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### *The Rector*

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| <b>In accordance with</b> | The Statute of the Mediterranean University of Studies of Reggio Calabria, issued with the Rectoral Decree n. 92 of March 29, 2012, published in G.U. of the Repubblica Italiana of April 13, 2012, no. 87;  |
| <b>In accordance with</b> | The Italian Law of July 3, 1998, no. 210, and in particular Article 4, as amended by Article 19, paragraph 1, of the Law of December 30, 2010, no. 240;  |
| <b>In accordance with</b> | The Italian Law 241/1990 "New provisions on administrative procedures and right to access administrative documents", as amended by Legislative Decree 127/2016, Legislative Decree 222/2016 and Legislative Decree 104/2017;   |
| <b>In accordance with</b> | the "Regulation containing the procedures for accrediting the sites and doctoral courses and criteria for the establishment of PhD courses by accredited institutions" adopted with Ministerial Decree no. 226 of December 14, 2021 and published in the Official Gazette, General Series n. 308 of December 29, 2021 and, in particular, Articles 9 and 17;   |
| <b>In accordance with</b> | Art. 1 of Ministerial Decree no. 247 of February 23, 2022 with which, starting from July 1, 2022, the annual amount of the scholarship for attending PhD courses is restated at € 16.243,00 gross of social security contributions that must be paid by the PhD Student;   |
| <b>In accordance with</b> | The Rectoral Decree no. 454 of December 9, 2022, which adopted the "University Regulations for PhDs";  |
| <b>In accordance with</b> | The Ministerial Decree no. 301 of March 22, 2022, which approved the guidelines for the accreditation of PhD courses, which redefined, in terms of indicators and parameters, the general requirements for the re-accreditation of PhD courses;  |
| <b>In accordance with</b> | The Ministerial Decree no. 118 of March 2, 2023 - PNRR, Mission 4, component 1 - Investment 3.4 and Investment 4.1 with which the Ministry of University (MUR) and Research assigned to the Mediterranean University of Studies of Reggio Calabria € 1.440.000,000 to finance a total of no. 24 scholarships, worth € 60,000 each, as follows: <ul style="list-style-type: none"> <li>• no. 2 scholarship dedicated to Digital and Environmental Transitions [M4C1- Inv. 3.4, a)];</li> <li>• no. 11 scholarships on research topics relating to PNRR [M4C1- Inv. 4.1, b)];</li> <li>• no. 9 scholarships for PhDs on Public Administration [M4C1- Inv. 4.1, c)];</li> <li>• no. 2 scholarships for PhDs on Cultural Heritage [M4C1- Inv. 4.1, d)];</li> </ul> |
| <b>In accordance with</b> | The Ministerial Decree no. 117 of March 2, 2023 - PNRR, Mission 4, component 2 – with which the MUR has assigned to the Mediterranean University of Studies of Reggio Calabria € 1.650.000,00 to co-finance at 50%, for an amount equal to € 30,000 for each scholarship, n. 55 scholarships for innovative doctorates starting in the A.Y. 2023/2024, Cycle XXXIX, for a three-year duration, under the measure in question (Article 2 paragraph 3);  |
| <b>In accordance with</b> | The Ministerial Decree no. 341 of 15.2022 - Public notice for the presentation of intervention proposals for the creation of "Partnerships extended to universities, research centres, companies for the funding of basic research projects" - within the National Plan of Recovery and Resilience, Mission 4 "Education and Research" — Component 2 "From research to business" – Investment 1.3, funded by the European Union –NextGenerationEU;   |
| <b>In accordance with</b> | The Regulations of the Mediterranean University of Studies of Reggio Calabria regarding Students Contribution for academic year 2021/2022 of adopted with Rectoral Decree no. 234 of October 6, 2021;  |
| <b>In accordance with</b> | The EU Regulations of February 12, 2021, n. 2021/241, establishing the plan for recovery and resilience;   |
| <b>In accordance with</b> | The National Plan for Recovery and Resilience (PNRR) positively evaluated with the Decision of the ECOFIN Council of July 13, 2021 and notified to Italy by the General Secretariat of the Council with note LT161 / 21, of July 14, 2021;   |



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| <b>In accordance with</b> | Art. 17 EU Regulation 2020/852 which defines the environmental objectives, including the principle of not causing significant harm (DNSH, "Do no significant harm"), and the related Communication of the EU Commission 2021 / C 58/01;  |
| <b>Considered</b>         | Art. 11 paragraph 4, of the Ministerial Decree 118/2023 and art. 7 paragraph 6, of the Ministerial Decree 117/2023 provide that for the purpose of completing the procedure for assigning scholarships to doctoral students selected in the context of one or more calls, each subject must fill in the format prepared through the MUR online platform (at the address <a href="http://doctorates.miur.it">http:// doctorates .miur.it</a> ), by logging in online with the credentials of the Universities already issued by CINECA to the Doctoral Offices and providing the necessary information regarding each scholarship awarded;  |
| <b>Considered</b>         | Art. 11 paragraph 5, of the Ministerial Decree 118/2023 and art. 7 paragraph 7, of the Ministerial Decree 117/2023 provide that the universities, by October 31, 2023, must make available on the platform, the resolution of the competent academic organ to take note of all the rankings approved in the context of the individual PhD Programs and to quantify the amount overall intended for the financing of the scholarships;  |
| <b>In accordance with</b> | The Ministerial Decree of February 28, 2023 "Definition of the list of particularly poor Countries for the academic year 2023/2024" (GU no. 80 of April 04, 2023);   |
| <b>In accordance with</b> | the minutes of the Council of the Doctoral School of May 18, 2023, concerning the distribution and related co-financing of the doctoral grants awarded to the University with D.M. 118/2023;   |
| <b>In accordance with</b> | the minutes of the Council of the Doctoral School of May 31, 2023, concerning the accession to the national doctorates to be co-financed with the resources of the DD. MM. nn. 117/2023 and 118/2023 and resources from funds of PNRR Projects resulting from the non-assignment of No. 3 scholarships of the XXXVIII cycle for the PhD in Information Engineering (RESTART Spoke 2 S11 Ita NTN, Spoke 4 S2 Super, Spoke 6 S1 Coherent);   |
| <b>In accordance with</b> | the minutes of the Council of the Doctoral School of June 21, 2023, concerning the overall distribution of doctoral scholarships valid on D.M. 117/2023, D.M. 118/2023 and PNRR - RESTART;   |
| <b>In accordance with</b> | The resolutions of the Academic Senate and the Board of Directors, taken at their respective meetings on June 29, 2023, with which the accreditation proposal for the 39th cycle PhD courses was approved for the academic year 2023/2024; the stipulation of agreements was authorised, pursuant to Ministerial Decree 117/2023, for the activation of n. 4 scholarships, with companies in the context of the PhD courses of the headquarters; the issuing of the call for the academic year 2023/2024 was authorized for a total of 30 places, of which no. 24 with scholarship and n. 6 without scholarship in the context of the XXXIX cycle PhD courses; the financial plan relating to the activation of the XXXIX cycle of PhD courses was approved; |
| <b>In accordance with</b> | the note prot. n. 16019 of July 10, 2023 with which the DICEAM Department transmits the agreements for the activation of n. 3 scholarships to be valid on the DM 117 with the following companies: SHARING COMM. AGENCY, OxSDE and CTL ECOLOGY;  |
| <b>In accordance with</b> | the decision of the Council of the DIIES Department taken in Protocol no. 15826 of July 6, 2023;   |
| <b>In accordance with</b> | the Unified Project Codes (CUP) generated for the implementation of DM 118/2023: <ul style="list-style-type: none"> <li>• for no. 1 bag dedicated to Digital and Environmental Transitions [M4C1- Inv. 3.4]</li> <li>- for the PhD in "Civil, Environmental and Industrial Engineering" CUP: C36E23000010006;</li> <li>• for n. 8 scholarships on PNRR-related research topics [M4C1- Inv. 4.1] divided as follows: <ul style="list-style-type: none"> <li>- for n. 1 scholarship for the PhD in "Architecture" CUP: C36E23000020006;</li> </ul> </li> </ul>   |



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- for n. 2 scholarships for the PhD in "Civil, Environmental and Industrial Engineering" CUP: C36E23000030006;
- for n. 4 scholarships for the PhD in "Agricultural, Food and Forestry Sciences" CUP: C36E23000040004;
- for n. 1 scholarship for the PhD in "Information Engineering" CUP: C36E23000050006;
- for n. 6 scholarships for doctorates on Public Administration [M4C1- Inv. 4.1] divided as follows:
  - for n. 4 scholarships for the Doctorate in "Law and Economics" CUP: C36E23000060006;
  - for n. 1 scholarship for the PhD in "Architecture" CUP: C36E23000070006;
  - for n. 1 scholarship for the PhD in "Civil, Environmental and Industrial Engineering" CUP: C36E23000080006;
  - for n. 2 scholarships for Doctorates on Cultural Heritage [M4C1- Inv. 4.1]
  - for the PhD in "Architecture" CUP: C36E23000090006.

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| In accordance with | the Unified Project Codes (CUP) generated for the implementation of DM 117/2023: <ul style="list-style-type: none"> <li>- for n. 3 scholarships the PhD in "Civil, Environmental and Industrial Engineering" CUP: C36E23000100009;</li> <li>- for n. 1 scholarship for the PhD in "Information Engineering" CUP: C36E23000110009;</li> <li>- for n. 1 scholarship in "Agricultural, Food and Forestry Sciences" CUP: C36E23000120009;</li> </ul> |
| In accordance with | the Unique Project Code (CUP) of the Extended Partnership "research and innovation on future telecommunications systems and networks, to make Italy moresmART", theme "14. Telecommunications of the Future" is C37G22000480001;   |
| In accordance with | the letters of commitment of the co-funding companies within D.M. 117/2023: SHARING COMM. AGENCY, OxSDE and CIL ECOLOGY (for the PhD Course in Civil, Environmental and Industrial Engineering), CREA (for the PhD Course in Agricultural, Food and Forestry Sciences) and stmicroelectronics (for the PhD Course in Information Engineering);   |
| Considered         | The MUR Decree no. 226 of December 14, 2021, through which doctoral courses can be activated only after accreditation granted by the Ministry, with the consent of ANVUR;  |
| Considered         | The positive opinion expressed by ANVUR concerning the accreditation of doctoral courses in "Law and Economics", "Civil, Environmental and Industrial Engineering", "Information Engineering" and "Agricultural, Food and Forestry Sciences", the results of which are visible in the doctoral database;   |
| Considered         | That ANVUR opinions are underway for the PhD courses in and "Architecture", following the counter arguments presented by the Coordinators, their activation is subjected to the accreditation provided by the Ministry of University and Research, and consequently, admission to the relative courses and scholarships will take place under condition;   |
| Considered         | The deadlines dictated by the DM. 117/2023 and DM. 118/2023, for the call of public competitions for admission to the XXXIX cycle PhD courses, with administrative headquarters at the Mediterranean University of Studies of Reggio Calabria;   |

## *Decrees*

### **Article 1 – Announcement Public selection**

1. The XXXIX cycle of PhD courses with administrative headquarters at the Mediterranean University of Studies of Reggio Calabria has been established, without prejudice to the acquisition of the positive opinion of ANVUR on the accreditation proposals.
2. The activities of each year of the three-year PhD courses normally begin on November 1 and end on October 31 of the following year.
3. Through this call, public selections for a **total of n. 31 PhD positions (of which 25 PhD positions with scholarship and 6 PhD positions without scholarship grant)** are held at the Mediterranean University of



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Studies of Reggio Calabria, for the purposes of admission for the academic year 2023/2024 to the following PhD Programs for the XXXIX cycle indicated in Annex A (consisting of 5 cards, one for each PhD course) which is an integral part of the this announcement:

- **Architecture** n. 5 places, of which n. 4 positions with scholarship and n. 1 position without scholarship:
  - n. 1 scholarship financed on the DM. 118/2023 on M4.C1 - Investment 4.1 PNRR - CUP: C36E23000020006;
  - n. 1 scholarship financed on the DM. 118/2023 on M4.C1 - Investment 4.1 Public Administration - CUP: C36E23000070006;
  - n. 2 scholarships financed on the DM. 118/2023 on M4.C1 - Investment 4.1 Cultural Heritage - CUP: C36E23000090006;
- **Law and Economics** n. 5 places, of which n. 4 positions with scholarship and n. 1 position without scholarship:
  - n. 4 scholarships financed on the DM. 118/2023 all on M4.C1 - Investment 4.1 Public Administration CUP: C36E23000060006;
- **Civil, Environmental and Industrial Engineering** n. 9 places, of which n. 7 positions with scholarship and n. 2 positions without scholarship:
  - n. 1 scholarship financed on the DM. 118/2023 on M4.C1 - Investment 4.1 Digital and Environmental Transitions - CUP: C36E23000010006;
  - n. 2 scholarships financed on the DM. 118/2023 on M4.C1 - Investment 4.1 PNRR - CUP: C36E23000030006;
  - n. 1 scholarship financed on the DM. 118/2023 on M4.C1 - Investment 4.1 Public Administration - CUP: C36E23000080006;
  - n. 3 scholarships financed on the DM. 117/2023 on M4.C2 - Investment 3.3 and co-financed with the companies SHARING COMM. AGENCY, OxsDE e CTL ECOLOGY - CUP: C36E23000100009;
- **Information Engineering** n. 5 places, of which n. 5 positions with scholarship and n. 1 position without scholarship:
  - n. 1 scholarship financed on the DM. 118/2023 on M4.C1 - Investment 4.1 PNRR – CUP: C36E23000050006;
  - n. 1 scholarship financed on the DM. 117/2023 on M4.C2 - Investment 3.3 and co-financed with the companies *STMicroelectronics* - CUP: C36E23000110009;
  - n. 3 scholarships to Partenariato Esteso “*RESearch and innovation on future Telecommunications systems and networks, to make Italy more smART*”, tematica “14. Telecomunicazioni del futuro” - CUP: C37G22000480001, divided as follows:
    - n. 2 Scholarships financed on - Spoke 2 – - Integration of Networks and Services – Progetto strutturale S11 “Integrated Terrestrial and non-Terrestrial Networks”
    - n. 1 Scholarship financed on Spoke 4 – Programmable Networks for Future Services and Media- Progetto Strutturale S2 “Programmable networks”
- **Agricultural, Food and Forestry Sciences** n. 6 places, of which n. 5 positions with scholarship and n. 1 position without scholarship:
  - n. 4 scholarships financed on the DM. 118/2023 on M4.C1 - Investment 4.1 PNRR - CUP: C36E23000040004;





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- n. 1 scholarship financed on the DM. 117/2023 on M4.C2 - Investment 3.3 and co-financed with the CREA - CUP: C36E23000120009;
- 4. Funds from external entities are awarded subject to the successful conclusion of the agreement between the University and the external entity concerned.
- 5. The number of places indicated in this article may be increased according to the procedures provided for by the current University regulations, with subsequent measures, following funding that could be available, in agreement with other Universities, public entities or qualified private production structures.
- 6. Pursuant to the D.M. 226/2021, the activation of the doctoral courses listed above is subject to the accreditation provided by the Ministry of University and Research. Therefore, the assignment of the places available as well as the awarding of scholarships are subject to confirmation of accreditation by ANVUR and are subject to ministerial approval. It should be noted that in the event that the MUR does not pay the funding for the coverage of the scholarships referred to in DD.MM. n. 117/2023 and n. 118/2023 the same will not be disbursed, resulting in the forfeiture of the positions assigned to the winning candidates. In this case, no claim can be made by the candidates against the University.
- 7. All the information specific to the PhD courses is contained in the information sheets attached to this call for applications as an integral and substantial part (Annex A).
- 8. The activities of the three-year PhD courses referred to in this call for applications begin on November 1, 2023 and end on October 31, 2026.
- 9. This call is equivalent to notification to all intents and purposes. Any changes, updates or additions to its content will be made available, exclusively, with their publication on the website at the following link: <http://www.unirc.it/ateneo/albo.php> and [https://www.unirc.it/ricerca/bandi\\_dottorati\\_ricerca.php](https://www.unirc.it/ricerca/bandi_dottorati_ricerca.php).
- 10. The submission of the application form constitutes acceptance of the rules contained in this announcement by the candidate. Failure to comply with these rules will result in the exclusion from the competition.
- 11. This notice is written in Italian and translated into English, in any case the text in Italian will be warranted.

