

PhD Course in	BUSINESS, INSTITUTIONS, MARKETS
Coordinator	Prof. Federico BRIOLINI - Department of Legal and Social Sciences email: federico.briolini@unich.it
Duration	3 years - Starting date: February 2023
Disciplines	PROBABILITY AND STATISTICS, ECONOMIC AND POLITICAL GEOGRAPHY, CONSTITUTIONAL LAW, PUBLIC LAW, ADMINISTRATIVE LAW, INTERNATIONAL LAW, PHILOSOPHY OF LAW, ECONOMICS, ECONOMIC POLICY, ECONOMETRICS, APPLIED ECONOMICS, BUSINESS ADMINISTRATION AND ACCOUNTING STUDIES, FINANCIAL MARKETS AND INSTITUTIONS, COMMODITY SCIENCES, ECONOMIC STATISTICS, MANAGEMENT, INFORMATICS
PhD Programme description	The Ph.D. programme in BUSINESS, INSTITUTIONS, MARKETS (BIM) lies mainly within the sectors of the European Research Council (ERC) "SH1 Individuals, institutions and markets" and "SH2 Institutions, values, beliefs and behavior". The title of the programme derives from the integration of these sectors. This area of research stands out for its markedly interdisciplinary approach to complex issues regarding companies, the markets in which they operate, their interrelations with other institutions, as well as the natural environment and territory. The PhD program in BIM aims at training high-profile scholars able to analyse complex problems in the economic and law sectors through a multidisciplinary approach, also including information technology and mathematical skills. At the completion of their studies, doctoral students will have assimilated an integrated knowledge of the theoretical and methodological issues of business, economic and law disciplines and will be able to use the acquired tools for the analysis and solution of both theoretical and empirical problems. The PhD Training Programme includes courses aimed at homogenising the common body of knowledge necessary for the development of multidisciplinary interactions, as well as specialised courses aimed at developing original research, the results of which can be subject to publication through the best scientific channels of the field. The enhancement of each student's skills will take place through individual research projects, through sharing and cross-fertilisation of the various disciplinary approaches in order to arrive at the ultimate goal of developing critical thinking skills and scientific autonomy. The doctoral students are required to spend abroad a minimum period of three months throughout the three years carrying out research activities in internationally-recognised training and research organisations.
Available positions	n. 1 position <u>reserved exclusively to employees (maintaining their salary) of SALPA S.a.c.r.l. on topic "Responsibility profiles of top management in consortium companies and agricultural cooperatives"</u>
Admission requirements	See article 2 PhD Call 38 th cycle - Academic Year 2022/2023.
Language/s	English knowledge is required
Documentation in PDF format to be attached online (max 5MB for each document)	1. CV (limited to academic degrees and scientific and/or professional achievements consistent with the Ph.D. programme; max 10 000 characters); 2. <i>diploma supplement</i> or list of the examinations and marks (included final marks of the 2nd level degree); 3. <i>abstract</i> of the 2nd level degree thesis (max 10 000 characters); 4. <i>research proposal</i> (max 10 000 characters).
Selection procedures and criteria	Qualifications and exams: - assessment of qualifications and research proposal (max score 50/100); - oral interview (max score 50/100). The oral interview will consist of: a) discussing the 2nd level degree thesis; b) discussing the research proposal; c) demonstrating the knowledge of English (by submitting to the candidate a text randomly chosen from an adequate number of texts provided by the Admission Committee).

	Minimum score required: 60/100.
Exam date	The oral exam will take place on the 17 th January 2023 at 12 p.m. in remote on the Microsoft Teams platform.

