Dottorato di ricerca in SCIENZE E INGEGNERIA PER L'AMBIENTE E LA SOSTENIBILITA'

Ciclo n. 41

Coordinatore: Vicinanza Diego

DIPARTIMENTO DI INGEGNERIA

Università degli Studi della Campania "Luigi Vanvitelli"

Configurazione	
Il dottorando deve presentare il Piano Formativo contenente le attività per tutti e tre gli anni di corso	Si
Il dottorando deve presentare il Piano Formativo contenente solo le attività dell'anno in corso	No
Data entro cui il dottorando può presentare il Piano Formativo	-
Numero massimo di modifiche al Piano Formativo che il dottorando può richiedere ogni anno	-

Vincoli sul numero totale di CFU previsto per Tipologia di attività e anno

Anni	Attività Didattiche Programmate	Altre Attività Didattiche	Attività Formative di Ricerca
I ANNO	20.0 - 40.0 CFU	0.0 - 15.0 CFU	20.0 - 40.0 CFU
II ANNO	6.0 - 12.0 CFU	0.0 - 15.0 CFU	40.0 - 50.0 CFU
III ANNO	0.0 - 8.0 CFU	0.0 - 15.0 CFU	35.0 - 60.0 CFU

Categoria di default - Attività Didattiche Programmate

Configurazione della categoria per anni di riferimento: I, II, III

Numero attività obbligatorie	**0**
Numero minimo di CFU	**0.0**

Aggiunta attività presunte **No**

Aggiunta attività proposte **No**

Denominazione insegnamento	Descrizione	Docenti	Curriculum di riferimento	Periodo erogazione	Verifica finale	Obblig.	CFU	Ore	Anni
3D image-based survey and reverse engineering	The course contributes to the Higher Education of the researcher and/or practitioner interested in mathematically mastering the potential of models from accurate 3D description of reality to design control. Methodologies and techniques for the 3D survey and 2D/3D restitution of the built environment will provide competences and skills to support further investigations and products such as the analysis of sustainable structures and functions, uses, location, design, geometric and material aspects of an artefact. At the end of the highly specialized training course, participants will be able to design and carry out a survey campaign using the Structure from Motion technique, manage the data, extract point clouds, derive orthophotos, sections and textured models to reproduce another object that has a similar or better function, or one that is more suited to the context (fitting); or an analogue that can interface with the original. The knowledge acquired will be spendable in the field of environmental, civil - construction engineering: Plant/structure optimization; Energy efficiency; AR/VR/XR . The training course marks the first highly professional stage for advanced 3D surveying.	Rossi Adriana Gonizzi Barsanti Sara		February-May 2026	No	No	6.0	24	I II
ADVANCED METHODS FOR THE ANALYSIS OF ENVIRONMENTAL MATRICES	The purpose of the course is to provide an overview of advanced methodologies that can be used in the environmental field for the analysis of solid, gaseous or liquid matrices. During the lessons for each proposed methodology, technical information will be provided on the principles of instrumental operation or the methodological approach, details on how to sample and prepare samples of the matrices, examples of analytical results and data processing, practical examples of the use of the methodology to address specific questions in the field of environmental analysis. The following specific topics will be presented by experts: Prof. Carmine Lubritto (3 hours): Isotopic analysis for environmental and archeometric applications. Fundamentals of isotope physics. Isotope	Castaldi Simona Salvestrini Stefano Iovino Pasquale Battipaglia Giovanna Lubritto Carmine Tedesco Dario		June-July 2026	No	No	4.0	16	I II

