

PHD COURSE IN	ARCHAEOLOGY, HISTORY AND HUMAN SCIENCES
COORDINATOR	Maria Grazia Melis – mgmelis@uniss.it
TRAINING OBJECTIVES	<p>The main purpose of the Course is to train graduates in advanced research, supporting the increase of knowledge in the disciplines that characterise it, methodological skills, the ability to independently conduct high-level research activities, and the ability to compare and dialogue within the scientific community and with the general public.</p> <p>PhD students will have the concrete opportunity to take part in the numerous scientific activities carried out by the members of the Board and by the scholars who will be called upon to intervene with initiatives of a didactic nature as part of their training. The numerous research activities, in the laboratory and in the field, which are concentrated not only in Sardinia but also in France, Spain, Romania, Tunisia and Lebanon, will be able to count on the active involvement of PhD students. Through a high-level training process, specifically dedicated to refining the critical tools of scientific research, PhD students will be able to familiarise themselves with the methodologies of data collection and processing, up to the realisation of original research paths that will lead them to acquire the skills to publish scientific works in monographic form or in the form of articles for indexed journals.</p>
AREAS OF INTEREST (SSD)	L-ANT/01 L-ANT/02 L-ANT/03 L-ANT/07 L-ANT/08 L-ANT/10 L-ART/01 L-FIL-LET/04 L-FIL-LET/12 L-OR/06 M-FIL/03 M-FIL/06 M-PED/03 M-STO/01 M-STO/02 M-STO/04
METHOD OF EVALUATION	Titles, research project and interview (30+20+50)
CONTEST POSITIONS AND TOPICS RELATED TO SCHOLARSHIPS (by administrative category)	<p>No. 1 fellowship funded on DM 630/2024, in cooperation with Didaschool Theme: Research, scientific dissemination and editorial and multimedia productions in an international perspective: Greek history from the archaic age to Hellenism</p> <p>No. 1 fellowship funded on DM 630/2024, in collaboration with Infinitopuntozero Theme: Which didactics for today's students? Pedagogical reflections and effective teaching strategies</p>

	<p>No. 2 fellowships (1 funded on DM 629/2024, Cultural Heritage and 1 University grant)</p> <p>Themes:</p> <p>1. Tradition and innovation in Mediterranean cultural heritage. Historical, archaeological, literary aspects</p> <p>2. The power of images from prehistory to the contemporary age. Identity, religion, politics, social relations, in public and private, settlement, rural, funerary spaces.</p>
VALID TOPICS FOR PROJECT AND INTERVIEW	The same themes already indicated for the scholarships should be used
INDICATIONS CONCERNING THE RESEARCH PROJECT	The research project must be written in a maximum of 4500 characters including spaces and excluding the bibliography.
DIRECTIONS ON THE ORAL TEST	The interview will take place online

PHD COURSE IN	ARCHITECTURE AND ENVIRONMENT
COORDINATOR	Fabio Bacchini – bacchini@uniss.it
TRAINING OBJECTIVES	<p>The aim of the PhD programme in Architecture and Environment is to train a researcher capable of understanding built spaces and their relationships with the environment and landscape in order to design their management and transformation. In particular, the perspective of the PhD programme is to train new researchers capable of reflecting within action and learning in a self-formative process. The primary objective of the course is to generate new scientists, professionals and entrepreneurs capable of achieving international prominence.</p> <p>The PhD Course promotes a systemic and multidisciplinary approach, in which the contents, objectives and research methodologies are consistent with the individual research topics and are open to an interdisciplinary approach as proposed by the course design. The various disciplines that are part of the doctoral programme aim to work in an innovative and sustainable manner with respect to the challenges of an ever-changing society, dealing with material and immaterial objects in relation to the structures and functions of complex ecosystems.</p> <p>In addition to the basic objectives typical of the third cycle of Higher Education, which envisage the perfect mastery of sources within a disciplinary framework relating to one's research, good writing skills in a scientific and academic context and the ability to transmit scientific results through appropriate forms of communication, the PhD Course in Architecture and Environment has as its peculiar objectives the construction of specific contents relating to a research method that responds to specific themes of investigation of the various disciplines pertaining to the course and the construction of operative methodologies that envisage an analytical-constructive reading parallel to a profound reflection on action. The interoperable components between the different fields, in collaboration with various research organisations and territorial government structures, aim to provide research and training capacities that enable the future PhD to respond to issues of particular complexity and specificity even in non-academic environments, such as private companies and local authorities.</p>
AREAS OF INTEREST (SSD)	AGR/14 BIO/03 BIO/07 GEO/02 GEO/04 GEO/09 ICAR/05 ICAR/08 ICAR/12 ICAR/13 ICAR/14 ICAR/17 ICAR/18 ICAR/19 ICAR/20 ING-INF/05 L-ANT/09 MAT/05

