## PHD PROGRAM IN

**“ENGINEERING FOR ENERGY AND ENVIRONMENT”**

<table>
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<th>Department</th>
<th>University of Tuscia - Dipartimento di Economia e Impresa (DEIM) in collaboration with Dipartimento di Scienze Agrarie e Forestali (DAFNE)</th>
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<td>Cycle</td>
<td>XXXVII</td>
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<tr>
<td>Coordinator</td>
<td>Prof. Danilo Monarca</td>
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### Program duration

3 years: 1 January 2021 – 31 December 2024

### Program objectives

The PhD program in Engineering for Energy and Environment aims to provide a high level of training to a select number of young graduates to make them competitive on a national and international level in private companies with high technological contents, research centers and universities. The main objective of the program (which is structured in two curricula, Energy and engineering systems and Biosystems and environment) is to provide an interdisciplinary view of engineering problems in the energy and environment scientific areas, characterized by a high technological development. The research activities will be devoted to the study of new engineering solutions, novel processing techniques and innovative research methodologies, with a focus on their technology transfer. Students will be engaged in training activities and scientific research in the program subjects, with particular reference to technologies for thermonuclear fusion, energy conversion processes, energy storage, environmental issues, innovations in the fields of mechanical engineering, also in agriculture, and of sensors, biosystems and agricultural issues, with regard to primary production and environmental aspects. The work of the PhD students will be coordinated by the members of the board already active in national and international industrial collaborations and research projects, in innovative and relevant topics, such as hydrogen technologies, renewable energy, biomass, biosystems and thermonuclear fusion.

### No. of positions

<table>
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<th>Total places</th>
<th>2</th>
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<td>Places with scholarships</td>
<td>2</td>
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### No. of scholarships

#### Curriculum “Energy and engineering systems”

- no. 1 scholarship funded by DTT S.c.a.r.l.
  - Topic: “MHD Equilibrium and stability, with emphasis on disruptions for DTT experiment considering Physics and Engineering aspect”

- no. 1 scholarship co-funded by Convenzione Comune di Civitavecchia, Università degli Studi della Tuscia, Fondazione Cassa di Risparmio, Consorzio Università per Civitavecchia and the University of Tuscia
  - Topic: “Economic and Industrial models for a sustainable life-cycle of batteries”
Application to the public competition is open to all, regardless of age and citizenship, who, by the date this call expires, possess one of the qualifications listed below:
- an Italian “laurea specialistica” degree, obtained according to the Ministerial Decree n. 509/1999;
- an Italian “laurea magistrale” degree, obtained according to the Ministerial Decree n. 270/2004;
- an Italian equivalent university degree obtained under the Italian regulations previously in force, the time-span of which being no less than 5 years;
- a foreign university degree equivalent to those mentioned above. Admission is also open to university students who will finish their MS degree by October, 31th, 2021. In such cases admission will be “conditional”.
For graduating applicants, the score reserved for the graduation evaluation will be replaced by the evaluation of the average of the exams.
Self-certification (or certification in case of Non-EU students) should state the name of the awarding University, award date, grade and type of qualification (“vecchio ordinamento”, “Specialistica”/“magistrale”) and a copy of a valid identity document.
Candidates who do not meet the admission requirements at the time of submitting their application must indicate the date by which they expect to obtain the required qualification.

Evaluation of candidates (Maximum score: 80 out of 80)

Assessment of the English Language Knowledge.
Language for the examination: Italian or English
The evaluation of qualifications is preliminary to the oral exam. The score obtained by candidates after the evaluation of their qualifications will be added to the score of the oral examination. The results will be published on the Tuscia University website (www.unitus.it) at the section of “Didattica” > “Dottorati di Ricerca”
Together with the application form, candidates should submit a research project, within the themes of Ph.D., up to a maximum of 5 pages, which must be written in Italian or English. The research project will be discussed during the oral exam.

Evaluation of academic qualification (Maximum score: 20 out of 80)

Master’s thesis: max 5 points
University career (exams taken with the relative grades and final grade): max 4 points
Research and/or study activities in foreign institutions: max 2 points
Professional experiences and other qualifications that each candidate considers useful: max 4 points
Research project submitted by the candidate: max 5 points
Before of the oral exam, the evaluation of academic qualification results will be published on the Tuscia website www.unitus.it (section “Didattica” > “Dottorati di Ricerca”).
| **Evaluation of the oral exam (Maximum score: 60 out of 80)** | Oral exam: maximum score 60 out of 80 points  
The minimum score for a positive oral exam will be at least 40 out of 80 points.  
The foreign language subject to verification will be English. |
| **Topics of the oral examination** | The oral test, aimed at ascertaining the candidate aptitude for scientific research, will focus on the discussion of issues related to the PhD program topics and the research project presented by the candidate. The oral exam will include a verification of the English language knowledge based on reading and translation of sections of a scientific text. |
| **Exam dates and locations** | The timetable for the exams will be published in the section "Didattica>Offerta post lauream>Dottorati di Ricerca" of the University's website (www.unitus.it) within the October 31, 2021 |
| **Contact to information** | Contacts of the course:  
Prof. Danilo Monarca e-mail: monarca@unitus.it  
Prof. Giuseppe Calabrò e-mail: giuseppe.calabro@unitus.it |