	fractionation. Conventional and accelerator mass spectrometry. Environmental processes and isotope marking. Methods of sample preparation and measurement processes. Applications of isotopic methodologies to environmental, archaeometric processes and in the agri-food sector. Prof. Giovanna Battipaglia (3 hours): Tree-ring stable isotopes analysis for environmental monitoring, from paleoclimatology to forest management and anthropogenic impacts on forest growth. The lesson will also discuss the combined use of isotope fractionation, xylogenesis and crossdating, as well as methodological topics like sampling, analysis and standardization. Study cases related to forest response to disturbances will be discussed. Prof. Pasquale Iovino (3 hours): Introduction to water pollution and control. Wastewater treatment by adsorption and ion exchange. Advanced oxidation processes: Sono- and Electro-chemical treatment. Case studies on wastewater treatment with advanced electrochemical oxidation processes. Prof. Salvestrini Stefano (2 hours): Advanced techniques for soil decontamination from organic compounds. Examples and theory on the use of advanced oxidation techniques to digest and degrade organic contaminants from soil matrix will be presented. Prof. Simona Castaldi (2 hours): Estimate of gas exchange terrestrial and water ecosystems for biogeochemical cycling. Gas flux monitoring, principles, main techniques, techniques based on gas chormatographic analysis and other advanced analysers. Prof. Tedesco Dario (3 hour) : Advanced monitoring of fluids: water and gas. The lesson will presented the most adavanced technique to sample and monitor fluids, for the gas analysis, including water and gas compartments. Examples of the application of the specific techniques will be provided for different environments, from deep waters to geochemical degassing sampling points.								
Computational solid and structure mechanics: Finite elements and Boundary elements.	The course is aimed to give a first seminar overview on the discretization and numerical methods to formulate and solve the mathematical description of phenomena comprised into the word “structural behavior”. The main perspective of the course is founded on the classical “illuministic” and “polytechnic” vision namely the rational approach to the science. In particular, the “mechanics”.	Minutolo Vincenzo Zona Renato		March-April 2026	No	No	5.0	20	I II

DATA MANAGEMENT	Data are now recognized as a major organizational resource to be attained and managed like other assets such as land, labour and capital. The ability to structure, access, manage and leverage this valuable resource is becoming more and more critical to all organizations, large or small, public or private. This course is designed to present the fundamental concepts and theories in data management, in order to promote their application to research activities and professional practice. An examination of Database Management Systems, database architectures, the role of data in decisional processes and the processes that guide the data lifecycle will be a focus of the course. Due to the importance of personal data in scientific research, it is mandatory to include in the course the main concepts about personal data protection regulation.	Di Nardo Armando		February-March 2026	No	No	4.0	16	I II
Elastic Moments of Area for Functionally Graded 2D and Axisymmetric Domains	A Functionally Graded Material (FGM) refers to a material whose composition and structure gradually change throughout its volume, resulting in varying material properties that serve specific functions. The properties of an FGM depend on its spatial position within the structure. It is important to note that traditional Solid Mechanics equations assume the use of homogeneous materials with uniform properties, so extensive research has been conducted to address the challenges posed by FGMs. In this course, a general methodology for computing the elastic moments of FG 2D and axisymmetric domains having arbitrary shape is shown. As a result, the main objective of the course is to introduce a practical approach, computationally more effective than Gauss quadrature method, to accurately assessing the geometric properties of such domains characterised by complex distributions of density and Young modulus.	Ruocco Eugenio	Risorse Naturali, Ambiente, Agricoltura E Alimentazione Ingegneria Civile Sostenibile Economia Circolare Di Beni E Servizi	Jan 2026	No	No	4.0	16	I II
English for Academic Purposes Honing communication skills for STEM specialists Module 1 “Enhancing receptive skills”	This module will be offered before (in terms of time of delivery) the obligatory module so as to ensure more favorable conditions for the achievement of the main objective of the second obligatory module . The first module is meant to cater to the needs of students who have not fully reached B2 level as described in the CEFR (Common European Framework of Reference for Languages). For this reason , students who can produce a B2 certification need not attend the first module but may do so if they think they might benefit from additional exposure to	Nuzzo Giuseppina	Risorse Naturali, Ambiente, Agricoltura E Alimentazione Ingegneria Civile Sostenibile Economia Circolare Di Beni E Servizi	March-April 2026	No	No	7.0	28	I II