	<p>MED/42 M-DEA/01 M-FIL/02 L-ANT/08 M-FIL/07</p>
METHOD OF EVALUATION	<p>Titles and interview (30+70)</p>
CONTEST POSITIONS AND TOPICS RELATED TO SCHOLARSHIPS (by administrative category)	<p>No. 1 fellowships funded by the University Theme: Enhancement and regeneration of tangible and intangible cultural heritage, revitalisation of places and territories, climate change, environmental conservation and rethinking, ecological transition, cultural and creative industries, new learning spaces: the role of scientific knowledge, philosophical and historical reflection and urban, architectural and design projects.</p> <p>No. 1 fellowship funded on DM 630/2024 in cooperation with the company Leica Geosystems s.p.a. Theme: The research aims to apply survey tools and systems for digitization and representation to novel and emerging fields in relation to contemporary society's new demands.</p> <p>No. 1 fellowship funded on DM 630/2024 in cooperation with the company Gin District s.r.l. Theme: The relationship between food and beverage products and territory: ingredients, production, tradition, identity, narratives, marketing.</p> <p>No. 1 fellowship funded on DM 630/2024 in cooperation with the company Geomars s.r.l. Theme: Development and qualitative improvement of an instrument capable of dating sediments and rocks directly in situ using the luminescence method, to determine the age of sediments, and consequently the climatic/geological events associated with them, also as a function of anthropogenic impact, in Late Quaternary successions of both geologically and archaeologically significant areas.</p> <p>n. 1 place reserved for Foreign Scholars from the Universidade Estadual Paulista "Júlio de Mesquita Filho" Theme: Contribution to actions to optimise the use of natural resources and increase forest productivity in the medium to long term with a view to environmental and socio-economic sustainability.</p>
VALID TOPICS FOR PROJECT AND INTERVIEW	<ol style="list-style-type: none"> 1. Architecture, Urban Studies, and Cultural Heritage 2. Architecture, Complexity, and Society 3. Community Empowerment and Participatory Planning 4. Architecture, Ecology, and Sustainability 5. Ecology, Geology, Pedology, Botany: New Perspectives for Environmental Management

	<ul style="list-style-type: none"> 6. Monitoring of Climate Change for Environmental Conservation 7. Architecture, Space, and Learning Processes 8. Communication Design and Visual and Graphic Sciences 9. Architecture, Structures, and Technology 10. Territory, Dwelling, and Movement 11. Urban Studies, Architecture, and Depopulation 12. Philosophy of Architecture, Environment, and Cultural Heritage
<p>INDICATIONS CONCERNING THE RESEARCH PROJECT</p>	<p>The research project can be written either in Italian or in English (candidates from UNESP are allowed to write it in Portuguese). Research projects should not exceed 5000 characters (including spaces and excluding the list of references) and should be articulated into the following sections: Title (maximum 70 characters); Short research question (maximum 150 characters); Goals; Positioning of the research project with regard to the state of the art in the relevant disciplinary field(s); Methodology; Social and practical implications; Originality.</p> <p>The research project will not receive a separate panel score and will rather be used as a basis for discussion during the interview.</p>
<p>DIRECTIONS ON THE ORAL TEST</p>	<p>The interview can optionally be held online or in-person</p>

PHD COURSE IN	CULTURES, LITERATURES, RIGHTS, TOURISM AND TERRITORY
COORDINATOR	Carla Bassu – carlabassu@uniss.it
TRAINING OBJECTIVES	<p>PhD students in the PhD Course in Cultures, Literatures, Rights, Tourism and Territory will have to:</p> <ul style="list-style-type: none"> - develop a theoretical-critical instrumentation adapted to the complex cultural and social scenario generated by globalisation, going back to its social and linguistic cultural roots, in the context of pluralist democracy; - critically examine the transnational dynamics of today's knowledge society and at the same time oppose the uncritical homologation of contemporary reality, drawing on the cultural wealth of the territory and the memory of the past, also in function of a collaboration with companies, local authorities and communities in the perspective of democratic social order; - increase their linguistic, sociological and literary knowledge with a view to broadening their research horizons and international mobility; - provide skills for the use of new research methods through new technologies; - develop skills and research methodologies in relation to cultural activities linked to the territory with a view to economic enhancement; - develop skills relating to technological tools for analysing spatial data
AREAS OF INTEREST (SSD)	<p>IUS/21 L-ANT/01 L-ART/03 L-ART/06 L-FIL-LET/08 L-FIL-LET/10 L-FIL-LET/11 L-FIL-LET/13 L-LIN/05 L-LIN/10 L-LIN/14 M-FIL/05 M-GGR/01 M-GGR/02 M-PSI/05 SECS-P/13 SPS/07 L-LIN/13 L-ART/04 L-LIN/21 L-LIN/03 L-LIN/12 L-LIN/07 ICAR/06 INF/01 M-PED/02 L-FIL-LET/09</p>
METHOD OF EVALUATION	Titles, research project and interview (30+20+50)
CONTEST POSITIONS AND TOPICS RELATED	No. 1 fellowship funded by the University Theme:

<p>TO SCHOLARSHIPS (by administrative category)</p>	<p>Analysis of the social, cultural and educational dynamics occurring in the Western Mediterranean area during the modern age, with a focus on military education at the turn of the 18th and 19th centuries in Sardinia and Corsica;</p> <p>No. 1 fellowship funded on DM 629/2024, Public Administration Theme: Restorative Justice and Restorative Cities;</p> <p>No. 2 fellowships funded on DM 630/2024 in cooperation with Be Ethical Themes: - Applying human-centric design thinking to exploring user-experience-focused approach to ethics-by-design in artificial intelligence - Regulatory intermediaries in EU digital policy/legislation</p> <p>No. 1 fellowship funded by Regione Autonoma della Sardegna Theme: Teaching Sardinian languages between acquisition and learning. Proposals for the certification of Sardinian and North Sardinian languages</p> <p>No. 1 position without fellowship Theme: Analysis, study and evaluation of the impact of Artificial Intelligence in the contemporary art historical debate: theoretical approaches, methodologies, exhibition and fruition practices of multimedia artefacts realised through machine learning systems and their implications on the intellectual property side.</p>
<p>VALID TOPICS FOR PROJECT AND INTERVIEW</p>	<p>The same themes already indicated for the scholarships should be used</p>
<p>INDICATIONS CONCERNING THE RESEARCH PROJECT</p>	<p>The project must have a maximum length of 3 folders excluding the bibliography</p>
<p>DIRECTIONS ON THE ORAL TEST</p>	<p>The interview can optionally be held online or in-person</p>

