



Dottorato di Ricerca in Ingegneria per l'Innovazione e lo Sviluppo Sostenibile Doctoral research (PhD) programme in Engineering for Innovation and Sustainable Development

School of Engineering, University of Basilicata, Potenza (Italy)

Short presentation of the programme

The main objective of the PhD programme in Engineering for Innovation and Sustainable Development (*Ingegneria per l'Innovazione e lo Sviluppo Sostenibile*) at University of Basilicata is to train researchers of high scientific qualification, able to contribute to the development and implementation of innovative, efficient, and socially sustainable models of development aimed at protecting the environment and the territory.

The PhD programme is organized into three *curricula*/specializations:

- Methods and technologies for environmental monitoring and protection
- Analysis and prevention of natural risks
- Technologies for industry, energy and information

The following academic disciplines and groups are involved in the three *curricula*:

Curriculum: Methods and technologies for environmental monitoring and protection

Discipline (code and name)	Group (code and name)	Percentage
ICAR/01 – Hydraulics	08/A – Landscape and Infrastructural Engineering	60%
ICAR/02 – Hydraulic Structures, Maritime Engineering and Hydrology		
ICAR/03 – Sanitary and Environmental Engineering		
ICAR/20 – Urban and Regional Planning		
ICAR/22 – Real Estate Appraisal		
ING-IND/22 – Materials Science and Technology	09/D – Chemical and Materials Engineering	10%
FIS/01 – Experimental Physics	02/A – Physics of Fundamental Interactions	25%
FIS/06 – Physics of the Earth and of the Circumterrestrial Medium	02/C – Astronomy, Astrophysics, Earth and Planetary Physics	
GEO/05 – Engineering Geology	04/A – Earth Sciences	5%

Curriculum: Analysis and prevention of natural risks

Discipline (code and name)	Group (code and name)	Percentage
ICAR/07 – Geotechnics	08/B – Structural and Geotechnical Engineering	85%
ICAR/08 – Structural Mechanics		
ICAR/09 – Structural Engineering		
GEO/10 – Solid Earth Geophysics	04/A – Earth Sciences	15%



Curriculum: Technologies for industry, energy and information

Discipline (code and name)	Group (code and name)
ING-IND/08 – Fluid Machinery	09/C – Energy, Thermo-mechanical and Nuclear Engineering
ING-IND/10 – Thermal Engineering and Industrial Energy Systems	
ING-IND/18 – Nuclear Reactor Physics	
ING-IND/13 – Applied Mechanics	09/A – Mechanical and Aerospace Engineering and Naval Architecture
ING-IND/14 – Mechanical Design and Machine Construction	
ING-IND/17 – Industrial Mechanical Systems Engineering	09/B – Manufacturing, Industrial and Management Engineering
ING-IND/16 – Manufacturing Technology and Systems	
ING-IND/31 – Electrical Engineering	09/E – Electrical and Electronic Engineering And Measurements
ING-INF/01 – Electronic Engineering	
ING-INF/02 – Electromagnetic Fields	09/F – Telecommunications Engineering and Electromagnetic Fields
ING-INF/03 – Telecommunications	
ING-INF/04 – Systems and Control Engineering	09/G – Systems Engineering and Bioengineering

Practical information

Doctoral programmes are postgraduate university programmes providing specialised training to those who wish to undertake advanced research. The Italian PhD process consists mostly of original research work, with some taught courses – mainly in the first year.

The PhD pathway includes the definition and development of a research project – through advanced training programmes and individual in-depth studies – and is concluded with the production of a thesis based on original work. Attending the PhD programme implies an exclusive and full-time commitment.

The procedure for the selection of candidates consists of a public competition. A call for application is published every year, usually between July and August. The examination of candidates is conducted through the assessment of titles, supplemented by a written test or interview or both. The candidate may also be asked to present a research project to be attached to the application.

The PhD programme is organised and managed by a coordinator and a teaching board consisting of professors and other qualified experts. A supervisor (called ‘tutor’ in Italy) is assigned to every PhD candidate. The supervisor is the person with whom the candidate will be working closely to conduct research and who will be monitoring the candidate’s progress. Examinations are also scheduled by the whole teaching board once per year.



The duration of the PhD programme is 3 years. The programme normally starts on the 1st of November and ends 3 years later, on the 31st of October. The gross annual amount is approximately 15,000 € which is subject to national taxes, therefore the net annual amount is approximately 13,000 €. Registration fees, whose amount is specified in the call for application (available in English at <http://portale.unibas.it/site/en/home/study-at-unibas/phd-programmes.html>), are also due to University of Basilicata.

After the end of the PhD programme, normally in the subsequent month, the candidate is expected to submit his/her thesis. The thesis will undergo review by a minimum of two external examiners to judge its quality and contribution to the chosen research topic. If the review is positive, the thesis will qualify for public defence. Otherwise, additional six months of corrections will be recommended before a second review will take place. The Doctoral degree is awarded on passing the final defence in front of an external committee.