## **Article 2 - General requirements requested for admission**

1. To apply for one of the places referred to in Annex A, for taking part in the competition for the admission to the PhD program, regardless of age and nationality may apply, those who are in possession on the date of expiry of the notice, of a degree indicated in the respective tables taken under the laws previously in force to the entry of the DM 509/1999, of a Degree/Master specified for each course in Annex A or an equivalent qualification obtained in foreign universities.
2. Those who expect the qualification required for admission to the PhD program within October 31, 2023 also take part in the entrance examinations. In this case, the admission will be granted with reservation and the candidate will be required to submit the self-certification of graduation in good time, under pain of the exclusion from the competition.
3. Those who are in possession of a foreign qualification that has not already been declared equivalent to an Italian degree, have to enclose all the documents translated and legalized by the competent Italian offices in the application form for taking part in the competition and this in accordance with the set of rules in force relating to the admission of foreign students to courses in Italian universities, such documents will be useful to the Evaluation Commission for evaluating the admission requirements and the admissibility of the foreign qualification in compliance with the current legislation in Italy and in the Country where the degree was taken. The treaties and/or international agreements concerning the recognition of qualifications for further studies will be also taken into account.
4. Those who have already been enrolled with the benefit of a scholarship can not take part in the entrance examinations in a course for PhD program. Students already enrolled in a course without a scholarship for PhD programs can access after passing the entrance examination for admission to a different course, to do so, they have to give up their previous course and start from the first year of the new one. Those who are already in possession of the title of PhD, may be admitted to attend, a new course for PhD programs after passing the entrance examination for admission, but without a scholarship.



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5. All applicants are granted to selection subject to verification of self-certified statements pursuant to Presidential Decree no. 445/2000 and subsequent amendments and additions. In the case of false declarations, subject to any criminal liability arising therefrom, the University, by a clearly justified decision of the Rector, may order the exclusion at any time, even after the completion of the examination test.

### Article 3 - Application for admission

1. The application form for the admission must be completed **ONLY ON LINE** from the day following the publication of the notice on the website of the University according to the operational indications contained in Annex B to this notice. It shall be submitted by **12.00 (Italian time) on August 21, 2023**.
2. Applications for participation in the competition received by means other than those indicated in paragraph 1 shall not be considered.
3. Non-EU citizens must attach to the application all qualifications translated into one of the languages of the European Community to participate in the competition and after passing the admission tests they must provide for the delivery of the qualifications translated and legalized by the competent Italian representative offices according to the regulations in force on the subject for the admission of foreign students to the degree courses of Italian universities.
4. Candidates with disabilities, in accordance with the Law of February 5, 1992 n. 104, must explicitly request, in relation to their handicap, of the necessary aid, as well as of any additional time for the exams of the competition. In this respect, all personal information will be kept confidentially in accordance with Legislative Decree 196/03.
5. Applicants who intend to participate in more than one competition for admission must submit as many requests, together with the required documentation and payment, as many are the courses selected. It is forbidden to participate in more than one curriculum within the same PhD.

### Article 4 - Admission tests

1. Admission to the PhD courses is based on a public selection and generally consists in two tests, unless otherwise indicated in Annex A, one written and one oral, intended to ascertain the preparation, skills and the aptitude of the candidate for scientific research in the fields related to the Courses.
2. The publication of the schedule of the admission tests, as shown in Annex A, constitutes notice to interested parties. In the event of any changes to the examination procedures and the exams schedule the candidates will be notified by publishing the relevant notice on the University website at the following link: [https://www.unirc.it/ricerca/bandi\\_dottorati\\_ricerca.php](https://www.unirc.it/ricerca/bandi_dottorati_ricerca.php).
3. Other forms of notice will not be activated by this University.
4. To take the exams, candidates must show a valid identification document. Candidates who have applied to participate in more competitions for admission, in case of concurrency, even one of the competition tests, are required to opt for one of the courses. **The failure to attend to the admission tests will be considered as a waiver of the competition.**
5. The commissions for the examinations for admission to courses of PhD will be appointed by the Rector at the expiry of this notice, in accordance with the procedures laid down in the rules of PhD courses of the Mediterranean University of Studies of Reggio Calabria.
6. In the presence of a written test the Commission in a preliminary session defines the traces of the written test having as its subject topics related to the training and scientific fields of each PhD Program and of the curricula in which it may be articulated, with the aim of verifying the aptitude of the research candidate in the specific field. The list of candidates admitted to the oral test signed by the President and the Secretary of the Commission is published at the following link: [https://www.unirc.it/ricerca/bandi\\_dottorati\\_ricerca.php](https://www.unirc.it/ricerca/bandi_dottorati_ricerca.php).
7. In the presence of evaluation of qualifications, project, etc. the Commission, in a preliminary session, establishes the assessment criteria and procedures to be formalized in the relative minutes in order to assign the relative scores. The results of the evaluation of the qualifications, is published at the following link [https://www.unirc.it/ricerca/bandi\\_dottorati\\_ricerca.php](https://www.unirc.it/ricerca/bandi_dottorati_ricerca.php).



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8. The oral examination consists on a discussion on the topics of each PhD course and the curricula in which it is articulated and possibly also includes the evaluation of the knowledge of at least one foreign language, as shown in Annex A.
9. As regards the ascertained abilities, the Commission gives to each candidate up to a maximum of 60 points for written test or for the evaluated qualifications. The candidates who have achieved a score in the first test or in the qualifications evaluation of not less than 42/60 are admitted to the oral test. The oral test, whose performance is public, is passed only if the candidate gets a score of not less than 42/60.
10. At the end of each test, the Commission shall draw up a list of the candidates, with the indication of the votes obtained by each of them in the single tests. If candidates to be evaluated should be numerous, the Commission may conclude their work the next day upon notice to all those concerned in the examination.
11. At the end of the examination, the Commission will compile a ranking list on the basis of the marks obtained by the candidates in each test taking bearing in mind in the event of equal scores that the younger candidate will be preferred. The pass list signed by the President and Secretary of the Commission, publication on the University website at the following links: [https://www.unirc.it/ricerca/bandi\\_dottorati\\_ricerca.php](https://www.unirc.it/ricerca/bandi_dottorati_ricerca.php).
12. In the case of positions reserved to foreign citizens, the Commission will draw up a separate list.

#### Article 5 - Admission to the Course

1. The Rector, by decree, checks the validity of the examination deeds and approves the merit list. Winners are declared the candidates on each list under condition of the requirements required for the admission to examinations and to the PhD course.
2. Candidates are admitted to the PhD course in order of ranking and subject to the availability of places for each doctorate. In the case of renouncers, before the start of the course, these will be replaced by an equal number of candidates according to the order of the ranking list. In the case of placement in more than one classification, the candidate will have to opt a single PhD program with a written notice.
3. The candidates admitted to the course lose their right if they don't express their written acceptance, to be expressed **within 7 days** from the date of publication of the results of the competition at the following link: [https://www.unirc.it/ricerca/bandi\\_dottorati\\_ricerca.php](https://www.unirc.it/ricerca/bandi_dottorati_ricerca.php), exclusively by PEC to the following address [amministrazione@pec.unirc.it](mailto:amministrazione@pec.unirc.it) for Italian successful candidates, and to the following address [scuoladottorato@unirc.it](mailto:scuoladottorato@unirc.it) for foreign successful candidates. In the event of non-compliance with the term referred to in this paragraph, they are considered to have withdrawn.

#### Article 6 - Course enrollment

1. The registrations of the winners must be validly completed with a deadline by **October 31, 2023**. The operating methods and procedures for enrollment in the PhD course will be disclosed with a specific notice at the address [https://www.unirc.it/ricerca/bandi\\_dottorati\\_ricerca.php](https://www.unirc.it/ricerca/bandi_dottorati_ricerca.php) together with the publication of the Decrees approving the deeds.
2. Failure to enroll within the deadline referred to in paragraph 1 will result in forfeiture from the ranking and determine the scrolling of the same in favor of the first suitable candidate, according to the order established by the ranking.

#### Article 7 - Scholarships

1. The scholarships are awarded to the candidates placed on the list according to the order defined by the Commission. At the end of the examination procedures, among applicants of equal merit, preference will be given to the younger candidate.
2. The scholarships cannot be combined with other research contract and other scholarships awarded for any purpose, except with those awarded by national or foreign institutions to integrate, where appropriate, with stays abroad, training or research activities of graduate students.
3. The recipients of scholarship are not allowed to have any other income from any other source that can lead to the loss of unemployment or inactivity, as defined in art. 4 paragraph a) of Legislative Decree n. 181 of



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- 21.04.2000 as amended by Legislative Decree no. 297 of 19.12.2002, relating to the definition of the threshold of annual income which has to be maintained throughout the duration of the scholarship, under penalty of forfeiture and refund of the installments received.
4. PhD fellowships are incompatible, under penalty of forfeiture of the enjoyment of the same and with the obligation to return the payments received, with:
    - a) employees, including temporary ones, except for the possibility that the employee is placed by the employer on leave without pay;
    - b) industry and commerce activities;
    - c) contracts with the Mediterranean University of Studies of Reggio Calabria for whatever reason except the ones related to tutorial activities;
    - d) any other activity that requires the opening of a VAT.
  5. The scholarships funded by other Universities, public or private, can be bound to the performance of specific research programs, if specified in the agreement, and the failure to comply with the provisions in the agreement results in the loss of the benefit of it and the consequent return of all the installments of the scholarship received.
  6. The disbursement of the scholarship is linked to the periods of activity and attendance of research studies actually rendered.
  7. The scholarships have a total duration of at least three years and are renewed annually, provided that the PhD student has completed the program of activities planned for the previous year and verified according to the procedures established by the Academic PhD Board, without prejudice to the obligation to disburse the scholarship following the passing of the verification. If the PhD student is not positively assessed for the purpose of renewing the scholarship, or renouncing it, the unused amount remains available to the University for the same purposes.
  8. The annual amount of the scholarship for attending PhD courses is restated, in effect by Ministerial Decree no. 247 of 23 February 2022, in € 16,243.00 gross of social security charges to be paid by the recipient. This amount is increased to the maximum extent in place by 50% for a total period not exceeding 12 months, if provided for in the admission notice and if the PhD student is authorized by the Academic Board to carry out research activities abroad.
  9. Each PhD student is assured, in addition to the scholarship and within the financial resources existing in the budget, a budget for the research activity in Italy and abroad, adequate for the type of PhD program and in any case of an amount not less than 10% of the amount of the scholarship itself.
  10. The one who has already received a scholarship for a PhD course, even for a single year or part of it, is not eligible for a second time.

#### **Article 8 – Characteristics of co-financed scholarships under the DD.MM. 117/2023 – 118/2023 and RESTART**

The interventions object of the financing referred to in Ministerial Decrees 117/2023, 118/2023 and RESTART, must be:

- a. consistent with the objectives and purposes of Regulation (EU) 2021/241, with the general strategy and the detail sheet of the Component of the PNRR;
- b. aimed at achieving the results measured in reference to milestones and targets that may be assigned to the investment within the terms established by the Plan;
- c. compliant with the “do not cause significant damage” (DNSH) principle pursuant to art. 17 of Regulation (EU) 2020/852 in coherence with the technical guidelines prepared by the European Commission (Communication of the European Commission 2021 / C58 / 01);
- d. suitable for addressing and bridging gender inequalities;
- e. in support of the participation of women and young people, also in accordance with the provisions of the decree-law 31 May 2021, n. 77 (so-called Simplification Decree), amended by the conversion law no. 108, 29 July 2021, relating to the management of the National Recovery and Resilience Plan (PNRR).