PHD COURSE IN	ECONOMICS, MANAGEMENT AND QUANTITATIVE METHODS
COORDINATOR	Andrea Carosi -acarosi@uniss.it
TRAINING OBJECTIVES	<p>The PhD in Economics, Management, and Quantitative Methods (EMQM) at the University of Sassari integrates analytical and theoretical training in economic and business, with a solid quantitative background. The doctoral program includes PhD students training with advanced level courses, and PhD thesis preparation. The training courses cover advanced tools for theoretical, empirical and experimental analysis; the PhD candidates must show the ability to conduct original and excellent research in their final dissertations. The attention to interdisciplinary aspects and the variety of courses offered, allow this PhD in EMQM for the training of original intellectual profiles, characterized by innovative and cross-sectional skills in the analysis of data, individuals, companies and markets. The PhD in EMQM also offers specialized higher education on economic and management issues, as well as on the most advanced methodologies and applications of mathematical and statistical models in these disciplinary fields. The objectives described above are necessary to train research PhD students capable of facing future challenges and, in particular, to respond to the demand for digital, technical and scientific skills.</p>
AREAS OF INTEREST (SSD)	<p>M-GGR/02 - Economic and political geography SECS-P/01 - Economics SECS-P/02 - Economic Policy SECS-P/07 - Business administration and Management SECS-P/08 - Management SECS-P/09 - Finance SECS-P/11 - Financial Markets and Institutions SECS-S/04 - Demography SECS-S/05 - Social statistics SECS-S/06 - Mathematical methods of economy, finance and actuarial sciences</p>
METHOD OF EVALUATION	Titles, research project and interview (30+20+50)
CONTEST POSITIONS AND TOPICS RELATED TO SCHOLARSHIPS (by administrative category)	<p>No 1 fellowship funded by University of Sassari Topics: See Areas of interest (SSD)</p> <p>No. 1 fellowship funded by DM 629/2024, Transizione Digitale ed Ecologica (DM 629/2024: Art. 7) Topics: Economics, Management e Quantitative Methods for Innovation, Digital Transformation, Competition, Culture, Green Capital and Climate Risk</p> <p>No. 1 fellowship funded by DM 629/2024, Pubblica Amministrazione (DM 629/2024: Art. 9) Topics:</p> <ul style="list-style-type: none"> - Design and evaluation of public policies; - Development of financial, managerial and economic skills for the digital and green transformation of public administrations;

	<ul style="list-style-type: none"> - Efficiency and cost-effectiveness of public action with particular reference to the so-called twin transitions (digital and ecological); <p>No. 1 fellowship funded by DM 630/2024, supported by Parco Nazionale dell'Asinara:</p> <p>Theme:</p> <ul style="list-style-type: none"> - Green Transition, Environmental Challenges, Local and Global Solutions; - Green Transition and Responsible Consumption and Production; - Economics and Finance to Improve Conservation Outcomes.
<p>VALID TOPICS FOR PROJECT AND INTERVIEW</p>	<ol style="list-style-type: none"> 1. Economics (Microeconomics, Macroeconomics, and Econometrics); 2. Management (Financial Accounting, Business Administration, Public Management, Corporate Finance, Banking, and Marketing); 3. Quantitative Methods (Applied Mathematics and Applied Statistics).
<p>INDICATIONS CONCERNING THE RESEARCH PROJECT</p>	<p>The research project must be in English. The research project must be presented, in English, during the interview, with the aid of a presentation with slides (max. 10 slides). As a guide, the project and presentation must have the following structure:</p> <ul style="list-style-type: none"> - Introduction and related literature - Motivation - Data and Methodology - Expected or Preliminary Results - Conclusion and expected contributions
<p>DIRECTIONS ON THE ORAL TEST</p>	<p>Online. The interview will be conducted in English.</p>