	authentic language as used in an academic and/ or professional context. The main objective of module 1 is to boost receptive skills : listening and reading . Listening skills : overall listening, listen to interlocutor , listen in discussion, listen in audience , listen to announcements . Reading skills : overall reading , read for orientation, read info & argument, read instructions, read scientific literature , read correspondence.								
English for Academic Purposes Honing communication skills for STEM specialists Module 2 “Enhancing productive skills”	The objective of module 2 is to improve speaking and writing skills in the context of producing scientific and/or technical papers , delivering presentations and interacting at conferences. Speaking skills : conversation, discussion , information exchange, transactions , descriptions, arguing a case, presentations, summarizing, spoken interaction , compensation (paraphrasing when lacking specific vocabulary) , repair (being aware of and being able to self correct mistakes which have led to misunderstanding) . Writing skills : overall writing, reports (info& argument) , correspondence . The expected result is to exhibit the skills with a sufficient range of vocabulary, adequate precision , accuracy and fluency so as to sustain communication with a professional/academic international audience and interlocutor	Nuzzo Giuseppina	Risorse Naturali, Ambiente, Agricoltura E Alimentazione Ingegneria Civile Sostenibile Economia Circolare Di Beni E Servizi	May-June 2026	No	Si	8.0	32	I II
ENVIRONMENTAL ASSESSMENT AND PERMITS	Provide indications for the definition of the correct authorization procedures in the environmental field. Transfer the knowledge of tools, methodologies and procedures for the presentation and evaluation of authorization requests by defining the necessary procedures and specialist studies. Analysis of the environmental compatibility of works and production activities.	Panico Antonio Musmarra Dino Chianese Simeone		July-September 2026	No	No	4.0	16	I
Fundamentals of acoustical oceanography	Objectives: To provide students with fundamental knowledge on acoustical oceanography, including a) physics of underwater sound and sound propagation, b) physical oceanography, c) solution of the sonar equation to inform underwater sound propagation models, d) design of acoustic monitoring experiments and methods.	Borsani Junio Fabrizio		February-May 2026	No	No	4.0	16	I II
Fundamentals of wind engineering	Objective of the course is to provide Ph.D. students with basic knowledge of the subjects underlying Wind Engineering applications, e.g. wind actions and effects on civil structures, wind energy, pollutant dispersion in the atmosphere, fire propagation. The topics dealt with in the	Ricciardelli Francesco D'Assisi		Spring-Summer 2026	No	No	4.0	16	I II

	course are transversal, therefore of potential interest for scholars in Civil, Environmental and Energy Engineering. The course covers selected topics on the atmospheric circulation and on meteorology, on the fluid dynamics of the Atmospheric Boundary Layer, on mean and extreme wind climate analysis, on bluff body aerodynamics; basic concepts about random processes and random vibrations are also given								
Geochemical techniques for the exploration and exploitation of geothermal energy and critical minerals	As a local, scalable, most stable and reliable source of renewable energy, geothermal is becoming pivotal for energy systems, providing power, heat and thermal storage. At the same time, geothermal systems open new routes to valorize critical minerals of strategic value, lithium particularly: these can be in fact produced from naturally occurring geothermal fluids with a net zero carbon footprint, the geothermal power being the renewable power source for their recovery or even production at different commercial and industrial-grades. Among EU countries, Italy shows a large extractive potential from fluids of both geothermal and mineral interest. To pursue joint geothermal-mineral strategies, we must: 1) identify and promptly characterize the useful and profitable sites: geochemical techniques allow proving the potential of hidden (or blind) geothermal reservoirs, which do not show appreciable signs of their presence at surface. 2) define methods for metal/mineral removal and recovery from dep fluids when at surface and on the other side favor their transport to surface. Geochemical techniques provide indicators about the thermo-baric conditions of the reservoirs, their chemical characterization and, most importantly, allow defining their potential and tracking their evolution via the study of water-gas-rock interaction based on reaction path modelling. Overviews will be also provided about the risks associated with fluid-related activities in reservoir exploitation, including induced seismicity and its monitoring.	Moretti Roberto		March - April 2026	No	No	4.0	16	I II
HYDROLOGICAL HAZARDS AND EARLY WARNING SYSTEMS	The course aims at framing the problems of assessing the geo-hydrological hazard and geo-hydrological risk with an approach based not only on cartographic and historical information (susceptibility estimation, i.e. static probability), but through the "monitor and model" approach (i.e., temporal dynamic probability). An overview of how hydrologic systems are affected by both long- and short-term meteorological	Greco Roberto Santonastaso Giovanni Francesco Di Nardo Armando		June-July 2026	No	No	4.0	16	I