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### **Article 9 – Obligations relating to PhD programs co-financed under the DD.MM. 117/2023 – 118/2023 and RESTART**

1. In addition to the obligations envisaged for doctoral students contained in the Regulations on Research Doctorates of the Mediterranean University of Studies of Reggio Calabria, adopted with D.R. 454 of December 9, 2022 the winners of the scholarships associated with the research projects related to DD.MM. 117/2023 – 118/2023 and RESTART undertake to:
  - produce a report every six months indicating the time commitment (divided into months in the company, at headquarters and abroad, if required) and a summary of the main activities carried out. The reporting will take place through the appropriate online platform and using the forms therein. It will be the responsibility of the Coordinator of the PhD program, through the same platform, to verify and validate what is indicated by the PhD student;
  - ensure compliance with the obligations regarding communication and information provided for by art. 34 of Regulation (EU) 2021/241, indicating in all the documentation that the Program is funded under the PNRR, with explicit reference to funding from the European Union and the NextGenerationEU initiative, reporting in the documentation the emblem of the European Union and provide adequate dissemination and promotion of the Program, including online, both web and social, in line with the provisions of the PNRR Communication Strategy;
  - comply with the principle of not causing significant damage to environmental objectives, pursuant to Article 17 of Regulation (EU) 2020/852.
2. Furthermore, they are obliged, under penalty of revocation of the scholarship, to:
  - carry out the PhD program in a manner consistent with the project admitted to the funding, unless previously requested and subsequently granted the necessary authorization by the MUR;
  - carry out, by the end of the PhD program, the compulsory period of study and research abroad (minimum 6 months and maximum 18 months);
  - carry out, by the end of the PhD program, the compulsory period of study and research in the company (minimum 6 months and maximum 12 months), as part of the grants financed under the Ministerial Decree 118/2023, with reference to programs dedicated to Digital and Environmental Transitions, PNRR, Public Administration and Cultural Heritage;
  - carry out, by the end of the PhD program, the compulsory period of study and research in the company (minimum 6 months and maximum 12 months), as part of the grants financed under the Ministerial Decree 117/2023.
3. At the end of the competition procedures, the candidates / recipients of the scholarships referred to in this article will have to enroll in the PhD courses in accordance with the procedures and timing indicated in art. 6 letter a of this announcement. Subsequently, the MUR will proceed with the verification of eligibility for support from the PNRR of the projects and the ANVUR will verify the consistency with the requirements of Ministerial Decree 118/2023 and Ministerial Decree 117/2023. Once these checks have been completed, the MUR will communicate the definitive assignment of the loan. The actual activation of the positions indicated above is therefore to be considered subject to the positive verification of consistency and eligibility for the purpose of assigning the ministerial funding.

### **Article 10 – Obligations**

1. The admission to the PhD course implies an exclusive and full-time commitment. The PhD student is a second level graduate enrolled in a third level training course. The qualification of doctoral student is obtained by enrolling in a PhD course, it runs from the start date of the course and lasts until the degree is obtained or until the PhD is excluded from the course or until its renunciation of attendance.



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2. All PhD students, with or without a scholarship, are obliged to attend all the teaching and training activities envisaged by the PhD program for its entire duration in the manner and within the times established by the Academic PhD Board gaining all credits provided for in the training plan prepared by the Board. Those enrolled for PhD programs cannot be simultaneously enrolled in another university (Degree of level I and II, Post-Graduate, another PhD course, other PhD courses, Master's I and level II), in Italy or abroad.
3. At the end of each year of the Course, PhD students are required to submit a detailed report on the training and research activities carried out, on the basis of which the Academic PhD Board will recognize the actual acquisition of credits envisaged by the training plan and will express an evaluation of merit, arranging for admission to the following year.
4. At the end of the third year of the Course, PhD students are required to submit a detailed report on the training and research activities carried out over the three-year period and the draft of the thesis, on the basis of which the Academic Board recognizes the actual acquisition of the expected credits. from the training plan and expresses an evaluation of merit, arranging the submission of the thesis to the Evaluators.
5. The insufficient number of credits acquired and / or the negative evaluation leads to the forfeiture of the PhD program with loss of any scholarship and repayment of the installments received in the current year.
6. All PhD students receiving a scholarship for each year of attendance are required to pay the relative contributions as specified below:
  - by November 30 of each year of Course: € 281,29 (first instalment of € 265,29 + virtual stamp duty of € 16,00) + regional tax for university education referred to in art. 6, paragraph a) point 3;
  - by **June 30** of each year of Course: second instalment fee that will be determined based on the ISEE (Equivalent Economic Situation Indicator) or your own Tax Code, as stated on art. 4 paragraph 1 Tab. B of the University Regulations for Student Contribution. PhD students who, during the online enrollment or registration phase, do not enter the identification details of the ISEE certificate issued by INPS and do not activate the checkbox that authorizes the University to collect the related data directly from the INPS database, will be automatically placed in the highest range.
7. PhD students without scholarship as established by the art.1 paragraph 262 of the Law n. 232 of the 11.12.2016 are exempted from paying taxes or contributions to the Mediterranean University of Studies of Reggio Calabria, with the exception of the payment of the virtual stamp duty of € 16,00 and the regional tax for university education referred to in art. 6, paragraph b) point 3 that has to be made by November 30 of each year.

### Article 11 – Doctorate Degree - Qualification

1. The title of Doctor of Research, abbreviated with the words: “Dott. Ric.” or “Ph.D.”, is released as a result of the positive evaluation of a research thesis that contributes to the advancement of knowledge or methodologies in the field of investigation chosen.
2. To be admitted to the final examination for the award of degree of Doctor of Research, the PhD student must have earned the credits provided by the training plan prepared by the Academic Board of the PhD.
3. The PhD thesis, accompanied by a summary in Italian and English, is written in Italian or English or in another language by authority received of the Academic Board. The thesis, with a report on the activities of the student in the course of the PhD and eventual publications, shall be assessed by at least two highly qualified teachers, including those belonging to foreign institutions in the cases under art. 16 of the Rules of University's doctoral research, external to the parties that contributed to the release of the title of PhD, hereinafter referred to as Evaluators.
4. The public discussion takes place before a Commission whose composition is defined by Regulations, within the six months immediately following the expiry date of the PhD course. At the end of the discussion, the thesis, with a reasoned written collegial judgment, is approved or rejected. The Commission, by unanimous vote, has the right to assign praises in the presence of results of particular scientific importance. The title of Doctor of Research is conferred by the Rector and upon a successful completion of the final exam.
5. The original parchment will be issued by the Mediterranean University of Studies of Reggio Calabria in a single copy, upon request of the interested party.



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### **Article 12 - Treatment of personal data**

1. The Mediterranean University of Studies of Reggio Calabria in the accomplishment of Decree n° 196/2003 “Code concerning the protection of personal data”, agrees to use the personal data supplied by the candidate to carry out the examination procedures and for institutional purposes. Participation in the competition implies the principles set out in the Law concerning tacit consent to the publication of the personal data of the candidates on the website of the Mediterranean University of Studies of Reggio Calabria.

### **Article 13 - Advertising**

1. For matters not covered in this announcement, please refer to the laws and regulations governing Research and PhD.
2. This announcement will be published on the website of the Mediterranean University of Studies of Reggio Calabria (<http://www.unirc.it/ateneo/albo.php>) in the area dedicated to the Doctoral School ([https://www.unirc.it/ricerca/bandi\\_dottorati\\_ricerca.php](https://www.unirc.it/ricerca/bandi_dottorati_ricerca.php)), on the corporate website of the European Union EURAXESS (<http://ec.europa.eu/euraxess>) and on the website of the Ministry (<https://ateneo.cineca.it/bandi/>).

**Il Rettore  
Prof. Giuseppe Zimbalatti**

La Responsabile Settore Dottorato  
Angela Crucitti

La Responsabile di Area  
Dott.ssa Rosa Paola Arcà

Il Direttore Generale  
Dott. Antonio Romeo



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## Annex A

### FORM N. 1

|                    |   |
|--------------------|---|
| Name of PhD course | Architettura  |
| Cycle              | XXXIX   |
| Curricula          | 1. Architecture: Theory and Design<br>2. Urban Regeneration   |
| Duration           | 3 years   |
| Coordinator        | Prof.ssa Concetta Fallanca  |
| Department         | Patrimonio, Architettura, Urbanistica (PAU)   |
| PHD Positions      | n. 5 PhD positions: 4 with scholarship; 1 without scholarship   |
| Scholarships       | <ul style="list-style-type: none"> <li>n. 1 scholarship financed on the DM. 118/2023 on M4.C1 - Investment 4.1 PNRR - CUP: C36E23000020006;</li> <li>n. 1 scholarship financed on the DM. 118/2023 on M4.C1 - Investment 4.1 Public Administration - CUP: C36E23000070006;</li> <li>n. 2 scholarships financed on the DM. 118/2023 on M4.C1 - Investment 4.1 Cultural Heritage - CUP: C36E23000090006;</li> </ul>   |
| Admission          | <p>Admission will be based on:</p> <p>a) Evaluation of research project and qualifications (max 60 points)</p> <p>b) Oral exam and assessment of knowledge of the English language (max 60 points)</p> <p>a) Evaluation of research project and qualifications: it is aimed at identifying the preparation and motivation for participation in the doctoral course and will be deduced from the following documents and qualifications:</p> <ul style="list-style-type: none"> <li>Curriculum Vitae highlighting the educational path, degree grade and any relevant qualifications held (max 20 points);</li> <li>Research project in Italian or in English focused on one or more topics covered by the PhD and consistent with one or more objectives of the National Recovery and Resilience Plan (PNRR). The project must not exceed 2,000 words, including an abstract of no more than 150 words and must be divided into the following parts:<br/>1. Objectives and purposes of the research; 2. State of the art of the scientific debate relating to the proposed field of study and any interdisciplinary aspects; 3. Research methodology; 4. Expected results (max 40 points).</li> </ul> <p>The oral exam is accessed with a score of at least 42/60 in the evaluation of the research project and curriculum.</p> <p>b) Oral exam and assessment of knowledge of the English language</p> <ul style="list-style-type: none"> <li>Discussion of the project and assessment of the candidate's aptitude for scientific research.</li> <li>Assessment of knowledge of the English language. Foreign candidates must demonstrate that they have at least an elementary knowledge of the Italian language.</li> </ul> <p>The final ranking is accessed with a score of at least 42/60.</p> |
| Admission schedule | <p><b>Evaluation of the research project and qualifications: 19 September 2023.</b></p> <p>The ranking of those admitted to the oral exam will be published by 22 September 2023.</p> <p><b>Oral and language exam on 26 September 2023 at 10:00</b>, at the PAU Department of the Mediterranean University of Reggio Calabria located in Via dell'Università, 25 ex Salita Melissari - 89124 Reggio Calabria.</p> <p>Candidates residing abroad and those residing more than 700 km from the selection site can request to have the interview via videoconference. This choice must be clearly indicated in the application form specifying an e-mail address to be contacted. This address will be used to communicate the methods and platform chosen by the commission for carrying out the interview.</p> <p>Any changes to the exam schedule will be published on the website at the following link: <a href="https://www.unirc.it/ricerca/bandi_dottorati_ricerca.php">https://www.unirc.it/ricerca/bandi_dottorati_ricerca.php</a></p> <p><b>No other forms of notification will be activated by this University.</b></p>   |





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| <b>Language test</b>                      | English  |
| <b>Educational Qualification required</b> | For Italian graduates: Laurea magistrale, Laurea specialistica, or Laurea (vecchio ordinamento). For foreign graduates: Master degree level.   |
| <b>Period of training abroad</b>          | Mandatory: minimum 6 months – maximum 12 months  |
| <b>Period in enterprise</b>               | Mandatory minimum 6 months - maximum 12 months for scholarships based on DM. 118/2023 - M4.C1 – Inv. 4.1, Public Administration and on DM. 118/2023 - M4.C1 – Inv. 4.1, Cultural Heritage  |
| <b>Educational description</b>            | <p>The PhD course in “Architecture” is characterized by a strong international dimension that aims to increase the international projection of students.</p> <p>The project aims to provide third-level post-graduate training capable of conferring a title that certifies that the PhD course is capable of carrying out personal, original and high-level scientific research. The PhD Program aims to offer highly structured and personalized training to facilitate the scientific and professional growth of PhDs in both the academic and professional sectors. Training in advanced research is consolidated through theoretical and experimental methods aimed at addressing cutting-edge research topics for the advancement of individual and collective skills. The scientific project prepares PhD students to face contemporary global challenges by providing prestigious international exchange opportunities. To implement this project, the PhD course in “Architecture” integrates basic and applied research methodology with interdisciplinary and intersectoral training, combining the fields of architecture, urban planning, restoration, technology, structures, estimo, but also of history, representation and aesthetics, without ever forgetting that the nature of Architecture invests both the human sciences and the hard sciences.</p> <p>The research activities are supported by a strong national and international inter- university network, with the aim of increasing the participation and learning capacity of doctoral students and teachers in a multiple scenario made up of innovation, internationalization and industrialization. As part of the Piano Nazionale di Ripresa e Resilienza (PNRR), Mission 4, component 2 (“Dalla Ricerca all'Impresa”) with reference to Investment 3.3 “Introduction of innovative doctorates that meet the innovation needs of companies and promote hiring researchers from companies”, the PhD course in Architecture intends to support the promotion and strengthening of higher education and post- graduate specialisation at doctoral level. In particular, we want to focus on the measure that aims to enhance high-profile skills, especially in the areas of Key Enabling Technologies, through the establishment of dedicated programs, with the contribution and involvement of businesses. The title of PhD is conferred after having carried out three-year training and research activities and having successfully defended the curricular Doctoral Thesis. The ownership of the Research Doctorate clarifies, together with the specific skills cultural backgrounds of the disciplinary areas involved, the scope of operation of the same.</p> |
| <b>Training Objectives</b>                | <p>The PhD course in “Architecture” responds to the growing demand for highly qualified researchers capable of competing at an international level in the formation of knowledge, in order to grasp the productivity of the interrelationships between basic skills and experimentation linked to the needs of potential and future users. The strong interdisciplinary characterization of Architecture defines complex research areas in which the autonomous, critical and highly specialized research capacity requires dialogue between skills and knowledge. Over the three years, the course is divided into areas of collective training and individual learning and research processes for each PhD student.</p>  |