PHD COURSE IN	LIFE SCIENCES AND BIOTECHNOLOGIES
COORDINATOR	Daria Sanna - darsanna@uniss.it
TRAINING OBJECTIVES	The course is organised over a three-year period and is characterised by structured training activities (face-to-face lectures, seminars and formal work-in-progress presentations, individual study and in-depth study) and broadly interdisciplinary research projects, in order to foster interactions and knowledge exchanges between fast-growing fields such as modern biological and biomedical sciences. The main research areas include: animal biology, molecular bases of physiological and pathological processes, human and veterinary medicine, microbial pathogenicity, infections and autoimmunity, biomedical engineering and artificial intelligence (AI), food and drug production, agricultural and animal husbandry development, environmental protection, animal biodiversity and bioengineering. The PhD programme promotes theoretical-experimental cultural training and multiple interactions with national and international public and private laboratories. This will enable students to deal with other study and research realities and will increase employment opportunities, even beyond the academic sphere. For study and research activities, periodic evaluations by the Board of teachers of individual students are foreseen in order to encourage their productivity, both in qualitative and quantitative terms.
AREAS OF INTEREST (SSD)	BIO/05 BIO/07 BIO/09 BIO/10 BIO/11 BIO/12 BIO/16 BIO/18 BIO/19 MED/04 MED/07 MED/09 MED/16 MED/26 MED/33 ING-INF/04 ING-INF/06 VET/05
METHOD OF EVALUATION	Titles and interview (30+70)
CONTEST POSITIONS AND TOPICS RELATED TO SCHOLARSHIPS (by administrative category)	1 fellowship funded on DM 629/2024, PNRR Theme: Microevolutionary changes associated with the colonization of human-dominated landscapes by wild mammals - Exposure to new selective pressures in anthropized environments can induce microevolutionary changes in animal populations. Adaptation to such conditions, possibly favored by introgressive hybridization with other related species, determine a better exploitation of human-derived resources. A genomic approach and a comparison with populations living in natural habitats allow us to identify the origin of these adaptive changes;

No. 1 fellowship funded on DM 630/2024 in cooperation with Lifeamnios s.r.l.

Theme:

The research activity will be oriented on the analysis of functional biomolecules for the production of drugs or similar that can be tested in human models for fatal diseases;

No. 1 fellowship funded on DM 630/2024 in collaboration with Bioecopest s.r.l.

Theme:

Study of aquatic environmental pathogens through molecular approach - Characterization of the main groups of environmental pathogens living in the water column using integrated genetic techniques and computational analysis and identification of potential biomarkers and/or exotoxins for their monitoring;

No. 1 fellowship funded on DM 630/2024 in collaboration with Angiodynamics s.p.a.

Theme:

The treatment of solid tumors, which develop in human parenchyma (liver, lung, breast, kidney, thyroid, bone), has recently been enriched with new minimally invasive interventional oncology techniques. These techniques, either alone or in combination with surgery and medical oncology therapy, have contributed to increasing the survival of people affected by such diseases. The study of their correct application in various clinical scenarios, along with the discovery of further new treatment possibilities either alone or in combination with others, will allow for improved quality of life and survival of those affected;

No. 2 places reserved for Foreign Exchange Scholars from Shantou University

Theme:

Search for new biomarkers in infectious, inflammatory and chronic diseases. Use of available databases to arrive at tests on patients and microorganisms;

No. 1 fellowship funded by the University

Theme:

Epigenetic changes in cancer onset and progression - The investigation of the molecular mechanisms associated with epigenetic regulators in normal and tumor cells is crucial to define their function in the initiation and progression of cancer. Exploring the role of the key epigenetic targets in the aberrant and uncontrolled growth of cancer cells aims of identifying new promising drugs and testing their effectiveness in blocking cell proliferation and tumor growth;

No. 1 position without fellowship

Theme:

Motor, rehabilitation engineering: orthotic and prosthetic devices validation using motion capture systems. Experimental activity to be carried out for the most part at the Bioengineering Unit of the Italian Defence Biomedical Sciences Institute in Rome;

No. 1 position without fellowship

Theme:

	<p>Assessment of aquatic animal biodiversity through an integrated approach: Characterization through an integrated approach (morphology, population dynamics, etc.) of populations of aquatic animal species (both native and alien) in their natural habitats.</p>
<p>VALID TOPICS FOR PROJECT AND INTERVIEW</p>	<p>- fellowship funded on DM 629/2024, PNRR Adaptation to life in human-dominated environments. Population genomics. Phenotypic plasticity and molecular mechanisms of adaptive changes;</p> <p>- fellowship funded on DM 630/2024 in collaboration with Lifeamnios s.r.l. Effects of bioactive molecules on different cellular types</p> <p>- fellowship funded on DM 630/2024 in collaboration with Bioecopest s.r.l. The interview topics will be related to the subject of the scholarship. More specifically, the candidate's knowledge will be assessed in the following areas: i) molecular biology laboratory techniques, including DNA extraction, purification, PCR, protein gel electrophoresis and western blotting analysis; and ii) computational data analysis, with particular reference to whole genome assembly, annotation, and descriptive statistics on the genomic composition of the isolate. Finally, the candidate's experience will be evaluated by asking them to describe how they would conduct a typical study;</p> <p>- fellowship funded on DM 630/2024 in collaboration with Angiodynamics s.p.a. The interview topics will aim to assess the themes of the call, with particular interest in the experience and ability to build databases and analyze the data collected retrospectively and prospectively;</p> <p>- places reserved for Scholars from foreign countries from Shantou University Search for new biomarkers in chronic, inflammatory and infectious diseases. From the use of databases to tests on patients and microorganisms;</p> <p>- fellowship funded by the University Epigenetic mechanisms of gene regulation in cancer: DNA methylation, histone modification, regulation of non-coding RNAs;</p> <p>- place without fellowship Human movement analysis. Musculo-skeletal system models. Human movement measurement technologies;</p> <p>- place without fellowship Interview topics will be linked to the goals of the scholarship: in particular, the knowledge related to the techniques used to obtain an integrated approach to the study of aquatic animal biodiversity will be assessed, as well as the specific knowledge of laboratory methods applied in candidate previous experiences. Finally, the experience gained by the candidate in the field will be evaluated.</p>
<p>INDICATIONS CONCERNING THE RESEARCH PROJECT</p>	