	forcing, and how process-based modeling informed by field monitoring can help to identify the major hydrological controls of catchment and hillslope response to precipitation will be given, and the case of a real catchmentwill be presented, where intense field monitoring activities have been carried out and mathematical models with different degrees of complexity have been developed to assess landslide and debris flow hazard. Finally, the students will be guided to develop a practical exercise on hydrologic hazard mapping.								
Innovative techniques and methods for the seismic protection of structures	This course provides an integrated overview of advanced approaches for assessing and protecting structures against earthquakes. It covers both the seismic evaluation of existing structures and the design of new structures using base isolation and energy dissipation technologies. Students will develop competencies in nonlinear structural analysis, capacity-based assessment, and the modelling of reinforced concrete, steel, and masonry systems. The course also introduces the principles, devices, and design methods associated with seismic isolation and supplemental damping, including friction pendulum and elastomeric bearings as well as dissipative braces. Practical skills are strengthened through the use of advanced numerical tools and the study of a complete structural design based on isolation or added-damping systems, from modelling to verification and performance assessment.	Ferraioli Massimiliano	Risorse Naturali, Ambiente, Agricoltura E Alimentazione Ingegneria Civile Sostenibile Economia Circolare Di Beni E Servizi	May-June2026	No	No	4.0	16	I II
Isotope Physics and Methodologies	Summary: During the course the most important issues regarding the isotope sciences will be covered. In details, among the others, the most important issues such as i) a general overview of the isotope nomenclature for both stable and radioactive nuclides; ii) the most important isotope fractionation mechanisms; iii) the approaches and methodologies utilized to address research issues will be covered with a special emphasis onto Mass Spectrometry and data reduction/analysis. AIMS: Provide a general basis for the production and interpretation of isotope data in the applied sciences framework.	Lubritto Carmine Marzaioli Fabio Di Cicco Maria Rosa		April-July 2026	No	No	3.0	12	I II
Life Cycle Assessment for Goods and Services	The aim of the course is to provide an essential but comprehensive introduction to the metrics of environmental performance of a production process for a good or service. The focus will be mainly on the approach of Life Cycle Thinking and the tools of Life Cycle Assessment (of	Ardolino Filomena Arena Umberto		January-February 2026	No	No	4.0	16	I

	environmental, economic and social aspects) and Material and Substance Flow Analyses.								
Life Cycle Assessment in AEC sector: Environmental assessment of buildings and building components	Provide the necessary tools to understand the role of LCA in the construction sector and the benefits derived from its application. Offer the basics for conducting an LCA study applied to the construction sector (regulations, databases, and inventory analysis).	Mollo Luigi Agliata Rosa		June-July 2026	No	No	3.0	12	I II
MARINE RENEWABLE ENERGY	The course aims at providing a guide into the field of ocean energy utilization. The idea for the course has been shaped by the development, research, and teaching that we have carried out at the Wave Energy Research Group at University of Campania over the past decades. It is our belief and experience that it would be useful in order to enhance the understanding of the sector for a wide variety of potential students. The course will introduce and describe the processes that characterize the oceanic environment, as wind, tide, wave and currents, their loads and interaction with the structures, the assessment of the marine renewable energy (currents and waves) and basics on the device's typologies. Principles of energy conversion from the sea: Wind, Waves, Tidal Range (tidal rise and fall), Tidal Currents, Ocean Currents, derived from wind-driven and thermohaline ocean circulation, Ocean Thermal Energy Conversion (OTEC), Salinity Gradients (osmotic power), Wave Energy conversion (WEC) typologies; Sea Current turbines	Vicinanza Diego		March - April 2026	No	No	6.0	24	I
Monitoring systems for landslide disaster prevention	The course is aimed at providing the skills necessary to identify landslide-prone urbanized areas and to select the most effective monitoring systems for reducing landslide risk. The basic knowledge of stability analysis of both natural and made-man slopes, as well as identifying predisposing and triggering factors that contribute to slope movement will be given, first. Then, conventional and innovative devices and techniques for monitoring landslides and structures interacting with them will be explored, highlighting their respective advantages and limitations. Finally, through hands-on laboratory activities and visits to fully instrumented monitoring sites, students will develop critical abilities in selecting and setting up the most appropriate monitoring systems for various landslide scenarios.	Damiano Emilia De Cristofaro Martina	Risorse Naturali, Ambiente, Agricoltura E Alimentazione Ingegneria Civile Sostenibile Economia Circolare Di Beni E Servizi	January-March 2026	No	No	6.0	24	I II

