering, natural risks, georesources, large infrastructures and energy transition, basic and applied sciences to environmental sustainability. In particular:</li> <li>Modeling and simulation of complex systems.</li> <li>Measuring equipment and sensors.</li> <li>Natural resources and risks, soil and environmental protection and pollution.</li> <li>Geological evolution, geological processes and models, and resource geology.</li> <li>Territory, architecture and buildings.</li> <li>Energy, innovative materials and industrial transformations.</li> </ul>		
Participation Requirements	<ul> <li>Italian Degree (before Ministerial Decree 509/1999) or Italian Specialist/Master's Degree (formerly Ministerial Decree 509/1999 and Ministerial Decree 270/2004) among:</li> <li>LM-4 Architecture and building engineering-architecture</li> <li>LM-4 R Architecture and building engineering-architecture</li> <li>LM-4 cu Architecture and construction engineering-architecture (five years)</li> <li>LM-4 cu R Architecture and building engineering-architecture (five years)</li> <li>LM-4 cu R Architecture and building engineering-architecture (five years)</li> <li>LM-10 Conservation of architectural and environmental heritage</li> <li>LM-17 R Physics</li> <li>LM-18 Computer Science</li> </ul>		









LM-22 Chemical Engineering
LM-22 R Chemical Engineering
LM-23 Civil Engineering
LM-23 R Civil engineering
LM-24 Building systems engineering
LM-26 Safety Engineering
LM-26 R Safety Engineering
LM-30 Energy and nuclear engineering
LM-30 R Energy and nuclear engineering
LM-34 Naval Engineering
LM-35 Environmental and land engineering
LM-35 R Environmental and land engineering
LM-40 Mathematics
LM-40 R Mathematics
LM-44 Mathematical-physical modeling for engineering
LM-44 R Mathematical-physical modeling for engineering
LM-48 Urban and environmental territorial planning
LM-48 R Territorial, urban and environmental planning
LM-53 Materials Science and Engineering
LM-54 Chemical Sciences
LM-54 R Chemical Sciences
LM-60 Natural Sciences
LM-60 R Natural Sciences
LM-69 Agricultural sciences and technologies
LM-69 R Agricultural sciences and technologies
LM-71 Industrial chemical sciences and technologies
LM-71 R Industrial chemical sciences and technologies
LM-72 Navigation science and technology
LM-72 R Navigation science and technology
LM-73 Forestry and environmental sciences and technologies
LM-73 R Forestry and environmental sciences and technologies
LM-74 Geological sciences and technologies
LM-74 R Geological sciences and technologies
LM-75 Sciences and technologies for the environment and territory
LM-75 R Science and technology for the environment and territory
LM-79 Geophysical Sciences
LM-79 R Geophysical Sciences
LM-80 Geographical Sciences
LM-80 R Geographical Sciences
LM Sc. Mat. Materials sciences
LM-53. Materials engineering
28/S (specialists in civil engineering)
33/S (specialists in energy and nuclear engineering)
37/S (specialists in naval engineering)
38/S (specialists in environmental and territorial engineering)









	45/S (specialists in mathematics)				
	50/S (specialists in mathematical-	physical modeling for engineering)			
	54/S (specialists in urban, environ	mental and territorial planning)			
	61/S (specialists in materials scien	61/S (specialists in materials science and engineering)			
	62/S (specialists in chemical science	62/S (specialists in chemical sciences)			
	68/S (specialists in natural science	68/S (specialists in natural sciences)			
	77/S (specialists in agricultural scie	77/S (specialists in agricultural sciences and technologies)			
	80/S (specialists in science and tec	80/S (specialists in science and technology of navigation systems)			
	82/S (specialists in science and tec	chnology for the environment and territory)			
	85/S (specialists in geophysical sci	ences)			
	86/S (specialists in geological scier	nces)			
	- Equivalent qualification obtained	from foreign universities, legally recognised.			
Admission	Assessment qualifications and ora	l exam.			
Procedures	The knowledge of the English lang	guage will be tested during the oral test.			
	- Curriculum Vitae and Studiorum	(CV);			
	- Research project composed of	a minimum of 3 pages and a maximum of 6			
Assessable		of the art, the description of the research			
Qualification		be pursued during the doctorate, the main			
-	-	contributions and/or innovations of the research itself;			
	- Any scientific and technical repo	- Any scientific and technical reports and publications.			
	Maximum overall score 60 points				
	Securities valuation	Maximum score 30 points			
	Research project	Maximum score 20 points			
	Curriculum Vitae and Studiorum	Maximum score 5 points			
	(CV)				
	Scientific and technical reports	Maximum score 5 points			
	and publications				
	Oral exam				
A	Procedure: The oral exam will				
Assessment	focus on the contents of the				
Criteria	project presented.				
	The candidate's skills for carrying				
	out the doctoral project and	Maximum score 30 points			
	motivations for scientific				
	research will also be assessed.				
	The candidate must also				
	demonstrate knowledge of a				
	foreign language.				
		I Idmission to the oral examination: 21 points			
	i winning in score required for the a	Minimum score required for the admission to the oral examination: 21 points			