**DIRECTIONS ON THE
ORAL TEST**

The interview can optionally be held online or in-person

PHD COURSE IN	AGRICULTURAL SCIENCES
COORDINATOR	Severino Zara - szara@uniss.it
TRAINING OBJECTIVES	<p>The course aims to train highly qualified PhDs capable of meeting the demand for research and development in the fields of:</p> <ul style="list-style-type: none"> (i) agrometeorology and plant ecophysiology; (ii) productivity of agricultural crops; (iii) management and protection of agricultural and forestry production systems; conservation, protection and enhancement of natural resources; (iv) biotechnology aimed at regional, national and international production needs; v) breeding and reproduction techniques, nutrition and feeding, applied genetics and selection of zootechnical animals also with the use of molecular biology techniques, quality and safety of food products of animal origin. (vi) The study of forms of land degradation, understood as actual or potential loss of land productivity or utility due to natural or anthropogenic factors affecting food production and security, livelihoods, production and provision of other ecosystem goods and services. (vii) Factors and forces leading to land degradation and desertification. <p>In the three years PhD students acquire the scientific method and the skills necessary for preparing experimental designs, conducting experimental plans and laboratory activities, mathematical-statistical data processing, evaluating statistical-experimental inferences and disseminating research results.</p>
AREAS OF INTEREST (SSD)	<p>AGR/01 AGR/02 AGR/03 AGR/04 AGR/05 AGR/07 AGR/09 AGR/10 AGR/11 AGR/12 AGR/13 AGR/14 AGR/15 AGR/16 AGR/17 AGR/18 AGR/19 AGR/20 BIO/01 BIO/02 BIO/03 BIO/04 BIO/05 BIO/07 FIS/02 SPS/07</p>

METHOD OF EVALUATION	Titles and interview (30+70)
CONTEST POSITIONS AND TOPICS RELATED TO SCHOLARSHIPS (by administrative category)	<p>Curriculum in Desertification and Land degradation No. 1 fellowship co-funded by the Department of Agriculture and the University Theme: Nature-based solutions to address land degradation and desertification in Med drylands;</p> <p>Curriculum in Monitoring and control of agricultural and forest ecosystems in the Mediterranean environment No. 1 fellowship funded on DM 630/2024, in collaboration with Suber Lab srl Theme: Health status of cork oak forests and cork quality in Sardinia;</p> <p>Curriculum in Productivity of cultivated plants No. 1 fellowship co-funded by the Department of Agriculture and the University Theme: Establishment of a plant germplasm collection in Sardinia;</p> <p>Curriculum in Animal Sciences and Technologies No. 1 fellowship funded on DM 630/2024, in collaboration with CAO Formaggi Theme: Factors influencing sheep and goat milk quality for dairy processing in Sardinia.</p>
VALID TOPICS FOR PROJECT AND INTERVIEW	The same themes already indicated for the scholarships should be used
INDICATIONS CONCERNING THE RESEARCH PROJECT	Follow what is already stated in the call for applications
DIRECTIONS ON THE ORAL TEST	The interview can optionally be held online or in-person

PHD COURSE IN	CHEMICAL SCIENCES AND TECHNOLOGIES (in agreement with the University of Cagliari)
COORDINATOR	Carla Cannas ccannas@unica.it
TRAINING OBJECTIVES	<p>The PhD Course aims at training highly qualified PhD students in the field of chemistry, offering Italian and foreign graduates the opportunity to independently develop an original and innovative research project in the most advanced sectors of chemical sciences and technologies. To this end, PhD students will be trained, within the framework of the different topics offered by the Course, through constant experimental and/or theoretical research activities supported by an appropriate teaching programme. PhD student(s) will acquire the scientific method, develop a keen critical mind, and acquire the knowledge and skills necessary to carry out high-level research activities in a variety of interdisciplinary fields of interest in chemistry, both nationally and internationally. The centrality of the chemical sciences is widely acknowledged and cuts across various scientific disciplines (physics, biology, engineering, geology, pharmacy, archaeology) and thus finds applications in fields that are also very different from each other, from materials science to biomedicine, from energy to agriculture, from electronics to biology, from conservation of cultural heritage to environmental protection.</p> <p>The research activity will be complemented by specific advanced teaching, as well as transversal teaching aimed at training PhD students in all those soft-skills that are fundamental for dissemination, both in oral and written form, as well as aspects related to research and acquisition of funding and technology transfer.</p>
AREAS OF INTEREST (SSD)	CHIM/01 CHIM/02 CHIM/03 CHIM/04 CHIM/06 CHIM/08 CHIM/09 CHIM/10 CHIM/12 FIS/01 FIS/07 ING-IND/22
METHOD OF EVALUATION	Titles, research project and interview (30+20+50)
CONTEST POSITIONS AND TOPICS RELATED TO SCHOLARSHIPS (by administrative category)	<p>No. 1 fellowship funded on DM 630/2024, in cooperation with E' Ambiente s.r.l. Theme: Development of processes for separation, recovery and valorisation of materials from lithium-ion electrochemical cells that have exhausted their life cycle. Electrochemical performance of recovered materials and comparison with that of devices made from scratch using advanced instrumental techniques;</p> <p>No. 1 fellowship funded on DM 630/2024, in cooperation with ViroStatics s.r.l. Theme:</p>

Development of antineoplastic drug prototypes with innovative mechanism of action for the treatment of aggressive and drug-resistant tumours;

No. 1 fellowship funded on DM 630/2024, in collaboration with ViroStatics s.r.l.