OPTIMIZATION METHODS FOR THE MANAGEMENT OF WATER RESOURCES	The course aims at providing the students with notions relating to management and operational issues, with the related economic aspects, as part of the optimal management of water resources facing them with modern optimization techniques.	Greco Roberto Santonastaso Giovanni Francesco Di Nardo Armando		June-July 2026	No	No	4.0	16	I
PATENT AS AN INVENTIVE RESEARCH ACTIVITY Module A - Fundamentals of Intellectual Property and Patenting Strategies for Research Enhancement and Technology Transfer	The course introduces the fundamental principles of intellectual property and patenting strategies applied to the enhancement of research and technology transfer (TT), with the goal of translating scientific knowledge and results into concrete applications through IP protection. The course provides both theoretical and practical tools to understand and manage patents for industrial inventions, examining their requirements, types, procedural steps (national and international), and legal implications. Particular attention is given to patent databases (Espacenet, WIPO, USPTO) and prior art searches, which are essential for consciously building effective protection strategies. Practical exercises will guide participants in identifying the patent potential of their research, fostering its valorization within technology transfer processes.	Capece Assunta	Risorse Naturali, Ambiente, Agricoltura E Alimentazione Ingegneria Civile Sostenibile Economia Circolare Di Beni E Servizi	June 2026	No	Si	3.0	12	I II
PATENT AS AN INVENTIVE RESEARCH ACTIVITY Modulo B - Tools and Practices for Drafting Patent Applications for Industrial Inventions	The course provides practical tools and operational methodologies for drafting a patent application for an industrial invention in accordance with the requirements of national and international patent offices. The course is designed to transfer both technical and drafting skills, enabling participants to correctly structure all the key components of a patent document, from the technical description to the claims. Through the analysis of real examples, the use of official guidelines (EPO, USPTO), and hands-on workshops, participants will learn how to transform a research result into a legally sound and technically clear text. The approach is focused on practical patent writing, with emphasis on drafting, revision, and filing simulation.	Capece Assunta	Risorse Naturali, Ambiente, Agricoltura E Alimentazione Ingegneria Civile Sostenibile Economia Circolare Di Beni E Servizi	July 2026	No	No	3.0	12	I II
Pile foundations under mechanical and thermal loads: analysis and innovative design	Piles are deep foundations having the role of transferring the loads from the structure to the deep, and thereby stronger, soil layers. If they are equipped with closed loop pipes attached to the steel rebars, in which a heat carrier fluid is circulated thanks to a heat pump, piles also gain	Iodice Chiara		April-May 2026	No	No	3.0	12	I II