Positions and	<ul> <li>4 (four) positions of which:</li> <li>n. 1 position with fellowship Ministerial Decree 629/2024, research topic digital and environmental transitions administrative category 4 - PNRR;</li> <li>n. 3 positions with fellowship Ministerial Decree 630/2024, administrative category 5 - Innovative Doctorates:</li> <li>n. 1 co-financed by the company Personal Factory SpA, research topic: Engineering applications of Net-Zero produced microbial-mediated Ca-</li> </ul>					
Fellowships	<ul> <li>carbonates;</li> <li>n. 1 co-financed by the company IPM s.r.l., research topic: Development innovative sustainable membranes;</li> <li>n. 1 co-financed by the company IIC Group Impala International Inte</li></ul>					
	Construction s.r.l., research topic: Mathematical models for the processing of images acquired via laser scanner instrumentation					
	Test	Date	Time	Place		
	Results of Qualification Assessment	25 July, 2024		https://diam.unical.it/didattica/for mazione-post-laurea/dottorato-di- ricerca_siace/		
Agenda	Oral exam	28 July, 2024	9.00	Seminar room (cube 45A ground floor), Department of Environmental Engineering University of Calabria Arcavacata di Rende (CS)		
	The results of the exam will be posted on the website:					
	https://diam.unical.it/didattica/formazione-post-laurea/dottorato-di- ricerca siace/					
Contact details for information	salvatore.critelli@unical.it; tel.: +39 0984.496760; marinella.tedeschi@unical.it; tel.: +39 0984.496650.					
PhD Course website				e-post-laurea/dottorato-di-		



# PhD Course in "Physical, Chemical and Materials Sciences and Technologies"

Coordinator	Prof. Gabriella Cipparrone - Department of Physics - Via Pietro Bucci - Cubo 33/B, 87036 Arcavacata di Rende (CS) Tel.: +39 0984.496115 - e-mail:gabriella.cipparrone@fis.unical.it- SSD: FIS/03		
Duration	3 years		
Main Department	Physics department		
Other Departments involved	Department of Chemistry and Chemical Technologies (CTC) Department of Computer Science, Modelling, Electronics and Systems Engineering (DIMES)		
CUN Areas and Scientific Disciplinary Sectors	CUN Area 02: FIS/01, FIS/02, FIS/03, FIS/05, FIS/06, FIS/07; CUN Area 03: CHIM/01, CHIM/02, CHIM/03; CUN Area 08: ICAR/08.		
Research Topics	The doctoral course is divided into two curricula with the following thematic areas. 1) "Physical sciences and technologies". The activities of this area mainly concern the following research topics: astrophysics and plasmas, geophysics, condensed matter physics and quantum physics, physics of complex systems and continuum mechanics, physics of biological systems, high energy physics, in their experimental, theoretical and computational aspects. 2) "Advanced materials: chemistry and technologies". The activities of this area mainly concern the following research topics: science and technology of advanced, polymeric, composite, multifunctional, hybrid and nanostructured materials and systems (membranes, interfaces, etc.). Meaning the study of materials in terms of structure and properties, design, production processes, use and characterization, with the aim of developing materials and methods for energy conversion and storage, technologies for the protection of cultural heritage, photonics, sensors, health, anti-counterfeiting and security.		
Participation Requirements	<ul> <li>Italian Degree (ante Ministerial Decree 509/1999) or Italian Specialist/Master's Degree (formerly Ministerial Decree 509/1999 and Ministerial Decree 270/2004).</li> <li>Equivalent qualification obtained at legally recognized foreign universities.</li> </ul>		
Admission Procedures	Evaluation of qualifications and oral exam. During the oral test, knowledge of the English language will be tested.		
Assessable Qualification	<ul> <li>Curriculum Vitae et Studiorum (CV).</li> <li>Bachelor's and Master's Degree, with the details of mark, duration and exams.</li> </ul>		