Theme:

Fabrication of photo-activated, antiviral and antibacterial biocidal systems based on carbon dots and nanoparticles with oxidant and antioxidant capacity;

No. 1 fellowship funded on DM 630/2024, in collaboration with Dompé Farmaceutici s.p.a.

Theme:

Development of formulations for drug delivery via the nasal and/or dermal route.

No. 3 fellowships (1 funded by the University and 2 by the University of Cagliari) and No. 2 positions without fellowship

Themes:

1 - Nanostructured materials. Synthesis, functionalisation and chemical-physical characterisation of new nanostructured, inorganic and hybrid materials for applications in heterogeneous catalysis, energy, environment, sensor technology, cultural heritage and biomedicine. Development of eco-friendly synthesis strategies and from industrial and mining waste.

2 - Complex biological systems. Experimental and theoretical studies and metabolomic investigations.

3 - Modelling and computational chemistry. Development of simulation techniques, computational studies of complex systems of chemical interest. Applied quantum electrodynamics and development of the theory of dispersion forces.

4 - Thermodynamic characterisation of liquid mixtures. Experimental and theoretical studies of the thermodynamic mixing properties of binary or ternary liquid mixtures containing ionic liquids.

5 - Industrial catalytic processes. Chemical process technologies. Study of catalytic processes (preparation, stability, regeneration).

6 - Bio-nanointerfaces. Study of the interactions between biomacromolecules and 'hard' and 'soft' nanostructures. Experimental and theoretical-computational studies on the specific effects of electrolytes on biomolecules and/or nanostructures.

7 - Development of analytical methodologies for the characterisation of metallic materials, polymers, nanomaterials and functionalised surfaces for applications in the fields of renewable energy, the environment, sensors, health and cultural heritage.

8 - Application of conventional and supercritical carbon dioxide extraction technologies on plant and agro-food matrices and chemical and biological characterisation of the extracts.

9 - Design and development of new synthesis methodologies for obtaining complex organic molecules and their applications in the biomedical and technological fields. Design of new catalytic and eco-friendly processes with low environmental impact and valorisation of agricultural and industrial waste.

10 - Synthesis, characterisation, properties and reactivity of new inorganic or organometallic compounds. Structural, spectroscopic, computational characterisation and catalytic, biological and pharmacological properties of compounds of application interest.

11 - Molecular materials. Development of coordination complexes and polymers, 2D and 3D Metal Organic Frameworks, for applications in

	<p>electronics, spintronics, energy and as molecular fluorescence and redox sensors for metal ions and inorganic anions and organic molecules. Supramolecular architectures based on weak interactions for the development of new smart materials. Reactivity studies, molecular spectroscopies, equilibria in solution and calculation methodologies.</p> <p>12 - Analytical methodologies and applications. Synthesis and spectroscopic and electrochemical characterisation of organic, inorganic and metallorganic-based materials for applications in sensors, photosensitive devices, electrocatalysis. Development, validation and application of instrumental analysis methods to real matrices. Analytical typification of agri-food productions. Food safety. Studies on bioaccumulation of toxic elements in biotic matrices. Environmental analysis and monitoring, bioanalysis.</p> <p>13 - Design, synthesis and characterisation of new ligands and metal complexes with biological properties (antitumour, antioxidant) and of interest in the environmental field (sensors for toxic metals). Molecular mechanics calculations, molecular docking and chemometric approach for determining structure-activity relationships.</p> <p>14 - Design, synthesis and biological evaluation of small molecules. Synthesis, characterisation and biological evaluation of new chemical structures with potential pharmacological activity.</p> <p>15 - Pharmaceutical chemistry and technologies. Design and development of nanosystems for site-specific delivery of bioactive molecules and for diagnostics/theranostics. Design and testing of innovative platforms for drug delivery through different routes of administration.</p> <p>16 - Pharmaceutical and toxicological chemical analysis. Validation of analytical methodologies for the determination of drugs, designer drugs and metabolites in biological matrices.</p> <p>17 - Cultural Heritage. Archaeometric studies on ceramics, pigments, obsidian and metal-based artefacts. Application of diagnostic techniques for in-situ analysis. Synthesis, characterisation and application of inorganic consolidants for the conservation and restoration of stone cultural heritage. Innovative strategies for conservation through the kinetic control of mineralogical and inhibitive processes.</p> <p>18 - Polymeric materials. Synthesis and characterisation of new polymeric materials and devices for applications in energy, environment and biomedicine. Innovative processing techniques.</p>
<p>VALID TOPICS FOR PROJECT AND INTERVIEW</p>	<p>The same themes already indicated for fellowships should be used.</p>
<p>INDICATIONS CONCERNING THE RESEARCH PROJECT</p>	<p>The research project must be structured with a title relating to one of the topics of the PhD Course or DM630 fellowships reported; a description of the methodology to be undertaken to achieve the expected results (max 2000 words); a summary description of the expected results with respect to the research programme (max 2000 words); a description of the expected potential impact of the project with respect to the state of the art (max 1000 words).</p>
<p>DIRECTIONS ON THE ORAL TEST</p>	<p>The interview can optionally be held online or in-person</p>