	the role of heat exchangers with the soil allowing the heating and cooling of buildings in a sustainable manner by exploiting the renewable geothermal energy. In this framework, the course is intended to cover the main features concerning the behaviour of pile foundations under different loading conditions, including temperature variations. The starting point will be the performance of the single pile which is analysed in terms of load-displacement response due to mechanical as well as to thermal loads via analytical and numerically-based approaches. Design issues are then discussed for pile groups subjected to generalised loading conditions.								
Research and innovation through national and international standard references	The course will focus on the analysis and study of standard references as "tools" for innovation and support to research activities, starting from the categorisation of the standards issued by the different national, european and international standardization organisations. The main standard references related to environmental management and protection systems will be analyzed. The main requirements useful for obtaining certifications of products and processes in compliance with EU safety, health and environmental protection requirements will also be introduced. Examples of standards in different areas of research with particular reference to production processes aimed at ensuring the safety and well-being of user-operators in industrial settings will also be given. The PhD students will be involved in research activities with respect to the specific objectives of the PhD course through practical exercises aimed at the framework of the standard references applicable to the different subject areas through the use of the main UNI, CEN and ISO platforms.	Laudante Elena		May-June 2026	No	No	6.0	24	I II
SOIL MICROBIAL COMMUNITY DIVERSITY BY MOLECULAR TECHNIQUES	The course focuses on the application of denaturing gradient gel electrophoresis (DGGE) to study soil microbial diversity and its role in soil health evaluation. DGGE is a widely used molecular technique for microbial community analyses that allows a valuable characterization of community diversity as well as changes in community structures due to several stress/disturbance factors, such as pollution, fire, land use change and climate change. The course will introduce and describe the soil DNA extraction procedures of the soil microbial community, the main PCR protocols required to amplify target genes of specific functional groups (e.g. nitrifies, denitrifies and methanogens), the	Marzaioli Rossana		February-March 2026	No	No	4.0	16	I II

	electrophoresis separation by denaturing gradient, and finally processing and interpretation of the obtained genetic fingerprint.								
STATISTICAL DATA ANALYSIS	The goal is to provide basic knowledge of statistic to analyze experimental data of original researches carried out gathering environmental parameters. Students will gain knowledge about the simple (descriptive and inferential) and multivariate (classification and ordination) statistics used to analyze environmental data. The student will be able to: • Recognize types and characteristics of different environmental variables as well as the meaning of sampling universe, sample, sampling units in an experimental design • Process and manage environmental data using descriptive and inferential statistics as well as multivariate statistics The program intends to describe the most appropriate methodologies to acquire critical capacity towards each instrument in terms of advantages and limitations.	Strumia Sandro		January - February 2027	No	Si	4.0	16	II
Sustainable agronomic practices and stress management	The course focuses on the application of sustainable agronomic practices and stress management to improve crop yield and sustainability. It covers agronomic strategies for managing key abiotic stresses, such as drought and salinity, and explores the role of agricultural genetics in selecting stress-resistant varieties. Through real case studies, participants will evaluate sustainable agronomic management techniques. The course introduces fundamental concepts of plant metabolic profiling and molecular characterization. It guides participants through the analysis of metabolic profiles using HPLC and spectrometry, molecular characterization techniques such as DNA extraction, PCR amplification, and molecular markers, and concludes with the interpretation of the results to assess plant stress responses.	Carillo Petronia Woodrow Pasqualina Fusco Giovanna Marta		February 2026	No	No	4.0	16	I II
Technical and economic aspects of onshore and offshore wind power generation systems	The course aims to frame some issues related to wind generation systems in onshore and offshore environments. Regarding horizontal axis wind turbines in the onshore environment, the effects due to wind loads will be examined, as well as those due to earthquakes, also providing key elements for multi-risk vulnerability analyses. On the other hand, in the case of wind turbine installations in offshore environments, fundamentals, and experimental and numerical evaluations of the dynamic response induced by	Avossa Alberto Maria		May-June 2026	No	No	3.0	12	I II

	wind and wave loads, will be presented. Finally, some techno-economic aspects will be provided aimed at developing feasibility studies for the design of wind farms in an offshore environment.								
Water resources vulnerability in coastal areas	Topic: The course will introduce the hydrogeological characteristics of coastal groundwater systems and the pressures they face. It will provide an introduction to the concept of groundwater vulnerability and the methodologies available to assess it. Additionally, the course will offer a critical analysis of existing open-access databases that can be used to evaluate vulnerability, alongside their application in case studies from around the world. Sommario: Il corso introdurrà le caratteristiche idrogeologiche dei sistemi acquiferi costieri e le pressioni cui sono sottoposti. Verrà presentato il concetto di vulnerabilità delle acque sotterranee e le metodologie disponibili per valutarla. Inoltre, il corso offrirà un'analisi critica dei database open-access esistenti, utili per valutare la vulnerabilità, insieme alla loro applicazione in casi di studio provenienti da diverse parti del mondo.	Busico Gianluigi	Risorse Naturali, Ambiente, Agricoltura E Alimentazione Ingegneria Civile Sostenibile Economia Circolare Di Beni E Servizi	May-July 2026	No	No	4.0	16	I II