	<ul> <li>Research project.</li> <li>List of published scientific articles (eventual).</li> </ul>						
		Maximum ove	erall score	e 60 points			
	Assessment Qualif	Assessment Qualification					
	Research project	Research project					
	CV and any previou	us research exper	ience		30 points		
Assessement Criteria	Eventual published	articles					
Criteria	<b>Oral exam</b> Procedure: English project and eventu the candidate.				Maximum score 30 points		
	Minimum score rec	quired for the adn	nission to	the oral exam	nination: 21 points.		
Positions and Fellowships	<ul> <li>2 (two) positions of which:</li> <li>n. 1 place with fellowship Ministerial Decree 629/2024, administrative category 4 - PNRR, on the topics of the "Advanced materials: chemistry and technologies" area consistent with the missions M1C1 (Digitalization, innovation and security in the PA), M1C2 (Digitalization, innovation and competitiveness in the production system) M2C2 (energy transition and mobility sustainable), M2C4 (protection of the territory and water resources), M4 and M6 (M6C2 - Innovation, research and digitalisation of the National Health Service);</li> <li>n. 1 place with fellowship Ministerial Decree 630/2024, administrative category 5 - Innovative Doctorates, co-financed by the company Sunland Optics srl, research topic: "Innovative optical elements for projection and lighting engineering".</li> </ul>						
	Test	Date	Time		Place		
Agenda	Outcome Evaluation of securities	July 26, 2024					
	Oral exam	July 30, 2024	9:00 am	Physics Univ	om, Department of versity of Calabria ta di Rende (CS)		
	The results of the exam will be posted on the website: https://fisica.unical.it/contents/news/list						



Contact details for	Dr. Chiara Perri tel.: + 39 0984.494006
information	E-mail: <u>chiara.perri@fis.unical.it</u>
PhD Course website	https://fisica.unical.it/didattica/formazione-post-laurea/dottorato-di- ricerca/ https://www2.unical.it/portale/strutture/dipartimenti_240/fisica/didattica/ dottorato/stfcm/presentazione/



### PhD Course in "Economic and Business Sciences"

	Prof. Fabio Piluso - Department of Business and Legal Sciences (DiScAG) -		
Coordinator	Via Pietro Bucci - 87036 Arcavacata di Rende (CS) - Tel.: +39 0984.492848 - e-mail: <u>fabio.piluso@unical.it</u> - SSD: SECS-P/11		
Duration	3 years		
Main Department	Department of Economics, Statistics and Finance (DESF) "Giovanni Anania"		
Other Departments involved	Department of Business and Legal Sciences (DiScAG)		
CUN Areas and Scientific Disciplinary Sectors	CUN Area 01: MAT/09; CUN Area 13: SECS-P/01, SECS-P/02, SECS-P/03, SECS-P/05, SECS-P/06, SECS- P/07, SECS-P/08, SECS-P/ 11, SECS-S/01, SECS-S/04, SECS-S/06; CUN Area 14: SPS/10		
Research Topics	The Doctorate in Economic and Business Sciences aims to develop advanced skills in both the theoretical and applied fields of economic, business, statistical and financial sciences. These skills can be applied in different fields such as: Universities, study centers and research centers of national and international institutions, research bodies for economic, statistical and financial sciences, public organizations, institutions, private companies and non-profit organizations.		
Participation Requirements	Master's Degrees (ex DM 270/204): LM-16 Finance, LM-31 Engineering Management, LM-40 Mathematics, LM-49 Design and management of tourism systems,LM-56 Economic Sciences, LM-77 Business Economic Sciences, LM-82 Statistical Sciences, LM-83 Actuarial and Financial Statistical Sciences. Specialist degrees (ex DM 509/1999): 19/S (specialists in finance), 34/S (specialists in management engineering), 45/S (specialists in mathematics), 64/S (specialists in economic sciences), 84/S (specialists in economic and business sciences), 91/S (specialists in economic and business sciences), 91/S (specialists in economic, financial and actuarial statistics); Bachelor's Degrees (before Ministerial Decree 509/1999) equivalent to the Master's Degrees mentioned above pursuant to Ministerial Decree 09/07/2009. Qualification obtained from a foreign university equivalent to one of the above.		
Admission	Evaluation of qualifications and oral exam.		
Procedures	During the oral test, knowledge of the English	anguage will be tested.	
Assessable Qualification	<ul> <li>Curriculum Vitae et Studiorum (CV).</li> <li>Research project.</li> <li>Any certificates of knowledge of the English language.</li> </ul>		
	Maximum overall score 60 points		
	Assessment Qualification	Maximum score 30 points	
Assessmen Criteria	Research project	Maximum score 13 points	
	Curriculum Vitae et Studiorum (CV) English language proficiency certificates	Maximum score 15 points Maximum score 2 points	
	Oral exam	Maximum score 2 points	
		Maximum score so points	