PHD COURSE IN	JURIDICAL SCIENCES
COORDINATOR	Giuliana Giuseppina Carboni - dottoratosg@uniss.it
TRAINING OBJECTIVES	<p>The objective pursued by the PhD Course is that of Higher Education in the field of law, with specific attention to the various curricula, which respond to needs that are especially felt in the area in which the Doctoral Course operates, but with the intention of constituting a pole of attraction for scholars from other national areas and abroad. With regard to the first curriculum, the Course aims to provide doctoral students with tools for the legal analysis of supranational and state institutions, through recourse to doctrinal, jurisprudential and legislative formants. The curriculum also pays particular attention to the interactions between law and the economic world, and aims to stimulate inter-individual cooperation between researchers, overcoming the individualistic approach that usually characterises legal studies. With regard to the second curriculum, the Course intends to develop the study of the forms of protection of rights, activities and cultural heritage, which have assumed relevance not only at a national and international level, but also in the island's territory. The Course also aims to strengthen the international dimension of research in the field of culture, thanks to the numerous international agreements concluded with foreign universities involving European and non-European scholars. The objective of the third curriculum is to train PhDs able to give theoretical support to the study of rights in contemporary society, in which the dimension and extent of rights is changing due to rapidly evolving political, social, economic and cultural phenomena. The curriculum also aims to introduce innovative approaches to the themes of justice systems, with indepth studies of the new procedural paths introduced by the Cartabia reform and the study of alternative methods of dispute resolution. In terms of method, the Course intends to provide the necessary tools for learning suitable research methodologies, through the organisation of in-depth seminars, conferences and external collaborations. This activity is aimed at training scholars who demonstrate the maturity achieved through original monographic study, which makes an adequate scientific contribution to legal research.</p>
AREAS OF INTEREST (SSD)	<p>IUS/01 IUS/02 IUS/04 IUS/05 IUS/06 IUS/08 IUS/09 IUS/10 IUS/12 IUS/15 IUS/16 IUS/17 IUS/18 IUS/20 IUS/21</p>
METHOD OF EVALUATION	Titles, written and interview (30+35+35)

<p>CONTEST POSITIONS AND TOPICS RELATED TO SCHOLARSHIPS (by administrative category)</p>	<p>No. 1 fellowship funded by the University Theme: The new frontiers of banking and insurance product placement. 5 months abroad compulsory</p> <p>No. 1 fellowship funded on DM 629/2024, Public Administration Theme: Dematerialisation of socio-economic relations and new criminal forms of aggression against cultural heritage</p> <p>No. 1 fellowship funded on DM 629/2024, Public Administration Theme: The sources of European Union law</p> <p>No. 1 fellowship funded on DM 630/2024, in collaboration with Studio Commerciale Scanu Theme: The tax and social security settlement and debt forgiveness towards public and territorial entities in the new Crisis Code. State of the art and future prospects.</p> <p>No. 1 position without fellowship reserved for candidates who have obtained their qualification abroad Theme: Romanistic roots of Ibero-American law of succession</p>
<p>VALID TOPICS FOR PROJECT AND INTERVIEW</p>	<p>The topics of the interview must be consistent with the themes associated with the scholarships</p>
<p>INDICATIONS CONCERNING THE RESEARCH PROJECT</p>	
<p>DIRECTIONS ON THE ORAL TEST</p>	<p>For candidates for positions financed by the University and by DM 629 and 630/2024, the interview will be held in person only. For candidates for positions without fellowships, the interview may also be held online.</p>

PHD COURSE IN	MEDICAL, SURGICAL AND EXPERIMENTAL SCIENCES
COORDINATOR	Margherita Maioli - mmaioli@uniss.it
TRAINING OBJECTIVES	<p><u>General objective:</u> To train highly qualified researchers to be employed in both basic and applied research structures, both public and private. The training objective will also be pursued in collaboration with other Italian and foreign universities or by means of agreements with public and private entities possessing the requisites of high cultural and scientific qualification, as well as adequate personnel, facilities and equipment. The training of the PhD student will also be aimed at his/her insertion in the world of work and in the country's production system at public and private institutions.</p> <p><u>Specific objectives:</u></p> <ul style="list-style-type: none"> - focus the training and research activity on extended scientific and methodological areas of great relevance for basic and applied research in the field of biomedical sciences; - carry out the proposed topics within the curricula with an interdisciplinary approach; - document the results of scientific activity on the proposed topics by the lecturers involved in the training activity; - carry out specific aspects of the training activity within the framework of interchange projects established with public and private research bodies, both Italian and foreign, willing to host doctoral students in their facilities. <p>In order to achieve these training objectives, the PhD Course will set up a joint teaching committee, which will provide for the organisation, rationalisation and coordination of the teaching activity</p>
AREAS OF INTEREST (SSD)	FIS/07 BIO/09 BIO/13 BIO/14 BIO/16 BIO/17 CHIM/10 ING-INF/06 MED/01 MED/03 MED/04 MED/06 MED/07 MED/08 MED/09 MED/10 MED/11 MED/12 MED/17 MED/18 MED/19 MED/24 MED/25 MED/28 MED/29 MED/30 MED/31