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|                                      | <p>The objectives are included in three areas:</p> <ol style="list-style-type: none"> <li>1. Disciplinary contents of the PhD course: <ul style="list-style-type: none"> <li>- Updated and in-depth knowledge of the general issues that characterize the PhD course in Architecture;</li> <li>- The in-depth study of the different themes of the two curricula in which the PhD course is subdivided (the area of the relationship between theories and project, and the area of urban regeneration);</li> <li>- The in-depth study of issues regard the international debate in the architectural and urban fields;</li> <li>- Specific actions regard the topics with possible repercussions on the territory.</li> </ul> </li> <li>2. Actions relating higher education: <ul style="list-style-type: none"> <li>- Collaborations with internationally recognized scholars for conferences, lectures and seminars on general or trend issue;</li> <li>- Stages in research and training institutions, government and land management structures, design and production companies in the field of construction and infrastructure, cultural and creative businesses related to cultural heritage;</li> </ul> </li> <li>3. Methodological training on doctoral research: <ul style="list-style-type: none"> <li>- to acquire writing skills in an academic scientific context;</li> <li>- to acquire bibliographic sources and apparatuses skills;</li> <li>- to acquire methodological control useful to organize the issues in question;</li> <li>- the capacity to communicate the scientific results achieved through appropriate forms and to organize reports and lectures;</li> <li>- the capacity, in academic context, to deepen communication regarding the issues of design disciplines;</li> <li>- the capacity to carry out analytical-cognitive studies in field of investigations;</li> <li>- the capacity to draft research hypotheses for a PhD course in Architecture.</li> </ul> </li> </ol> <p>In order to achieve these objectives and to provide each doctoral student with the opportunity to carry out their activities in the best possible way, the PhD course in Architecture is organized on the basis of the educational credit system (CFU). Successful attendance at the PhD programme corresponds to 180 total CFU which are usually divided into 60 CFU per year.</p> <p>The CFU, listed more precisely in the section relating to each year of the course, can be traced back to the following categories:</p> <ul style="list-style-type: none"> <li>- training (lectures, conferences, seminars and workshops);</li> <li>- the drafting of the final papers required by the seminars or workshops; - meetings and discussions with the Board of Teachers;</li> <li>- study trips, stages and conferences;</li> <li>- the publication of research resultates in volumes or scientific journals; - internship at Italian and foreign research structures.</li> </ul> |
| <b>Coherence with the NRRP goals</b> | <p>In line with the NRP goals and actions, there are periods of study and research in the company and periods of study and research at foreign institutions, ensuring that doctoral students can take advantage of qualified structures, in accordance with the law, for study and research activities, including scientific laboratories, libraries, databases.</p> <p>Thanks to the “Scuola di Dottorato” the PhD in Architecture provides for the implementation of didactic activities for linguistic and IT improvement, for the management of research and the knowledge of European and international research</p>  |



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|  | <p>systems, for the enhancement of research results and of intellectual property. Finally, we want to promote the enhancement of research results and guarantee the protection of intellectual property, ensuring open access to research results and related data through the publications of original scientific research results, metadata, sources, graphic digital representations, images and scientific multimedia materials, in the shortest time and with the least possible limitations, according to the principles of “Open science” and “FAIR Data”.</p>  |
| <p><b>Expected employment and professional opportunities</b></p> | <p>The international PhD course in Architecture intends to train researchers with a high scientific profile, theoretical-cultural and experimental-innovative preparation, aimed at certifying:</p> <p>The international PhD course in Architecture intends to train researchers with a high scientific profile, theoretical-cultural and experimental-innovative preparation, aimed at certifying:</p> <ul style="list-style-type: none"> <li>- skills that can be spent in Academic institutions and in Italian and foreign research institutes;</li> <li>- strategic skills, regard to the needs of local territory, also recognized outside the Academy System.</li> </ul> <p>The strong international significance of the two curricula: “Architecture, Theory and Design” and “Urban Regeneration”, allows PhD students to acquire wide relational skills in a global context. The activities are oriented to the multiscale design of architecture, landscape and the city, intersectoral and interdisciplinary, theoretical analysis, the study of materials, soft-computing and experimentation of the Resilience Building according to the approaches of the Evolutionary Economy and Transition Management strategies.</p> <p>In the public sphere, researchers can find the right placement in institutions and agencies for the government of cities and the territory for building and urban design, territorial and urban planning, energy, environmental sustainability, protection and safety of territories, static security and the enhancement of Cultural Heritage. In the private sector they can find a place in the technical-professional and entrepreneurial world in an international dimension for planning and governance activities.</p> |
| <p><b>ARCHITECTURE: THEORY AND DESIGN</b></p>                    | <p>The activity conducted within the “Architecture: Theory and Design” curriculum aimed at training scholars who are able to operate at different levels of scientific research: from the theoretical dimension to the operational application of the knowledge achieved and vice versa.</p> <p>In this context, design experimentation, which is a synthetic expression of different knowledge, takes on a decisive importance both as regards the tools and techniques, and as regards the advancement of disciplinary knowledge. The research themes revolve around the most advanced architectural paradigms, including: - Architectural space: structure and composition - Housing models - Representation of the built heritage - Energy efficiency - Theory and history of architecture - Building and structural requalification - Safety assessment of buildings - Theoretical and operational aspects of the architectural project. The Curriculum combines the contributions of the various disciplines, which are integrated into a complex vision.</p> <p>The name “Architecture: Theory and design” identifies the general framework in which the training takes advantage of the different knowledge in the fields of theories and design that identify and support architecture at different scales, in its multi-dimensions both material and immaterial. The researches are distinguished by being both theoretical and applied</p>  |



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|   | researches, in which theoretical experimentation is flanked by both case studies of in-depth and systematic conceptual hypotheses, and modeling determinations elaborated by the virtuous reciprocity between application and declination in specific real areas  |
| URBAN<br>REGENERATION                                   | The Curriculum in "Urban Regeneration" aims to broaden the knowledge and skills of PhD students on the concepts of innovative approaches to urban regeneration, increasing the potential of place-based innovation towards local economic development. The mission is to encourage in-depth research and promote critical and theoretical reflection in accordance with the following research themes: - Urban planning and policy; -Urban and territorial planning; - Urban landscape; - Urban regeneration; - Economic and social development; - Economic policy and planning; - Enhancement of cultural heritage and historical centres; - Restoration of the integrity of the places, the city and the territory; - Ecological transition and climate change; - Local entrepreneurial processes. The resulting research results aim to seek new methodologies to deliver and implement integrated urban policy approaches and local economic development strategies aligned with the integrated sustainable urban development paradigm. |
| <b>Documents to be attached to the application form</b> | When submitting the application, Candidates must enter the following documentation on the Esse3 platform: <ul style="list-style-type: none"> <li>a) Research project</li> <li>b) Curriculum Vitae</li> <li>c) Copy of identity document.</li> <li>d) Self-certification of the degree certificate pursuant to the D.P.R. 445 of 28 December 2000.</li> </ul> <p>FOR NON-EU APPLICANTS ONLY: Master's degree and academic transcripts must be translated and legalized by the Italian Embassy or Consulate in their country of origin.</p>   |





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## FORM N. 2

|                                   |  |
|-----------------------------------|--|
| <b>Title of the PhD Programme</b> | <b>Law and Economics</b>   |
| <b>Cycle</b>                      | <b>XXXIX</b>   |
| <b>Curricula</b>                  | <ol style="list-style-type: none"> <li><b>1. Private Law</b> (IUS01 - Private Law; IUS/03 - Agri-Food Law; IUS/04 - Commercial Law; IUS/07 - Labour Law; IUS/18- Roman and Ancient Law)</li> <li><b>2. Public Law</b> (IUS/08 - Constitutional Law; IUS/10 - Administrative Law; IUS/11 - Ecclesiastical and Canon Law; IUS/13 - International Law; IUS/14 - European Union Law; IUS/16 - Criminal Procedure; IUS/17 - Criminal Law; IUS/18 - Roman and Ancient Law; IUS/20 - Philosophy of Law)</li> <li><b>3. Economics and Quantitative Methods</b> (SECS/P01 - Economics; SEC/P02 - Economic Policy; SECS/P03 - Public Economics; SECS/P07-Business Administration and Accounting Studies; SECS/P12 - Economic History; SECS/S06 - Mathematical Methods of Economics, Finance and Actuarial Sciences)</li> </ol>   |
| <b>Duration</b>                   | <b>Three years</b>   |
| <b>Coordinator</b>                | <b>Prof. Attilio Gorassini</b>   |
| <b>Department</b>                 | Department of Law, Economics and Human Sciences  |
| <b>PHD Positions</b>              | <b>no. 5 PhD positions:</b> 4 with scholarship; 1 without scholarship  |
| <b>Scholarships</b>               | <ul style="list-style-type: none"> <li>no. 4 scholarships financed on the DM. 118/2023 on M4.C1 - Investment 4.1 Public Administration - CUP: C36E23000060006;</li> </ul>  |
| <b>Admission procedure</b>        | <p>Admission will take place on the basis of:</p> <ol style="list-style-type: none"> <li>Evaluation of the research project and qualifications (maximum score 60 points)</li> <li>Interview and language test (maximum score 60 points)</li> </ol> <p><b>a) Evaluation of the research project and qualifications (maximum score 60 points):</b></p> <ul style="list-style-type: none"> <li>- Research proposal in English or Italian on a topic pertaining to one or more academic disciplines of the PhD Programme (max 2500 words) including: 1. description of the topic in accordance with Ministerial Decree no. 118/2023 and of its relevance, also in practice; 2. state of the art; 3. applicable methodology; 4. expected results (max 40 points).</li> <li>- <i>Curriculum vitae</i> highlighting the educational path, degree grade and any relevant qualification held (max 20 points).</li> </ul> <p><b>b) Interview and language test (maximum score 60 points),</b> including a discussion of the research proposal and assessment of the candidate's motivation and overall preparation in the chosen area.</p> |
| <b>Admission calendar</b>         | <p><b>Evaluation of the research project and qualifications: 14 September 2023.</b></p> <p>The list of candidates selected for the interview will be published by <b>19 September 2023</b>.</p> <p><b>Interview and language test: 21 September 2023 at 10:00</b>, at the Department of Law, Economics and Human Sciences of the Mediterranean University of Reggio Calabria, located in <b>Via dell'Università, 25 ex Salita Melissari - 89124 Reggio Calabria</b>.</p> <p>Any change to the calendar will be published on the University website (<a href="https://www.unirc.it/ricerca/bandi_dottorati_ricerca.php">https://www.unirc.it/ricerca/bandi_dottorati_ricerca.php</a>)</p> <p><b>No other notice will be issued.</b></p>   |
| <b>Language test</b>              | Test in one of the following languages of candidate's choice: English, French, Spanish, German.  |
| <b>Qualification required</b>     | <p>LMG/01 Master's degree in Law</p> <p>LM-56 Master's degree in Economic sciences</p> <p>LM-63 Master's degree in Public Administration</p> <p>LM-76 Master's degree in Economic Sciences for the Environment and Culture</p> <p>LM-77 Master's degree in Economics and Business Sciences</p> <p>LM/SC-GIUR Master's degree in Legal Sciences</p> <p>22/S Specialist degree in Law</p> <p>64/S Specialist degree in Economic Sciences</p>   |



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|  | 71/S Specialist degree in Public Administration<br>84/S Specialist degree in Management Studies  |
| <b>Period of training abroad</b>                                     | Mandatory: minimum 6 months – maximum 12 months  |
| <b>Period in enterprise</b>  | Mandatory minimum 6 months - maximum 12 months for scholarships based on DM. 118/2023 - M4.C1 – Inv. 4.1, Public Administration  |
| <b>Programme description</b>   | <p>The international PhD Programme in Law and Economics aims to allow the in-depth study of topics belonging to the academic disciplines listed above, favouring an interdisciplinary approach. It will enhance knowledge in the legal, economic and business fields, using a comparative methodology and with a view to European harmonization.</p> <p>It will promote cultural, educational and scientific initiatives aimed at developing and enhancing management skills, with particular reference to the management of human resources in the public administration sector and to the relevant regulatory framework, including the so-called technical standards and soft law. The approach must be aimed as much as possible at measuring the effectivity of regulations, examining cases and reasons for ineffectiveness. Special attention will be devoted to the need to evaluate public policies in view of their effectiveness and to the incentives to comply with the rules. This question naturally intertwines the topic of the digitization of the public administration, to the extent that the theme of new technologies and algorithms touches that of the effectiveness of the public administration's decisions. The potentially critical aspects of the latter must also be considered. In this respect, specific policy sectors may be examined (e.g. environment and sustainability, taxation, public order, health, cultural heritage and every aspect concerning the improvement of efficiency to favor the ecological transition).</p> |
| <b>Learning goals</b>  | <p>The dual approach of analysis - legal and economic - will permit interdisciplinarity and favour the training of new professional figures with teaching and research skills. To be admitted to the final exam, PhD students must conduct full-time study and research activities for at least three years. As part of the study activities, they are required to attend courses organized by the Academic Board of the PhD Programme and the Doctoral School of the Mediterranean University of Reggio Calabria as well as courses, conferences and seminars organized by other Institutions, subject to the Academic Board's authorization (120-hour minimum over three years). At the beginning of the first year, the PhD students will be assigned to a tutor, who will supervise their activities over the entire duration of the Programme. The tutor must be a member of the Academic Board. Every year, the PhD students will submit the list of the courses that they intend to attend and the other activities planned with the tutor to the Academic Board.</p>   |
| <b>Employment and professional opportunities</b>                     | <p>The PhD Programme aims at providing young graduates with teaching and research skills, preparing them for possible future academic research and teaching careers. They will also acquire the necessary skills to become public administration officers and managers. To this end the Programme will collaborate with the Masters in Public Administration organized by the Department of Law, Economics and Human Sciences.</p> <p>The PhD Programme intends to train new professional figures with specific skills in the areas of civil and public law that are crucial for the implementation of the principles of equal opportunities and non-discrimination, as well as highly qualified professionals capable of analysing and evaluating public policies in fields of national importance such as sustainability, technological modernization, energy conversion and digitization of the public administration.</p>  |
| <b>Consistency with the goals of Ministerial Decree no. 118/2023</b> | <p>The main theme of the PhD Programme is the study of models for an integrated development of the public administration with a multidisciplinary approach.</p> <p>All the Curricula focus on topics tightly connected with the strategic research lines outlined by the Ministerial Decree no. 118/2023.</p>  |
| <b>Documents to be attached to the application</b>                   | <p>Candidates are required to attach the following documents to their application on the ESSE3 platform:</p> <p>a) Research project (max 2500 words including an abstract of max 150 words) in accordance Ministerial Decree no. 118/2023, on a topic pertaining to one or more academic disciplines</p>   |



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|  | <p>of the PhD Programme, including the description of the research objectives, the state of the art, the proposed methodology and the expected results;</p> <p>b) <i>Curriculum Vitae</i> detailing education, the graduation grade as well as any publication and relevant qualification;</p> <p>c) Copy of the identity document;</p> <p>d) Self-certification of the degree certificate pursuant to the D.P.R. 445 of 28 December 2000.</p> <p>NON-EU NATIONALS ONLY: The degree certificates and transcripts of records must be translated and legalized by the Italian Embassy or Consulate in their country of origin.</p> |
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### FORM N. 3