	Procedure: Interview on economic-business				
	issues and the research project Minimum score required for the admission to the oral examination: 21 points.				
Positions and Fellowships	<b>1 (one)</b> position with fellowship Ministerial Decree 629/2024 PA, administrative category 4 - PNRR, research topic: "Digital transition and structural changes in the Public Administration".				
Agenda	Test	Date	Time	Place	
	Outcome Evaluation of securities	July 29, 2024			
	Oral exam	July 30, 2024	9:00 am	Seminar room (cube O/C; ground floor), Department of Economics, Statistics and Finance "Giovanni Anania" University of Calabria Arcavacata di Rende (CS). Oral test via MS TEAMS for candidates with an academic qualification obtained abroad.	
	The results of the exam will be posted on the website:				
Contact details for information	https://desf.unical.it/didattica/formazione-post-laurea/dottorato-di-ricerca/ Dr. Claudia Grimaldi - E-mail address: <u>claudia.grimaldi@unical.it</u> Dr. Giovanni Dodero - E-mail address: <u>giovanni.dodero@unical.it</u> .				
PhD Course website	https://desf.unical.it/didattica/formazione-post-laurea/dottorato-di-ricerca/				



# PhD Course in "Technology Applied to Cultural Heritage" in association with the National Research Council

	Curriculum Vitae et Studiorum (CV)	Maximum score10 points	
Criteria	Research project	Maximum score 30 points Maximum score20 points	
Assessment	Securities valuation	rall score 60 points	
Qualification	- Curriculum Vitae et Studiorum (CV)	roll score 60 points	
Assessable	- Research project		
	Framework of Reference for Language	es (CEFR).	
Procedures	level equal to or greater than B1 according to the Common European		
Admission	During the oral examination knowledge of English will be tested considering a		
	Assessment of qualifications, oral exa		
	Equivalent Degree obtained at legally recognized foreign universities.		
Requirements	Decree 270/2004).		
Participation	Specialist/Master's Degree (ex Ministerial Decree 509/1999 and Ministerial		
	Italian University Degree (ante Ministerial Decree 509/1999) or Italian		
	<ul> <li>Long term preservation and Digital Humanities.</li> </ul>		
	<ul> <li>Three-dimensional relief of artials also for form recognition.</li> </ul>	facts, data processing and management	
	<ul> <li>Usage methods based on virtual</li> <li>Three dimensional relief of article</li> </ul>		
	heritage.		
Research Topics	$\circ$ Protection, safeguarding and valirization of archival and documentary		
	<ul> <li>Digital Heritage, Information and Communication Technologies.</li> </ul>		
		pplied to archeology and cultural heritage.	
	<ul> <li>Interdisciplinary research, tools</li> </ul>	and applications for art and architecture.	
	-	nderwater and maritime archaeology.	
		age diagnostics and preservation.	
	CUN Area 11: M-STO/08; CUN Area 14: SPS/11		
	CUN Area 10: L-ANT/09, L-LIN/01; L-LIN/12 L-ANT/08 CUN Area 11: M-STO/08;		
Sectors	CUN Area 09: ING-IND/15, ING-IND/31, ING-INF/05, ING-INF/07; CUN Area 10: L-ANT/09, L-LIN/01; L-LIN/12 L-ANT/08		
Scientific Disciplinary Sectors	CUN Area 08: ICAR/08, ICAR/09, ICAR/19; ICAR/10; ICAR/14; ICAR/01		
CUN Areas and	CUN Area 05: BIO/10; BIO/11 CUN Area 08: ICAB/08, ICAB/09, ICAB/10: ICAB/10: ICAB/14: ICAB/01		
	CUN Area 04: GEO/02, GEO/04, GEO/06, GEO/07, GEO/08, GEO/09;		
	CUN Area 03: CHIM/06; CHIM/07		
	CUN Area 02: FIS/01, FIS/07, FIS/08;		
Affiliated entity	National Research Council (Consiglio I	Nazionale delle Ricerche - CNR)	
-			
Main Department	Department of Cultures, Education and Society - DiCES		
Duration	3 years		
Coordinator	Via Pietro Bucci - Cubo 12B, 87036 Arcavacata di Rende (CS) Tel.: +39 0984.493535 - e-mail: <u>mlarussa@unical.it</u> - SSD: GEO/09		
Coordinator		Biology, Ecology and Earth Sciences -	