	<p>MED/36 MED/40 MED/41 MED/42 MED/43 MED/49 M-EDF/01</p>
METHOD OF EVALUATION	Titles, research project and interview (30+20+50)
CONTEST POSITIONS AND TOPICS RELATED TO SCHOLARSHIPS (by administrative category)	<p>Curriculum in Biology, Genetics and Molecular Oncology No. 1 fellowship funded on DM 630/2024, in collaboration with Myrtoviva s.r.l. Theme: Innovative drug delivery systems of natural extracts and their applications in biomedical and regenerative medicine.</p> <p>No. 1 fellowship funded on DM 630/2024, in collaboration with Diatech Pharmacogenetics s.r.l. Theme: New resources and applications of Pharmacogenomics.</p> <p>No. 1 fellowship funded by the Department of Biomedical Sciences Theme: Digital Cyto-IstoPathology applied to diagnostic, preventive and molecular pathological anatomy.</p> <p>Curriculum in Gender Medicine and Surgery No. 2 positiones without fellowship Theme: Treatment of bladder cancer: gender differences.</p> <p>Curriculum in Neurosciences No. 1 fellowship funded by the University Theme: Systematic, sensorimotor, cognitive and behavioural neuroscience.</p> <p>No. 1 fellowship funded on DM 630/2024, in collaboration with VerdeVita s.r.l. Theme: Heavy metals and green economy: impact on neurodegenerative diseases and cancer.</p> <p>No. 1 fellowship funded on DM 630/2024, in collaboration with Torres s.r.l. Theme: Implementation of new functional assessment methods in healthy, pathological and sports populations.</p>
VALID TOPICS FOR PROJECT AND INTERVIEW	The same themes already indicated for the scholarships should be used
INDICATIONS CONCERNING THE RESEARCH PROJECT	
DIRECTIONS ON THE ORAL TEST	The interview can optionally be held online or in-person

PHD COURSE IN	VETERINARY SCIENCES
COORDINATOR	Alberto Alberti alberti@uniss.it
TRAINING OBJECTIVES	<p>The aim of the PhD course is to train qualified researchers in the disciplines belonging to the Veterinary Sciences through a multidisciplinary scientific and cultural education transferred also through the provision of highly qualified specialist teaching. In line with the two curricula, the specific training objectives of the course are:</p> <ul style="list-style-type: none"> - to possess in-depth and up-to-date knowledge of the mechanisms underlying the processes inherent to reproductive and productive biology and animal welfare conditions, with the aim of developing specific knowledge for the development and application of biotechnologies in animal reproduction and to improve the reproductive performance and profitability of livestock farms; - acquire knowledge and technical experience regarding animal production in order to improve its quality through the prudent management of resources and production processes; - develop specific knowledge for the study of animal pathologies and parasitic diseases, also in order to develop all those control measures that, through the optimisation of pharmacological interventions, can allow the quantitative-qualitative improvement of production; - deepen knowledge in the fields of microbiology, epidemiology and infectious diseases and develop specific skills in the study of pathogenesis, immunity, and the control of transverse infectious diseases and zoonoses; - study in depth the latest surgical, obstetric and internal medicine techniques in order to improve and update veterinary clinical practice; - develop specific skills in the fields of pharmacology and toxicology, food microbiology, the control of abiotic contamination, the methodologies required to achieve quality system certification and the policies of EU recognised quality marks in order to enhance the value of animal products and develop innovative processing techniques.
AREAS OF INTEREST (SSD)	VET/01 VET/02 VET/03 VET/04 VET/05 VET/06 VET/07 VET/08 VET/09 VET/10 AGR/17 AGR/18 AGR/19 BIO/05
METHOD OF EVALUATION	Titles and interview (30+70)
CONTEST POSITIONS AND TOPICS RELATED	Curriculum in Animal Reproduction, Pathology, Breeding and Welfare No. 1 fellowship funded by the University

<p>TO SCHOLARSHIPS (by administrative category)</p>	<p>Theme Enhancement of genetic potential for increasing productivity and sustainability in dairy sheep farming</p> <p>No. 1 fellowship funded on DM 630/2024, in collaboration with Asmed s.r.l. Theme: One Health Approach in Reparative and Regenerative Medicine with REAC Technology</p> <p>No. 1 fellowship funded by the Istituto Zooprofilattico Sperimentale della Sardegna Theme: Molecular Surveillance and pathogenic features of Arbovirosis emerging in the Mediterranean Area</p> <p>No. 1 fellowship funded by the Experimental Zooprohylactic Institute of Sardinia Theme: Impact of global climate change on small ruminants' physiology and health in the Mediterranean Area.</p> <p>Curriculum in Food production, quality and safety</p> <p>No. 1 fellowship funded on DM 630/2024, in collaboration with F.Ili Pinna s.p.a. Theme: Study of production processes of dairy products based on sheep's milk, for the implementation of technological innovations relating to the hygienic and sanitary management of production and food safety of finished products, also by increasing the environmental sustainability of the supply chain.</p> <p>No. 1 fellowship funded on DM 630/2024, in collaboration with Aitem s.r.l. Theme: The use of artificial intelligence in the diagnosis of parasitic diseases</p>
<p>VALID TOPICS FOR PROJECT AND INTERVIEW</p>	<p>The same themes already indicated for the scholarships should be used</p>
<p>INDICATIONS CONCERNING THE RESEARCH PROJECT</p>	
<p>DIRECTIONS ON THE ORAL TEST</p>	<p>The interview can optionally be held online or in-person</p>