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| Name of PhD course   | Civil, Environmental and Industrial Engineering  |
| Cycle                | XXXIX  |
| Curricula            | <ol style="list-style-type: none"> <li>1. Energy production from renewable sources</li> <li>2. Natural, environmental and anthropogenic risks</li> <li>3. Sustainable and resilient infrastructures and structures</li> <li>4. Processes, technologies and materials for the ecological transition</li> </ol>  |
| Duration             | 3 years  |
| Coordinator          | Prof.ssa Matilde Pietrafesa  |
| Department           | Civil, Energy, Environment and Materials Engineering (DICEAM)  |
| Places               | n. 9 places, of which n. 7 positions with scholarship and n. 2 positions without scholarship   |
| Scholarships         | <p>no. 7 scholarships of which:</p> <ul style="list-style-type: none"> <li>- no. 1 scholarship from the DM. 118/2023 - M4.C1 – Inv. 3.4, Digital and Environmental Transitions - CUP: C36E23000010006;</li> <li>- no. 2 scholarships valid on the DM. 118/2023 - M4.C1 - Inv. 4.1, PNRR - CUP: C36E23000030006;</li> <li>- no. 1 scholarship from the DM. 118/2023 - M4.C1 – Inv. 4.1, Public Administration - CUP: C36E23000080006;</li> <li>- no. 3 scholarships valid on the DM. 117/2023 - M4.C2 – Inv. 3.3 - CUP: C36E23000100009 co-financed by the following companies: <ul style="list-style-type: none"> <li>a) Oxford Sustainable Development Enterprise</li> <li>b) SHARING COMMUNICATION AGENCY</li> <li>c) C.T.L. ECOLOGY</li> </ul> </li> </ul> <p>the places covered by these scholarships include a mandatory training period in the company of at least 6 months</p>  |
| Admission procedures | <p>Admission will take place on the basis of:</p> <ol style="list-style-type: none"> <li>a) evaluation of a research project and qualifications (max 60 points)</li> <li>b) an oral and language exam (max 60 points)</li> </ol> <p><b>a) evaluation of a research project and qualifications (maximum 60 points)</b></p> <ul style="list-style-type: none"> <li>- <b>research project</b> (no more than 2500 words, including an abstract of no more than 150 words), consistent with one or more scientific disciplinary sectors (SDS) that characterize the Doctorate, for co-financed scholarships under DMs 117-118/2023, consistent with the objectives of the PNRR. The project should highlight objectives and relevance of the proposed research topic, description of the state of the art with related bibliographic references, work methodology, expected results (up to 45 points)</li> <li>- <b>curriculum vitae</b>, reporting the degree grade, the educational path and any qualifications held (up to 15 points)</li> </ul> <p><b>b) the oral and language exam (maximum 60 points)</b> will consist in a discussion of the research proposal and evaluation of the candidate's preparation and motivation. The knowledge of the English language (and Italian for foreign candidates) will be checked.</p> |
| Exam diary           | <p><b>Evaluation of a research project and qualifications: 19<sup>th</sup> September 2023 at 10:00.</b> The ranking list of the candidates admitted to the oral exam will be published by 20<sup>th</sup> September 2023</p> <p><b>Oral and language test: 21<sup>st</sup> September 2023 at 10:00.</b></p> <p>Both tests will take place at the <b>DICEAM Department</b> of the Mediterranean University of Reggio Calabria, located in Via Graziella, Feo di Vito, 89122 Reggio Calabria.</p> <p><b>Any changes to the exam calendar will be published on the website at the following link: <a href="http://www.unirc.it/ricerca/scuola_dottorato.php">http://www.unirc.it/ricerca/scuola_dottorato.php</a></b></p> <p><b>No other forms of notice will be activated by this University.</b></p>  |
| Test language        | English  |





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| <b>Required qualification</b>     | LM-17 Physics<br>LM-20 Aerospace and astronautic engineering<br>LM-21 Biomedical Engineering<br>LM-22 Chemical engineering<br>LM-23 Civil engineering<br>LM-24 Construction engineering<br>LM-25 Automation engineering<br>LM-26 Safety engineering<br>LM-28 Electrical engineering<br>LM-30 Energy and nuclear engineering<br>LM-31 Management engineering<br>LM-33 Mechanical engineering<br>LM-34 Naval engineering<br>LM-35 Environmental engineering<br>LM-40 Mathematics<br>LM-53 Material engineering<br>LM-54 Chemistry<br>LM-71 Industrial chemistry<br>LM-74 Geology<br>LM-75 Environmental and land sciences<br>20/S Physics<br>26/S Biomedical engineering<br>27/S Chemical engineering<br>28/S Civil engineering<br>29/S Automation engineering<br>31/S Electrical engineering<br>33/S Energy and nuclear engineering<br>34/S Management engineering<br>36/S Mechanical engineering<br>37/S Naval engineering<br>38/S Environmental engineering<br>45/S Mathematics<br>61/S Material engineering<br>62/S Chemistry<br>81/S Industrial chemistry<br>82/S Environmental and land sciences        |
| <b>Period of training abroad</b>  | Mandatory: minimum 6 months – maximum 12 months   |
| <b>Period in enterprise</b>       | Mandatory minimum 6 months - maximum 12 months for scholarships based on DM. Inv. 3.4, Digital and Environmental Transitions, on - M4.C1 – Inv. 4.1, Public Administration and DM. 117/2023 - M4.C2 – Inv. 3.3  |
| <b>Description of the project</b> | <p>The training course allows doctoral students to train in the world of research focused on theoretical, methodological and technological elements related to the macro-disciplinary areas of Civil, Environmental and Industrial Engineering, with particular reference to geotechnical, hydraulic, structural, transport, health-environmental, of chemical processes, of materials and of energy engineering.</p> <p>In the light of the ecological and digital transition underway and of the transition from a linear to a circular economic model, the fundamental and transversal elements of the PhD course will be the attention to the new technologies and to the environmental, economic and social sustainability of the technological solutions object of the teaching activities and of research. From a strictly educational point of view, the main objective of the PhD is to introduce students to the world of research by providing them with solid methodological foundations. At the same time, the activities will be aimed both at enriching the scientific and technological</p> |



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|                                      | <p>knowledge of doctoral students (developing their critical sense) and at expanding their relational skills through the promotion of teamwork (both in Italy and abroad), with particular attention to the development of communication and dissemination skills. PhD students will be strongly stimulated to tackle the chosen research topic with an interdisciplinary approach that, in particular, connects the methodological aspects typical of one or more engineering disciplines with those of the basic scientific ones (mathematics, physics, chemistry), which are fundamental and essential components of the Doctorate.</p> <p>The Doctorate will benefit from the excellent endowment of the Department's 17 research laboratories and facilities (<a href="https://www.diceam.unirc.it/laboratori.php">https://www.diceam.unirc.it/laboratori.php</a>), which will allow to better support the research activities of the expected number of students. The declared intention is to attract students of excellence in the areas of reference of the course and to make the Doctorate a center of initiatives of national and international appeal while maintaining strong links with the territory. In addition to this, all students will be encouraged to spend periods of study and research in laboratories of excellence in Italy and abroad. The topics covered in the doctorate both in the teaching and research activities are fully consistent with the provisions of the PNRR. The activities carried out as part of the Doctorate comply with the principle "do not cause significant damage" (DNSH) pursuant to art. 17 of Regulation (EU) 2020/852, in coherence with the technical guidelines prepared by the European Commission (Communication from the European Commission 2021/C58/01).</p>  |
| <p><b>Educational objectives</b></p> | <p>The PhD Program in Civil, Environmental and Industrial Engineering aims to train young researchers with solid methodological and technical-scientific bases, who are competitive in the reference sectors at a global level. The training objective is the transfer of knowledge on specific topics of Civil, Environmental and Industrial Engineering to train highly specialized figures able to tackle complex research or application issues. The training objectives are aimed at advancing knowledge:</p> <ul style="list-style-type: none"> <li>- of basic sciences, technologies and complex systems at the service of the civil, environmental and industrial engineering sector;</li> <li>- of the design, management, control, safety and monitoring of civil and industrial infrastructures and structures that interact with the environment and the territory;</li> <li>- of the engineering aspects related to the production of energy from renewable sources, of new advanced materials and in the management and enhancement of civil and industrial waste in a context of circular economy.</li> </ul> <p>Characteristic elements of the training course are:</p> <p>interdisciplinarity, in particular as a link between the basic scientific disciplines (mathematics, physics and chemistry) and the areas of Civil, Environmental and Industrial Engineering object of study and research (geotechnical, hydraulic, structural, transports, health-environmental, materials and energy engineering), attention to new technologies, in particular digital ones, and to aspects related to environmental, social and economic sustainability of the innovative solutions under study, connection with the territory of reference of the Course, internationalization.</p> <p>Due to the interdisciplinary nature of the topics, the Doctorate is organized in training courses, with both general and specialized courses, aimed at transferring the basic knowledge of each subject area (mainly during the 1<sup>st</sup> and 2<sup>nd</sup> year of the course) and at the development of specific research topics, subject of the doctoral theses (in particular during the 2<sup>nd</sup> and 3<sup>rd</sup> year). The training will be complemented by experiences in the laboratories of the DICEAM Department of the Mediterranean University of Reggio Calabria, with the possibility of carrying out research periods abroad at prestigious international institutions.</p> <p>To be admitted to the final exam, PhD students must conduct full-time study and research activities for at least three years.</p> <p>As part of the study activities, specific Courses organized by the Board of Professors or by the Doctoral School of the Mediterranean University or Courses, Conferences and Seminars organized by other Institutions and subject to the authorization of the Board of professors, must be attended for at least 120 total hours in the three-year period. At the beginning of the course, the Board of Professors assigns each PhD student a tutor to supervise and assist the</p> |



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|  | <p>student during the entire course of study. The tutor must belong to the teaching staff. Each year, each student, in agreement with his/her tutor, presents a training plan which presents, in a concise manner, the courses that the student intends to follow and the other planned activities. Normally, the interdisciplinary and methodological courses organized by the Doctoral School of the Mediterranean University of Reggio Calabria are mandatory during the first and second year of the course, each doctoral student, in agreement with his/her tutor, can instead choose, up to the completion of the expected number of hours, which among the courses proposed by the Board of professors, to attend. Study and research activities, including laboratory activities, constitute the preponderant part of the training course. The training plan is approved by the Board of professors and can be amended during the year, at the request of the student and upon approval by the Board, for proven needs. As part of the PhD program, national and international mobility will be stimulated so that students can conduct experiences in laboratories and research centers of excellence in Italy and abroad. Training activities common to the curricula will be aimed, in collaboration with the Doctoral School, in particular at an in-depth study of:</p> <ol style="list-style-type: none"> <li>1) English language improvement</li> <li>2) Enhancement and dissemination of intellectual property results and open access to research data and products</li> <li>3) Management of research and knowledge of European and international research systems</li> <li>4) Fundamental principles of ethics, gender equality and integrity.</li> </ol>  |
| <b>Consistency with PNRR objectives</b>            | <p>The consistency of the objectives and themes developed in the context of the Doctorate in Civil, Environmental and Industrial Engineering is full for all the proposed curricula; in fact, most of the six missions of the PNRR are extensively developed in them.</p> <p>In detail, as regards Mission 1 - Digitization, innovation, competitiveness and culture, within the scope of the PhD there is a strong focus on digital technologies that are able to improve the performance and sustainability of both the structural and infrastructural works typical of the Civil-Environmental Engineering (for example real-time monitoring systems of works and systems for the defense against natural and anthropogenic risks, digitalization of logistics, transport systems and infrastructures) and of the industrial systems covered by the Doctorate (production and management of materials, biofuels and energy).</p> <p>For Mission 2 - Green revolution and ecological transition, thanks to the PhD, central research topics will be further developed in the proposing Department and linked to the circular economy (in particular recovery of chemical compounds, fertilizers, biofuels and energy from waste and scrap), to renewable energy sources (solar, wind, biofuels) and energy saving (technologies to improve the efficiency of public and private real estate assets), to the development of the sustainable hydrogen supply chain, to the contrast to hydrogeological instability, to the improvement of the quality of inland and marine waters thanks to innovative wastewater treatment systems.</p> <p>Both Missions 1 and 2 involve research themes and aspects of interest for public administrations, that will be developed within the doctorate both from the point of view of the hosting buildings (sustainability, efficiency increasing and use of renewable energy sources) and of activities management (digitalization and process innovation).</p> <p>Mission 3 - Infrastructures for sustainable mobility will find space thanks to activities related to the study of systems for the development of the railway system and intermodal nodes, with particular reference to Southern Italy, to the development of technologies for efficient and sustainable ports.</p> <p>As regards Missions 4 - Education and research - and 5 - Inclusion and cohesion, the realization of training courses of excellence in southern areas characterized by a very strong emigration of young people is already in itself a powerful tool for local development. This mission, in fact, will make it possible to create opportunities to attract and/or retain excellent students who can contribute to the social and economic development of the reference area.</p> |
| <b>Occupational and professional opportunities</b> | <p>The figure formed by the PhD Course in Civil, Environmental and Industrial Engineering is characterized by the ability to integrate the specialized skills acquired in the various areas of design, construction and management of structures and infrastructures, of environmental</p>   |



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|  | <p>monitoring and protection, of the analysis and prevention of natural and anthropogenic risks, of the production of materials and energy, of innovative industrial technologies, with the characterizing elements of the ecological transition, of the sustainable development, of the circular economy and of the opportunities offered by new technologies.</p> <p>The professional figure to be trained, in addition to holding highly professional positions in productive sectors with a strong technological value, will have professional skills and abilities capable of leading research groups operating in the public or private sector.</p> <p>Therefore, the Doctorate aims to train highly qualified professionals capable of holding key positions in public and private research centers, top management positions in Authorities, Public Administrations and Engineering companies engaged in the design, planning and management of structures and infrastructures, environmental remediation, soil protection, waste management, waste and raw materials management, prevention and management of natural and anthropogenic risks, production and management processes of low environmental impact energy, sustainable mobility.</p> <p>There are many employment and professional opportunities: the PhD in Civil, Environmental and Industrial Engineering will be able to find employment as well as in research centers and national and international universities, especially in all small, medium and large enterprises and public administrations that provide for the management, coordination and execution of highly qualified research activities aimed at the development of innovative technologies in all sectors of civil, environmental and industrial engineering.</p> <p>In addition, the entrepreneurial activity of doctoral students who, in the course of their research, will achieve results with a high degree of innovation, also through the use of academic spin-offs, will be strongly encouraged.</p> |
| Short description of the curriculum:<br>ENERGY PRODUCTION FROM RENEWABLE SOURCES   | <p>The production of energy from renewable sources plays a key role in the ecological transition process, in particular with a view to achieving the almost complete decarbonisation of the country by 2050. Replacing fossil energy sources requires the design of new technologies and the improvement of existing ones. In this curriculum, the teaching and research activities will be aimed at studying the techniques for exploiting solar, wind, geothermal, hydroelectric, sea waves, tides, biomasses energy for the production of electrical and thermal energy and related storage systems, including innovative ones based on the use of hydrogen. As part of this Curriculum, teaching and research activities will be carried out with particular attention to:</p> <ul style="list-style-type: none"> <li>◦ Photovoltaic systems and solar collectors</li> <li>◦ Onshore and offshore wind farms</li> <li>◦ Geothermal plants</li> <li>◦ Offshore foundations</li> <li>◦ Plants and systems for the exploitation of wave energy and tides</li> <li>◦ High-performance hydroelectric plants</li> <li>◦ Storage systems that use hydrogen as an energy vector</li> <li>◦ Smart Grid for sustainability and efficiency.</li> </ul> <p>The subject of the analysis will also be the comparison of the various technologies in terms of efficiency and production costs, as well as the assessment of their suitability for implementation for distributed generation. Finally, the effect of a widespread penetration of these sources to replace fossil fuels in various areas (construction, transport and industry) will be estimated in terms of greenhouse gas emissions reduction, the main causes of climate change, and urban pollution.</p>  |
| Short description of the curriculum:<br>NATURAL, ENVIRONMENTAL AND ANTHROPIC RISKS | <p>The Curriculum aims to deepen and develop knowledge of natural phenomena and their interactions with ecosystems, human activities and infrastructures present in the area, in order to characterize, predict and mitigate natural, environmental and anthropogenic risks. The course is aimed at the integration of knowledge acquired on risk phenomena, technological innovation, systems capable of monitoring the environment in an integrated way, networks for data management and environmental, structural, hydraulic and geotechnical modeling for the assessment of impacts in terms of anthropogenic pollution and calamitous events at different scales.</p> <p>The didactic and research activities addressed will concern:</p>   |