	Or	al exam			
	Procedure:				
	Research project	ct discussion and oral	IVI	aximum score 30 points	
	exam regarding	PhD topics.			
	Minimum Score required for admission to the subsequent tests and for passing				
	the oral examination: 21 points				
	3 (three) positions of which:				
		-		e 629/2024 Cultural Heritage,	
	•			hods for the conservation and	
	enhancement of	of cultural historical-a	archaeologi	cal heritage" - administrative	
	category 4 - PN				
Positions and	- n. 2 positions with fellowship Ministerial Decree 630/2024 - administrati category 5 - Innovative Doctorates:				
Fellowships					
	<ul> <li>n. 1 grant co-financed by the company 3D Research srl, research topic:</li> </ul>				
				eritage and landscape";	
	-	<ul> <li>n. 1 grant co-financed by the company START-TEST DI S. SCHIAVONE &amp; C.</li> </ul>			
				n-invasive and micro-invasive	
		s to the study and con			
	Test	Date	Time	Place	
	Outcome	1 25 2024			
	Evaluation of	July 25 - 2024			
	securities				
		July 26, 2024	9:00 am	Classroom Nettuno (cube 17	
Agenda	Oral exam			B, ground floor 0),	
				Department of Cultures,	
				Education and Society University of Calabria	
				-	
	Arcavacata di Rende (CS)           The results of the exam will be posted on the website:				
		ices.unical.it/ricerca/dottorato-di-ricerca/			
Contact details for				<u></u>	
information	labdoc@unical.	<u>it</u>			
PhD Course website	https://dices.unical.it/ricerca/dottorato-di-ricerca/				



#### ANNEX B

DECLARATION IN SUBSTITUTION OF THE NOTATORY DEED (AFFIDAVIT)

(Art. 47 Presidential Decree no. 445/2000)\*

The undersigne	ed	tax code:		place of birth
	date of birt	h	_ Gender M/F residence (city) _	prov street
n	postal code	e-mail address	telephone	aware of the provisions
of the art. 76 o	f the Presidential Decre	ee of 28 December 200	0, n. 445, on the criminal liability	to which he/she be subject in the
event of falsific	ation of documents an	d false declarations, pu	rsuant to and for the purposes of	f the aforementioned Presidential
Decree no. 445/	/2000, and under their	own personal responsik	pility:	
		DE	CLARES	
to be in possessi	on of the following acc	ess title (qualification) in	n accordance with art. 2 of the call	for UniCal PhD public selection:
(indicate precise	ly: exact name of the c	ourse, date of obtaining	g the qualification and grade, Uni	versity, list of exams with grades ij
requested and fo	or candidates not yet in	possession of the entra	nce qualification)	
Degree		achieved on date		
with a vote	at			
list	of	exams	and	grades (if
any)				
Regulation (EU)	2016/679 of the Europ	ean Parliament and of sively within the scope		slative Decree no. 196 of 2003 and the personal data collected will be claration is made.
Place and uale, _				
			The declarant	;

NB The signing of the above-mentioned declarations is not subject to authentication if it is signed in the presence of the employee in charge. If this declaration is sent or presented directly by a person other than the candidate, a photocopy, front and back, of an identity document of the signatory must also be produced. Only identity documents with a photograph and issued by a valid state administration will be considered valid.