Altro - Altre Attività Didattiche	
Qualsiasi attività relativa all'acquisizione di conoscenze	
Configurazione della categoria per anni di riferimento: I, II, III	
Numero attività obbligatorie	**0**
Numero minimo di CFU	**0.0**
Aggiunta attività presunte	**Si**
Aggiunta attività proposte	**Si**

Categoria di default - Altre Attività Didattiche
Configurazione della categoria per anni di riferimento: I, II, III

Numero attività obbligatorie	**0**
Numero minimo di CFU	**0.0**
Aggiunta attività presunte	**No**
Aggiunta attività proposte	**No**

Denominazione attività	Organizzatori	Descrizione	Curriculum di riferimento	Obblig.	CFU	Ore	Anni
Gestione della ricerca e della conoscenza dei sistemi di ricerca europei e internazionali		Strumenti di finanziamento, gestione della ricerca e procedure: il corso comune per la Scuola di Dottorato organizzato dall'Ateneo prevede seminari volti alla presentazione delle differenti tipologie di progetti di ricerca nazionali e internazionali (Horizon, Lite, Prin, etc.), fondi strutturali (FESR, FEAMP, FEASR, etc.), cluster nazionali, cluster regionali, lettura e interpretazione di un bando, cofinanziamento, illustrazione di esperienze di programmi approvati e finanziati, acquisizione di una aggiornata metodologia finalizzata alla redazione di nuove proposte di ricerca con i rispettivi sistemidi finanziamento.		No	1.0	1	I II III
Principi fondamenti di etica, uguaglianza di genere e integrità		L'Ateneo, in collaborazione con con l'Agenzia per la Promozione della Ricerca Europea (APRE), organizza percorsi informativi sui bandi Horizon Europe. Sono presenti moduli su Etica in Horizon e Europe Gender in Horizon Europe. Il dottorandi e le dottorande saranno stimolati alla riflessione sull'orientamento (algenere) della ricerca e il ruolo nei programmi di finanziamento europeo. Sono previsti due moduli di 4 ore (totale 8 ore) comuni a tutti i dottorati.		No	1.0	1	I II III

Altre attività di ricerca - Attività Formative di Ricerca

Qualsiasi attività di ricerca

Configurazione della categoria per anni di riferimento: I, II, III

Numero attività obbligatorie	**0**
Numero minimo di CFU	**0.0**
Aggiunta attività presunte	**Si**
Totale CFU che può essere ottenuto per le attività	Il valore varia tra 1 e 60 in funzione delle attività svolte
Anni per cui è possibile aggiungere attività della categoria	I, II, III

Prevista delibera collegio dei docenti	No
Documentazione che il dottorando deve presentare	-
Documentazione che il supervisore deve presentare	-
Aggiunta attività proposte	**Si**
Totale CFU che può essere ottenuto per le attività	Il valore varia tra 1 e 60
Anni per cui è possibile aggiungere attività della categoria	I, II, III
Prevista delibera collegio dei docenti	No
Documentazione che il dottorando deve presentare	-
Documentazione che il supervisore deve presentare	-

Categoria di default - Attività Formative di Ricerca

Configurazione della categoria per anni di riferimento: I, II, III

Numero attività obbligatorie	**0**
Numero minimo di CFU	**0.0**
Aggiunta attività presunte	**No**
Aggiunta attività proposte	**No**

Tipologia attività	Documentazione che il dottorando deve presentare	Documentazione che il supervisore deve presentare	Prevista delibera del collegio docenti	Descrizione	CFU	Obblig.	Anni
Discussione finale della tesi e conseguimento titolo	TESI APPROVATA DAL TUTOR E REVISORI ESTERNI		No	Discussione finale della tesi e conseguimento titolo	30 - 45	No	III