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|  | <ul style="list-style-type: none"> <li>◦ Remediation of contaminated sites</li> <li>◦ Controlled landfills</li> <li>◦ Innovative treatments of civil and industrial wastewater</li> <li>◦ Integrated and sustainable management of the urban waste cycle</li> <li>◦ Seismic risk assessment methods</li> <li>◦ Seismic protection of buildings, infrastructures, historical and monumental assets</li> <li>◦ Methods for estimating extreme events at sea both in the short and long term</li> <li>◦ Models for coastal risk assessment</li> <li>◦ Hydraulic protection of coastal, river and urban areas</li> <li>◦ Problems related to the design and sizing of filtering transitions in embankment works</li> <li>◦ Analysis, estimation and management and mitigation of landslide, erosion and coastal flooding and flood risk</li> <li>◦ Principles, theories and analytical, computational and experimental methodologies for the physical-mechanical modeling of soils and rocks, also aimed at risk mitigation</li> <li>◦ Assessment and mitigation of the risk of land liquefaction</li> <li>◦ Local Seismic Response Analysis</li> <li>◦ Techniques for improving and strengthening soils and rock masses</li> <li>◦ Innovative structural and geotechnical monitoring systems</li> <li>◦ Environmental impact assessment of infrastructures</li> </ul>              |
| Short description of the curriculum:<br><b>SUSTAINABLE AND RESILIENT INFRASTRUCTURES AND STRUCTURES</b>            | <p>Sustainability and resilience are fundamental objectives in the construction of new infrastructures and in the adaptation of existing ones. In this Curriculum particular attention will be paid to the issues of resilience, safety and reliability of buildings and infrastructures, the use and optimization of sustainable design solutions (which include the use of geosynthetics), the design and development of new materials with advanced mechanical performance, innovative solutions for the structural and technological sustainability of structures at sea.</p> <p>Therefore, teaching and research activities of present Curriculum will relate to:</p> <ul style="list-style-type: none"> <li>◦ Metamaterials for structural engineering</li> <li>◦ Innovative infrastructures at sea</li> <li>◦ Study of hydraulic phenomena in pressurized pipelines, in Fire Protection Systems (FPS) and in aqueduct networks</li> <li>◦ Sustainable and resilient geotechnical works</li> <li>◦ Performance analysis of the static and seismic behavior of geotechnical works</li> <li>◦ Eco-sustainable technologies and materials</li> <li>◦ Sustainable mobility</li> <li>◦ Functional adaptation of the infrastructural heritage</li> <li>◦ Innovative mobility systems and intelligent infrastructures</li> </ul>   |
| Short description of the curriculum:<br><b>PROCESSES, TECHNOLOGIES AND MATERIALS FOR THE ECOLOGICAL TRANSITION</b> | <p>The ecological transition and the transition from a linear to a circular economic system require a complete rethinking of production activities. The challenges for environmental sustainability involve the identification of new production methods, the development of materials that require lower consumption of raw materials, energy and water resources and the enhancement of agricultural, urban and industrial waste and waste. As part of this Curriculum, therefore, teaching and research activities will be developed relating to:</p> <ul style="list-style-type: none"> <li>◦ New materials and technologies for increasing the energy efficiency of public and private buildings to achieve the "nZEB" standards - nearly Zero Energy Buildings and energy-plus buildings and the construction of energy districts and communities;</li> <li>◦ Green hydrogen production, to be used as a sustainable energy vector both in fuel cells for the production of electricity and as fuel in internal combustion engines, also with a view to achieving zero-emission mobility;</li> <li>◦ Bio-refining of waste and biodegradable waste for the production of compounds for basic chemistry, biofuels, fertilizers and energy.</li> <li>◦ Green chemical materials and processes</li> <li>◦ The reuse of waste materials in civil engineering works</li> </ul> |





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|  | <ul style="list-style-type: none"><li>° The use of innovative synthetic materials in civil and environmental engineering works to promote the ecological transition process</li><li>° The behavior of constructions over time (life cycle, degradation of materials, fatigue, etc.).</li><li>° The circular economy in transport infrastructure.</li><li>° Evaluation and non-destructive tests for modeling and diagnostics of materials for Industry 4.0</li></ul>   |
| <b>Documentation to be attached to the application</b> | <p>Candidates must insert on the <b>esse3</b> platform when submitting the application the following documentation:</p> <ul style="list-style-type: none"><li>a) a <b>research project</b> (no more than 2500 words, including an abstract of no more than 150 words), consistent with one or more scientific disciplinary sectors (SDS) that characterize the Doctorate, for co-financed scholarships under DMs 117-118/2023, consistent with the objectives of the PNRR. The project should highlight objectives and relevance of the proposed research topic, description of the state of the art with related bibliographic references, work methodology, expected results</li><li>b) their <b>curriculum vitae</b>, reporting the degree grade, the educational path and any qualifications held</li><li>c) a copy of their <b>identity document</b></li><li>d) <b>self-certification of the degree diploma</b> pursuant to the D.P.R. 445 of 28 December 2000.</li></ul> <p>ONLY FOR NON-EU APPLICANTS: Master's degree and academic transcripts must be translated and legalized by the Italian Embassy or Consulate in their country of origin</p> |



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#### FORM N. 4

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| PhD program   | Information Engineering  |
| Cycle   | XXXIX  |
| Curricula   | Single Curriculum  |
| Duration  | 3 years  |
| Coordinator   | Prof. Antonella Molinaro   |
| Department  | Ingegneria dell'Informazione, delle Infrastrutture e dell'Energia Sostenibile (DIIES)  |
| PhD Positions   | n. 6 positions (n. 5 positions with scholarship and n. 1 without scholarship)  |
| Scholarships  | <p><b>no. 5 scholarships</b> of which:</p> <ul style="list-style-type: none"> <li>- <b>no. 1 scholarship</b> from the DM. 118/2023 - Mission 4 - Component 1 - Inv. 4.1, PNRR - CUP: C36E23000050006;</li> <li>- <b>no. 1 scholarship</b> from the DM. 117/2023 - Mission 4 - Component 2 - Inv. 3.3 and co-financed by the company STMicroelectronics - CUP: C36E23000110009;</li> <li>- <b>no. 3 scholarships</b> from the Extended Partnership "RESearch and innovation on future Telecommunications systems and networks, to make Italy more smART", theme "14. Telecommunications of the future" - CUP: C37G22000480001, divided as follows: <ul style="list-style-type: none"> <li>• no. 2 grants from - Spoke 2 - Integration of Networks and Services - Structural project S11 "Integrated Terrestrial and non-Terrestrial Networks"</li> <li>• no. 1 scholarship for Spoke 4 – Programmable Networks for Future Services and Media- Structural Project S2 "Programmable networks"</li> </ul> </li> </ul>  |
| Admission mode  | <p>The PhD admission is organized in two phases. The first one consists in the <b>evaluation of the candidate's qualifications (max 60 points)</b> based on the documentation (in Italian or in English) attached to the application (refer to section <b>Documentation to be attached to the application</b>); the second one consists in an <b>interview</b> (in Italian or in English) which consists in the discussion of the candidate's research project and titles and also includes verification of <b>knowledge of the English language (max 60 points)</b>. At the end of the first phase, the list of admitted candidates will be published and they will access the interview. <b>Interviews will be carried out on line (videoconference)</b>. The video interview, which is public, must ensure the reciprocal visibility and the creation and sharing of handwritten documents. At the beginning of the interview a valid ID must be exhibited. The candidate who intends to use the video mode for the interview should indicate in the application his/her <b>email address and SKYPE name</b>.</p> |
| Exam agenda   | <p><b>Evaluation of research project, CV and qualifications: in the week 18-22 September 2023.</b> The results will be published by 25 September 2023.</p> <p><b>2) Oral exam and language assessment: on 26 September 2023 at 3.00 pm (Italian time)</b> remotely on an electronic platform.</p> <p>Details of the calendar and platform for online interviews, and any changes to the exam calendar will be published on the website at the following link:<br/> <a href="http://www.unirc.it/ricerca/scuola_dottorato.php">http://www.unirc.it/ricerca/scuola_dottorato.php</a><br/> No other forms of notification will be activated by this University.</p>   |
| Language tested   | ENGLISH  |
| Degree Qualification requested according to Italian classification. | LM-17 Fisica<br>LM-18 Informatica<br>LM-20 Ingegneria aerospaziale e astronautica<br>LM-21 Ingegneria biomedica<br>LM-22 Ingegneria chimica<br>LM-23 Ingegneria civile<br>LM-24 Ingegneria dei sistemi edilizi<br>LM-25 Ingegneria dell'automazione<br>LM-26 Ingegneria della sicurezza  |
| LM or /S stands for Master degree                                   |  |



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| Equivalent degrees achieved abroad are also admissible | <p>LM-27 Ingegneria delle telecomunicazioni</p> <p>LM-28 Ingegneria elettrica</p> <p>LM-29 Ingegneria elettronica</p> <p>LM-30 Ingegneria energetica e nucleare</p> <p>LM-31 Ingegneria gestionale</p> <p>LM-32 Ingegneria informatica</p> <p>LM-33 Ingegneria meccanica</p> <p>LM-34 Ingegneria navale</p> <p>LM-35 Ingegneria per l'ambiente e il territorio</p> <p>LM-40 Matematica</p> <p>LM-44 Modellistica matematico-fisica per l'ingegneria</p> <p>LM-53 Scienza e ingegneria dei materiali</p> <p>LM-54 Scienze chimiche</p> <p>LM-66 Sicurezza informatica</p> <p>LM-70 Scienze e tecnologie alimentari</p> <p>LM-71 Scienze e tecnologie della chimica industriale</p> <p>20/S (specialistiche in fisica)</p> <p>23/S (specialistiche in informatica)</p> <p>25/S (specialistiche in ingegneria aerospaziale e astronautica)</p> <p>26/S (specialistiche in ingegneria biomedica)</p> <p>27/S (specialistiche in ingegneria chimica)</p> <p>28/S (specialistiche in ingegneria civile)</p> <p>29/S (specialistiche in ingegneria dell'automazione)</p> <p>30/S (specialistiche in ingegneria delle telecomunicazioni)</p> <p>31/S (specialistiche in ingegneria elettrica)</p> <p>32/S (specialistiche in ingegneria elettronica)</p> <p>33/S (specialistiche in ingegneria energetica e nucleare)</p> <p>34/S (specialistiche in ingegneria gestionale)</p> <p>35/S (specialistiche in ingegneria informatica)</p> <p>36/S (specialistiche in ingegneria meccanica)</p> <p>37/S (specialistiche in ingegneria navale)</p> <p>38/S (specialistiche in ingegneria per l'ambiente e il territorio)</p> <p>45/S (specialistiche in matematica)</p> <p>50/S (specialistiche in modellistica matematico-fisica per l'ingegneria)</p> <p>62/S (specialistiche in scienze chimiche)</p> <p>78/S (specialistiche in scienze e tecnologie agroalimentari)</p> <p>81/S (specialistiche in scienze e tecnologie della chimica industriale)</p> <p>For foreign candidates:<br/>Equivalent degrees achieved abroad are also admissible.</p> |
| Period of training abroad                              | <p>Mandatory: minimum 6 months - maximum 12 months for grants to be valid on DM. 118/2023 - M4.C1 - Inv. 4.1 Research and DM. 117/2023 - M4.C2 - Inv. 3.3</p> <p>The grants financed under the <b>PNRR - RESTART</b> initiatives provide for an optional period of study and research abroad up to a maximum of six (6) months, even if not continuous, to be carried out by <b>31.12.2025</b>.</p>   |
| Period in enterprise                                   | <p>Mandatory minimum 6 months - maximum 18 months for bags to be valid on DM 117/2023 - Mission 4 - Component 2 - Inv. 3.3</p>  |
| PhD project description                                | <p>The PhD program in Information Engineering aims to form professionals with high qualification and advanced multidisciplinary skills in the area of Information and Communication Technologies (ICT) and their applications. The training program aims to strengthen the basic knowledge on physics, mathematics and chemistry, to deepen the Information Engineering-related topics, especially the Key Enabling Technologies (KETs) (ranging from ICT to nanotechnologies and nanoelectronics, to advanced materials,</p>   |



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|                                       | <p>photonics, and biotechnologies), and to develop innovative research topics, both theoretical and practical.</p> <p>The PhD program focuses on Information Engineering technologies, methods and systems, and encourages interdisciplinary studies. The objective is to form, in a multidisciplinary context, PhDs with solid competences in Information Engineering, capable of innovating, through solutions, methods and key enabling technologies, in strategic scenarios such as agro-industry, renewable energy, biomedicine, public administration, environmental and infrastructure monitoring, Industry 4.0, e-Health, smart cities and sustainable mobility.</p>  |
| Training Objectives                   | <p>The PhD training objectives concern:</p> <ul style="list-style-type: none"> <li>- completion of physical-mathematical-chemical training, with reference to the methods of largest interest for Information Engineering;</li> <li>- deepening the theoretical foundations of the disciplines related to the reference scientific sectors for Information Engineering and its related applications;</li> <li>- critical analysis of results and perspectives in the sector of interest;</li> <li>- development of advanced research, including possible unconventional applications of ICT and other KETs.</li> </ul> <p>Furthermore, the PhD candidate will have the ability to:</p> <ul style="list-style-type: none"> <li>- plan and carry out experimental and/or numerical tests and verifications</li> <li>- analyse technological innovation needs of companies and public and private, national and international organizations</li> <li>- identify funding opportunities</li> <li>- planning research and technology transfer projects.</li> </ul> <p>The training program is organized in the following activities:</p> <p><b>Mini-courses.</b> Typically of 8 or 12 hours, both of methodological and informative types. They can be selected by the PhD student in a large pool of multi-disciplinary courses to create a flexible and customized training plan.</p> <p><b>Transversal skills.</b> Acquired by attending courses offered by the Doctoral School on the following main topics: European and international research project management; dissemination, intellectual property rights, and open science; ethics, gender equality and integrity; language skills. PhDs are requested to develop communication capabilities towards different target groups.</p> <p><b>External courses.</b> Offered by PhD programs in other national and international research Institutions; or by attending seminars from experts in Universities, Research Centres and Industries; or by participating in national and international PhD Schools in the ICT and KET areas</p> <p>PhD students devote most of their time to research (study of the related literature, paper writing, conference participation, thesis preparation, etc.), under the supervision of one or more tutors, spending part of the time in other research institutions in Italy or abroad.</p> |
| Coherence with the objectives of PNRR | <p>The PhD training and research program is fully coherent with the disciplines and thematic areas of the <b>digital and environmental transitions</b>. It focuses on ICT that enables digitalization, innovation and ecologic transition, which are pillars of the PNRR and its Missions. It promotes inter-disciplinarity and inter-sectoriality knowledge development in the <b>contexts of interest of PNRR</b>. It also promotes adhesion to international research networks and favours the involvement of research centres in the definition of the training program.</p> <p><b>Digitalization and innovation</b> of processes, products and services represent a key factor in the transformation of the Country that directly involves Mission 1, and transversally all PNRR Missions. <b>Ecologic transition</b>, in Mission 2, is related to the reduction of polluting emissions to make the system sustainable in the long term, through a progressive <b>decarbonisation</b> of all sectors and the increase in the quota of electric energy produced by <b>renewable sources</b>. Digitalization concerns the technological update in production processes; the <b>infrastructures in a broad sense, from energy ones to transportation ones</b> (Missions 2 and 3) thanks to digital technologies for monitoring and control; improvement in the <b>health care</b> (Missions 5 and 6); <b>efficiency in the food supply chains</b> with focus on food safety, tracing and sustainability (Mission 2); new services enabled by the <b>potentials of digital in the culture</b></p>  |



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|  | <p><b>and tourism sectors</b> (Mission 1); digitalization of public administration and development of digital services (Mission 1), pushing towards migration to the cloud, facilitating service access to citizens, empowering <b>cybersecurity</b> defences, and improving <b>connectivity through ultra-wide band telecommunications</b> to achieve the gigabit society.</p> <p>Special attention is given in Mission 2 to <b>smart and sustainable mobility</b>, by increasing collective mobility for passengers and goods, renewing and digitizing the logistic system and in particular by road safety and development of port systems.</p> <p>On all these topics the PhD course includes wide and solid competence and offers a well-structured training program (e.g., courses on cybersecurity, privacy, digital identity, satellite networks, 5G, smart roads, future ports, biomedicine and microwaves, nanotechnologies).</p>   |
| Thematic description of the scholarships | <p><b>DM 117/2023 – PNRR, Mission 4, Component 2, Investment 3.3</b><br/> <b><u>N° 1 scholarship co-funded by DM117/2023 and STMicronics on the Topic: “Deep Learning (DL) Strategies for Brain Computer Interface (BCI) Application and related Hardware Implementation”.</u></b></p> <p>The research program, coherently with DM117/2023, aims to strengthen high-profile competences, in particular within the <i>Key Enabling Technologies</i> field, with the contribution and involvement of the company STM, which is interested in the applications of the Deep Learning technique to the Brain Computer Interface area.</p> <p><b>DM 118/2023 –PNRR, Mission 4, Component 1, Investment 4.1 Research PNRR</b><br/> <b><u>N° 1 scholarship on the Topic: Research PNRR</u></b></p> <p>The research program, coherently with DM118/2023, deals with topics that are able to bring a significant development of theoretical and applied knowledge within the fields of interest of PNRR. For the scientific-technological sectors, it also aims to promote interdisciplinary and inter-sectorial research, and membership of international research networks.</p> <p><b>From the Extended Partnership “RESearch and innovation on future Telecommunications systems and networks, to make Italy more smART”, theme “14. Telecommunications of the future” - CUP: C37G22000480001, divided as follows:Spoke 2 - Integration of Networks and Services – Project S11 “Integrated Terrestrial and non-Terrestrial Networks”:</b></p> <p><b><u>N° 2 scholarships on the Topic: Edge-cloud computing solutions for integrated Terrestrial/Non Terrestrial networks</u></b></p> <p>Future integrated Terrestrial/Non-Terrestrial (T/NT) networks, where space network entities (unmanned aerial vehicles - UAVs, aircrafts, high-altitude platforms - HAPS, and Geostationary and non-Geostationary satellites) cooperate with conventional and emerging terrestrial communication architectures, represent a key solution to provide ubiquitous, resilient, and three-dimensional wireless connectivity around the world, supporting Mobile Broadband Reliable Low Latency Communications, massive Ultra Low Latency Communications, and Human-Centric Services. Furthermore, it can provide high-speed connectivity in remote sites or in disaster-affected areas.</p> <p>The resulting network will improve coverage, user experience, system capacity, service reliability and availability, and environmental sustainability of next generation communication infrastructure for many verticals: transport, security, public safety, media, entertainment, eHealth, energy, agriculture, finance, automotive, etc. In such a context, the proposed research addresses the investigation, design and development of solutions based on edge-cloud computing designed for T/NT networks aimed at supporting heterogeneous services with diverse application requirements.</p> <p><b>Spoke 4 – Programmable Networks for Future Services and Media- Project S2 “Programmable networks”</b></p> <p><b><u>N° 1 scholarship on the Topic: Reti programmabili per il supporto di servizi intelligenti distribuiti</u></b></p> <p>The evolution of telecommunication networks is quickly steering toward programmability. Network functions (such as routing, resource allocation, mobility management functions) are</p> |





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|  | <p>no longer realized by dedicated hardware rather they are implemented through containerized or virtualized applications running on general purpose servers located into the cloud to edge continuum. Similarly, network nodes have wide margins of programmability, on both Control and Data Planes. It is therefore possible to carry out different types of operations within network devices (in-network computing) such as: extracting statistics, profiling and filtering forwarded data by operating at line speed, implementing advanced "in- network Artificial Intelligence (AI)".</p> <p>All the above lead to a rethinking of the traditional centralized cloud-based approach to deploy services, pushing the deployment of a distributed approach towards the network edge and on board the devices (far edge), closer to the large amount of raw input data, with the advantages of reducing the traffic traversing the core network as well as the latency.</p> <p>The goals of the research in this filed are manifolds. On the one hand, the aim is to design innovative optimized cooperative algorithmic solutions to enable the deployment, configuration, chaining, and migration of intelligent distributed applications, as well as the end-to-end resource orchestration across multiple network domains (cloud, edge, far edge). On the other hand, the aim is to implement various intelligent functions within programmable network devices, by relying on the programmability of Control and Data Planes.</p>   |
| Expected employment and professional opportunities | <p>PhD candidates who go through the program will be able to choose between various employment opportunities, namely:</p> <ol style="list-style-type: none"> <li>1. <b>Academic research.</b> Despite the scarce resources allocated to the universities over the last years, a high percentage of research doctors have been recruited as Researchers from Italian universities, and others are permanently employed in foreign Universities</li> <li>2. National (CNR, CIRA, ENEA, ASI, INFN) and international (EURATOM, CERN, AFRL, IPP, ESA) <b>research institutes</b></li> <li>3. Design, research and development activities in national and international <b>companies in the ICT sector and KETs</b>. In this regard, it should be noted that the national and southern-central ICT industry is constantly looking for personnel with a post-graduate level of specialization to be included in the R&amp;D departments.</li> <li>4. Management of technological innovation in companies, public and private institutes active in the sector of services.</li> </ol> <p>Many University spin-offs and start-ups, funded by PhD doctors in Information Engineering, are active and have distinguish themselves in national and international competitions.</p>   |
| Documentation to be attached to the application    | <p>Candidates must insert on the <b>esse3</b> platform when submitting the application the following documentation:</p> <ol style="list-style-type: none"> <li>a) A <b>research project</b>, written in Italian or English language (no more than 2500 words, with an abstract of no more than 150 words), coherent with the research topics of the scholarship(s) to which the candidate intends to apply (see section <b>Thematic description of the scholarships</b>) and with one or more objectives of PNRR. For the position without scholarship, the topic must be coherent with the research topics of one or more scientific sectors in the Doctoral Program. The project will preferably describe scientific relevance of the proposed research, the state-of-the-art within the reference field and related bibliography, research challenges and objectives, and possibly methodologies and tools that the Candidate plans to use.</li> <li>b) <b>Curriculum vitae</b> with a detailed breakdown of the studies carried out and the scores obtained, as well as any <b>publication and other titles</b> attached. Candidates who have received the degree (or other titles) from a non-Italian institution must present titles translated in one of the languages of the European Community (with preference for Italian or English).</li> <li>c) <b>Copy of a valid identity document</b>, which will then be shown, for identification purposes, during the interview.</li> <li>d) <b>Self-certification of the degree diploma</b> pursuant to the D.P.R. 445 of 28 December 2000.</li> </ol> <p>ONLY FOR NON-EU APPLICANTS: Master's degree and academic transcripts must be translated and legalized by the Italian Embassy or Consulate in their country of origin</p> |



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|  | <p>The Candidate shall specify in the application the type of scholarship(s) he/she intends to apply for: DM117/2023, DM118/2023, RESTART Spoke 2, RESTART Spoke 4.</p> <p>The Candidate shall indicate in the application his/her E-mail address, and SKYPE identification.</p> |
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## FORM N. 5

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| PhD programme      | Agricultural, Food and Forestry Science (SAAF)  |
| Cycle              | XXXIX   |
| Curricula          | =====   |
| Coordinator        | Prof. Leonardo SCHENA   |
| Department         | Agraria   |
| Duration           | 3 years   |
| PhD positions      | 6 PhD positions (5 with scholarship, 1 without scholarship is preferentially reserved to foreign candidates).   |
| Scholarships       | <p>no. 5 scholarships of which:</p> <ul style="list-style-type: none"> <li>- no. 4 scholarships financed on the DM. 118/2023 on M4.C1 - Investment 4.1 PNRR - CUP: C36E23000040004;</li> <li>- no. 1 scholarship financed on the DM. 117/2023 on M4.C2 - Investment 3.3 and co-financed with the CREA - CUP: C36E23000120009;</li> </ul>  |
| Admission          | <p><b>Admission to the PhD course is based on two steps:</b></p> <p><b>A) EVALUATION OF A RESEARCH PROJECT PROPOSED BY THE CANDIDATE AND EVALUATION OF ITS QUALIFICATION</b> (<i>up to 60 points</i>)</p> <ul style="list-style-type: none"> <li>- <b>The research project</b> can be written in English or Italian, must focus on one or more topics included within the PhD program and must be coherent with one or more priorities of the National Recovery and Resilience Plan (NRRP). The project should not exceed 25,000 characters (including spaces) and should include the following parts: i) Abstract, ii) Introduction (description of the topic and state of the art), iii) Objectives, iv) Planned activities and methods, v) Expected results and their relevance, vi) Bibliography. A maximum of 45 points can be awarded for the project.</li> <li>- <b>Curriculum vitae</b> containing details on the studies carried out and marks obtained in each discipline, any qualifications relating to the topic of the doctorate and any scientific publications. A maximum of 15 points can be awarded for the curriculum.</li> </ul> <p><b>B) ORAL EXAM AND ASSESSMENT OF KNOWLEDGE OF THE LANGUAGE</b> (<i>up to 60 points</i>)</p> <ul style="list-style-type: none"> <li>- <b>Interview</b> in English or Italian focusing on the discussion of the research project, evaluating the candidate aptitude to scientific research and his/her general scientific knowledge.</li> <li>- <b>Assessment of the English language.</b> For foreign candidates a basic knowledge of the Italian language will be also evaluated.</li> </ul> |
| Admission schedule | <p><b>Evaluation of research projects and CVs: September 21<sup>st</sup>, 2023.</b></p> <p>The list of admitted to the oral exam will be published by Monday, September 25<sup>th</sup>, 2023</p> <p><b>Interview and language test: September 26<sup>th</sup>, 2023, starting at 09:30.</b> The interview will take place at the <b>Department of Agriculture</b> of the <i>Mediterranea</i> University of Reggio Calabria, Località Feo di Vito - 89122 Reggio Calabria.</p> <p>Candidates who are resident or temporary based outside Italy, and those who reside more than 700 km away from the venue where interviews will take place, can request to be interviewed remotely. <u>These candidates must clearly indicate their choice in the application form, specifying an e-mail address to be contacted to schedule the remote interview.</u></p>  |



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|  | <p><b>Schedule variations will exclusively be published at the following link:</b><br/> <a href="http://www.unirc.it/ricerca/scuola_dottorato.php">http://www.unirc.it/ricerca/scuola_dottorato.php</a>. Candidates will not receive communications under any other form.</p>   |
| <b>Language test</b>   | English (English and Italian for foreigner candidates)  |
| <p><b>Degree Qualification requested according to Italian classification.</b></p> <p><b>Equivalent degrees obtained abroad are also admissible</b></p> | <p>LM-3 Architettura del paesaggio<br/> LM-4 Architettura e ingegneria edile-architettura<br/> LM-4 c.u. Architettura e ingegneria edile-architettura (quinquennale)<br/> LM-6 Biologia<br/> LM-7 Biotecnologie agrarie<br/> LM-8 Biotecnologie industriali<br/> LM-9 Biotecnologie mediche, veterinarie e farmaceutiche<br/> LM-13 Farmacia e farmacia industriale<br/> LM-17 Fisica<br/> LM-18 Informatica<br/> LM-22 Ingegneria chimica<br/> LM-23 Ingegneria civile<br/> LM-24 Ingegneria dei sistemi edilizi<br/> LM-25 Ingegneria dell'automazione<br/> LM-26 Ingegneria della sicurezza<br/> LM-27 Ingegneria delle telecomunicazioni<br/> LM-29 Ingegneria elettronica<br/> LM-30 Ingegneria energetica e nucleare<br/> LM-31 Ingegneria gestionale<br/> LM-32 Ingegneria informatica<br/> LM-33 Ingegneria meccanica<br/> LM-35 Ingegneria per l'ambiente e il territorio<br/> LM-40 Matematica<br/> LM-41 Medicina e chirurgia<br/> LM-42 Medicina veterinaria<br/> LM-48 Pianificazione territoriale urbanistica e ambientale<br/> LM-49 Progettazione e gestione dei sistemi turistici<br/> LM-53 Scienza e ingegneria dei materiali<br/> LM-54 Scienze chimiche<br/> LM-56 Scienze dell'economia<br/> LM-60 Scienze della natura<br/> LM-61 Scienze della nutrizione umana<br/> LM-69 Scienze e tecnologie agrarie<br/> LM-70 Scienze e tecnologie alimentari<br/> LM-71 Scienze e tecnologie della chimica industriale<br/> LM-73 Scienze e tecnologie forestali ed ambientali<br/> LM-74 Scienze e tecnologie geologiche<br/> LM-75 Scienze e tecnologie per l'ambiente e il territorio<br/> LM-76 Scienze economiche per l'ambiente e la cultura<br/> LM-82 Scienze statistiche<br/> LM-86 Scienze zootecniche e tecnologie animali<br/> LM/GASTR Scienze economiche e sociali della gastronomia<br/> 3/S (specialistiche in architettura del paesaggio)<br/> 4/S (specialistiche in architettura e ingegneria edile)<br/> 6/S (specialistiche in biologia)<br/> 7/S (specialistiche in biotecnologie agrarie)<br/> 8/S (specialistiche in biotecnologie industriali)</p> |



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|                                       | <p>9/S (specialistiche in biotecnologie mediche, veterinarie e farmaceutiche)</p> <p>14/S (specialistiche in farmacia e farmacia industriale)</p> <p>20/S (specialistiche in fisica)</p> <p>23/S (specialistiche in informatica)</p> <p>27/S (specialistiche in ingegneria chimica)</p> <p>28/S (specialistiche in ingegneria civile)</p> <p>29/S (specialistiche in ingegneria dell'automazione)</p> <p>32/S (specialistiche in ingegneria elettronica)</p> <p>34/S (specialistiche in ingegneria gestionale)</p> <p>35/S (specialistiche in ingegneria informatica)</p> <p>36/S (specialistiche in ingegneria meccanica)</p> <p>38/S (specialistiche in ingegneria per l'ambiente e il territorio)</p> <p>45/S (specialistiche in matematica)</p> <p>47/S (specialistiche in medicina veterinaria)</p> <p>50/S (specialistiche in modellistica matematico-fisica per l'ingegneria)</p> <p>61/S (specialistiche in scienza e ingegneria dei materiali)</p> <p>62/S (specialistiche in scienze chimiche)</p> <p>64/S (specialistiche in scienze dell'economia)</p> <p>68/S (specialistiche in scienze della natura)</p> <p>69/S (specialistiche in scienze della nutrizione umana)</p> <p>74/S (specialistiche in scienze e gestione delle risorse rurali e forestali)</p> <p>77/S (specialistiche in scienze e tecnologie agrarie)</p> <p>78/S (specialistiche in scienze e tecnologie agroalimentari)</p> <p>79/S (specialistiche in scienze e tecnologie agrozootecniche)</p> <p>81/S (specialistiche in scienze e tecnologie della chimica industriale)</p> <p>82/S (specialistiche in scienze e tecnologie per l'ambiente e il territorio)</p> <p>83/S (specialistiche in scienze economiche per l'ambiente e la cultura)</p> <p>84/S (specialistiche in scienze economico-aziendali)</p> <p>85/S (specialistiche in scienze geofisiche)</p> <p>86/S (specialistiche in scienze geologiche)</p> <p>92/S (specialistiche in statistica per la ricerca sperimentale)</p> |
| <b>Training period abroad</b>         | Mandatory: minimum 6 months - maximum 12 months   |
| <b>Period in enterprise</b>           | Mandatory for fellowship co-funded by DM 117/2023: minimum 6 months - maximum 18 months   |
| <b>Description of the PhD program</b> | <p>The PhD program in Agricultural, Food and Forestry Sciences (SAAF) embraces numerous research topics in a wide range of scientific fields, spanning the agricultural, food and forestry sectors. The main goal is to train the next generation of students that will improve the efficiency of production processes with particular attention to innovation and sustainability. Topics included within the PhD program are:</p> <ul style="list-style-type: none"> <li>- Agronomy, chemistry and agricultural genetics. Soil-plant relationships, water use efficiency, adaptation of herbaceous and/or tree crops to abiotic stresses, polycultural systems and agrobiodiversity, agricultural genetics and breeding methods, sustainable agriculture, soil chemistry and plant physiology, recycling of agro-industrial biomass for agronomic purposes.</li> <li>- Economics, Appraisal and Policy of Agri-food and Forestry systems. Economic, management and estimation studies of the production, transformation, distribution and consumption of products in the primary sector (food and no-food), analysis of policies and methodologies for the assessment of environmental, economic and social sustainability of agri-food and forestry production processes.</li> </ul>  |





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|                               | <ul style="list-style-type: none"> <li>- Water and territorial planning. Analysis of the quality and management of water resources in agriculture, irrigation systems, analysis and territorial planning of the rural landscape, protection of agricultural and forest soil, hydrology, Geographic Information Systems and remote sensing for the analysis and monitoring of rural systems, construction systems and settlements in rural areas, buildings for agro-industry, construction systems for rural buildings.</li> <li>- Forestry and ecology. Forest ecology, sustainable management and environmental protection, study and modeling of plant growth, impact of climate change, risk and management of forest fires, technological characteristics of wood.</li> <li>- Crop protection. Study of phytopathogenic microorganisms and arthropods of agricultural, food and forestry interest, interactions between plants and harmful phytopathogens/insects, beneficial microorganisms and insects, plant microbiome and sustainable control strategies.</li> <li>- Food technologies and microbiology. Development and optimization of food processes, food packaging, food preservation, food safety, optimization of production processes, production of novel foods and evaluation of shelf-life, composition of food products, analytical methods for monitoring production processes and determination of nutraceutical compounds.</li> <li>- Mechanics and mechanization of biosystems. Engineering approaches applied to the agricultural, food and forestry sectors. Precision systems for the production, conversion, use and save of energy in agro-industrial production systems.</li> <li>- Animal husbandry. Genetic improvement of species of zootechnical interest, enhancement of native breeds, biotechnologies for animal reproduction, nutrition and relationships between food, quality and product safety.</li> <li>- Biodiversity and conservation of vascular flora</li> </ul>   |
| <b>Educational objectives</b> | <p>The main objective of the SAAF PhD program is to train students in advanced scientific and technological disciplines. The program aims at providing basic theoretical and practical skills on analytical and experimental methodologies, that will help students to develop their scientific profile together with problem-solving scientific communication skills. The final objective is to train students on solving the important challenges on the efficiency, quality and sustainability of agricultural and forestry production processes. The SAAF PhD program is designed to be extremely dynamic in order to guarantee the training of professional figures capable of responding to the needs of production systems, proposing solutions in different social and territorial contexts, and in particular, within the Mediterranean area.</p> <p>The SAAF PhD program aims to provide a solid training for researchers, through the acquisition of tools and methodologies typical of the scientific approach. These tools can be primarily used within institutions focusing on both fundamental and applied research (Universities and Research Centers, public and private). In addition, the program also promotes the acquisition of skills that can be used outside academia, for example within agricultural, food, and forestry industries.</p> <p>The PhD program aims to stimulate the development of critical thinking skills and the ability to work within interdisciplinary fields, both in national and international contexts.</p> <p>In particular, the PhD program trains researchers capable of:</p> <ol style="list-style-type: none"> <li>autonomously develop research programs relating to relevant scientific problems;</li> <li>develop and propose public and private research projects on a local, national and international scale;</li> <li>identify research needs and their scientific, social and economic relevance;</li> <li>transfer knowledge through the presentation of research results in national and international contexts and through the implementation of educational activities;</li> <li>develop networking skills with academic and/or private partners operating in their sector;</li> <li>apply interdisciplinary approaches derived from the study of different components of the agri-food and forestry biosystems;</li> <li>knowing how to orient oneself towards scientific qualification and productivity, as essential elements for professional opportunities in research institutions or in other professional fields;</li> </ol> |



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|                                       | <p>h) transfer the research results to potential public and private stakeholders;<br/>e) communicate and disseminate scientific culture nationally and internationally.</p> <p>In addition, PhD students will acquire the ability to develop research products in the form of scientific articles to be published in high-impact international journals (indexed on the Web of Science and/or Scopus platforms), book chapters and/or informative articles necessary to spread knowledge in a context of third mission within the reference territory.</p>   |
| <b>Coherence with NRRP objectives</b> | <p>The SAAF PhD program, due to its multidisciplinary nature that embraces different research themes within agricultural, food and forestry sciences, appears to be strongly consistent with the Italian National Recovery and Resilience Plan (NRRP) aimed at remedying economic damage and social issues caused by the pandemic, creating a post-COVID-19 Europe that is greener, digital, resilient and adapted to present and future challenges. In particular, within the Italian context, the NRRP undertakes to intervene on three "strategic axes" - digitization and innovation, ecological transition, social inclusion - and three "transversal priorities" - gender equality, young people, and Southern Italy issues. The measures are organized along six thematic areas of intervention, the so-called "Missions", organized in 16 Components that collect the individual spending projects. The measures concerning agriculture fall within Mission 2 "Green Revolution and Ecological Transition", in which the components "C1 - Circular economy and sustainable agriculture" and "C4 - Protection of the territory and water resource" are particularly in line with the SAAF PhD program.</p> <p>The PhD program provides advanced training within disciplines increasingly focusing on sustainability of agricultural, food and forestry systems, food security, climate change, nature and biodiversity, biotic and abiotic stress, as well as rural development, landscape planning and green economy. Consequently, this PhD program is linked to Component 1 of the PNRR, which aims to develop a smart and sustainable agricultural/food supply chain - from producer to consumer - reducing the environmental impact of Italian agro-food production, also through the improvement of waste management, the implementation of innovative circular economy strategies and the transition to a "green" supply chain. In this sense, the training and research path developed as part of the SAAF PhD proposal is oriented, also by encouraging research and training agreements with private companies, to the analysis of the efficiency of the agricultural and agri-food sector starting from the business context up to the size of the supply chain and local system. Other relevant aspects concern the introduction of advanced techniques to improve the mechanization, the optimization of agri-food processes in terms of sustainability, the reduction of waste and their reuse in the supply chains also for energy purposes, the minimization of food waste and the analysis of consumer preferences.</p> <p>Component 4 "Protection of the territory and water resource" is also well characterized in the context of the SAAF PhD program, involving the safety of the territory and the mitigation of hydrogeological risks (with prevention and restoration interventions), the safeguard of green areas, biodiversity, and water resources. The consistency with this component of the NRRP is achieved through advanced training activities related to agricultural hydraulics and hydraulic-forestry arrangements, management of water resources, agricultural mechanization, precision agriculture, agri-food installation systems, the energy use of biomass, the improvement of energy efficiency within agroforestry systems, the innovation and sustainability in the design of agricultural buildings, the eco-compatibility of building materials, the monitoring of the agroforestry territory, the use of territorial information systems for rural and landscape planning and for the protection of agricultural and forest ecosystems from insects and phytopathogenic microorganisms. Particular attention is also paid to rural development issues and the acquisition of tools and methodologies for the analysis and interpretation of integrated local development models, as well as the protection of the quality of life in these territories. Finally, a further element of coherence to both Component 1 and 4 of the NRRP is transversally satisfied by the offer of advanced training courses relating to the deepening and advancement of analysis tools for sustainable development. It includes methodologies and metrics also based on the analysis of the cycle</p> |



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|   | <p>of life of products, processes, and services for the assessment of environmental, economic, and social impacts. It also encourages interdisciplinary research, and the integration of measurement approaches in a context of analysis and interpretation of particularly complex systems such as agricultural ecosystems, food, and forestry.</p>   |
| <b>Job Opportunities</b>                                | <p>Skills acquired by SAAF PhD students will facilitate their hiring as researchers in public or private centers as well as highly qualified technicians and/or managers in companies operating in the primary sector and in the management of the environment. They may also act as manager in processing companies. Agribusiness is a driving sector for the country's economy with a positive growth trend, characterized by high quality products, sustainability and territorial identity. To support high-quality productions, the support of technicians capable of providing answers and solutions to problems and planning research and development projects is essential. In the context of forest and territorial planning, increasing importance is given to the so-called "sustainable forest management", also aimed at improving the multifunctionality of woods and forests through a continuous advancement of the scientific research.</p> <p>Graduate doctors will be able to enter areas requiring skills for the production, marketing, technological innovation, and distribution processes, as well as for the management and valorization of forest and wildlife resources. It will find space in private production companies (agri-food production, processing, and import-export companies), research centers, other organizations (Parks, Hospitals, Protection Consortia, Certification Bodies), non-governmental institutions focusing on sustainable development and in spin-off activities linked to research organizations. Finally, the training courses will aim at stimulating the entrepreneurial spirit of graduating students to encourage the creation of new companies with a high content of technological innovation or, in general, to enhance ideas possibly born during the PhD program through their patenting and/or the development of spin-offs and/or startups.</p> |
| <b>Documents to be attached to the application form</b> | <p>Candidates must upload the following documentation on the GOMP platform when submitting their application:</p> <ul style="list-style-type: none"> <li>a) <b>A research project</b></li> <li>b) <b><i>Curriculum Vitae</i></b></li> <li>c) <b>Copy of the identity document.</b></li> <li>d) <b>Self-certification of the degree diploma</b> pursuant to the D.P.R. 445 of 28 December 2000.</li> </ul> <p>Only for non-EU Candidates:</p> <p>The foreign qualification may be declared admissible by the Evaluation Board, solely for the purposes of admission to the selection procedure. <b>The degree certificate must contain the study plan and the exams taken with the relative marks.</b> Additional documents deemed useful for the purpose of assessing the suitability of the qualification may be attached. If the certificate and other documents are drawn up in a language other than Italian, English, French, Spanish or German, it must be translated and legalized by the Italian Embassy or Consulate in the country of origin.</p>  |