PhD Course in	ENGINEERING SCIENCE
Coordinator	Prof. Luigi BERARDI - Department: Engineering and Geology email: luigi.berardi@unich.it
Duration	3 years - Starting date : February 2023
Disciplines	GEO/09 Mining resources, mineralogic and petrographic applications for the environment and for cultural heritage; GEO/10 Solid Earth geophysics; ICAR/02 Hydraulic and marine constructions and hydrology; ICAR/07 Geotechnics; ICAR/08 Structural mechanics; ICAR/09 Structural engineering; ING-INF/05 Information processing systems; ING-INF/06 Electronic and informatics bioengineering; ING-IND/22 Materials science and technology
PhD Programme description	The PhD in Engineering Science was created to train on technical-scientific research for the development of innovative knowledge and solutions in various engineering fields following a multidisciplinary perspective in the current context of digital, environmental and health transition. The program strengthens the synergy between traditional areas in the panorama of international doctorates in engineering, such as construction and infrastructure in built environment, along with the analysis of relevant risks (seismic, hydrogeological, coastal), and more recent areas of innovation, such as sustainable materials, data-analysis for engineering, imaging technologies, biomaterials and biomechanics for biomedical engineering. The aim is to prepare PhD students for the development of innovative knowledge and solutions that will impact various societal challenges in the areas of sustainable infrastructure design and management, resilience and preparedness for extreme events, as well as customized solutions to support of the health and well-being of the individual. The multidisciplinary training is completed with in-depth study in specific areas within two curricula in "Engineering for Sustainable and Resilient Infrastructures" and "Engineering for Well-being and Health". The curriculum in "Engineering for Sustainable and Resilient Infrastructures" includes topics of technical-scientific innovation concerning the built environment, starting from the single building up to the network infrastructures on the urban or territorial scale, looking at sustainability and resilience with respect to various risks (e.g. hydrogeological, seismic, climatic). The main topics covered include: analysis, design and evaluation of safety of modern and historic buildings; geotechnical systems under natural and anthropogenic influence, using different evaluation scales, i.e. single, urban and regional scales; energy performance of buildings; analysis and management of hydraulic infrastructures in urban areas and with reference to coastal structures; innovative techniques for building engineering; modelling and testing of materials and structures; experimental investigations and advanced laboratory tests on soils; analysis and development of sustainable construction materials. The curriculum in "Engineering for Well-being and Health" tackles the development of innovative knowledge and solutions to support people's wellbeing and health. The multidisciplinary approach represents the methodological basis for wide opportunities to develop new knowledge, processes and products in various fields, including: advanced diagnostics, robotics, biomaterials, biomechanics, rehabilitation, telemedicine, assisted ambient living. To this end, novel technological opportunities are integrated with training on various topics of direct relevance to biomedical engineering including: "data analysis", "advanced signal processing" or "human-machine interaction". The training course and each of research projects developed by the PhD students in Engineering Science combine physically based system modelling, with experimentation and with the opportunities offered by artificial intelligence applied to the different research areas of the doctorate, while maintaining a pragmatic engineering approach to solving real-world problems.

	Research is therefore encouraged on topics that have the ambition to reach new knowledge by translating it into process/product innovations with a direct impact on the society. Training and research activities will be carried out in university laboratories or in collaboration with partners from the private or public sector. The Doctorate programme supports collaborations with foreign research institutions and universities, including those that are currently involved in various international research projects directly followed by the members of the PhD Board as well as cooperation agreements in Europe and outside Europe at Department of Engineering and Geology. The PhD Students are required to spend an obligatory stay abroad for a minimum period of 6 months during the three years.
Available positions	n. 1 scholarship funded by the: Istituto Nazionale di Oceanografia e di Geofisica Sperimentale – OGS, on the topic: “Seismic potential of active and capable faults nearby energy-industry strategic infrastructures in Northern Italy: collection, analysis and representation tools of multidisciplinary datasets”. The PhD project is funded in the frame of the PNRR Project GEOSCIENCES IR, coordinated by ISPRA and funded by MUR (Next Generation EU - Missione 4 Istruzione e Ricerca - Componente 2 Dalla ricerca all'impresa, Investimento 3.1 “Fondo per la realizzazione di un sistema integrato di infrastrutture di ricerca e innovazione”). The student's headquarter will be based in the OGS offices, in Sgonico (Trieste, IT), with periodic stays at the University of Chieti (UdA) that hosts the PhD degree; stays abroad (max 6 months) are planned too. <i>Expected results.</i> The ultimate goal of the PhD project is to evaluate the potential impact of surface faulting on existing or planned plants and infrastructures in northern Italy, especially those strategic for the energy industry (for example, dams, underground reservoirs, oil and gas pipelines, nuclear plants). Identification and characterization of selected active faults interacting with sensitive infrastructures. Probabilistic models to predict slip distribution along active and capable faults; specific relationships depending on surface geologic conditions with the goal of creating a complete model (main fault + distributed faulting) for Probabilistic Fault Displacement Hazard Assessment (PFDHA). Creation of open-source databases containing the data collected and the results of the studies carried out. Best practices, guidelines for quantifying seismic potential of active/capable faults in different tectonic regimes. Implementation of the existing database ITHACA. <i>Methods.</i> Through the collection and analysis of: geological and geophysical surveys; high resolution digital terrain models, based on distributed datasets (e.g. LIDAR, satellite images) and/or widespread sensors (e.g. fiber optic cables); seismological monitoring and paleoseismological surveys in situ, the candidate will contribute to define the geometry, kinematics and space-time evolution of the selected active faults. Through the integration of multidisciplinary datasets, and the development of suitable representation tools, the aim is to quantify the seismic potential of the structures, and to evaluate the probability of dislocation in case of seismic events, with reference to the surface faulting in the surrounding of the selected sites. These metadata, flowing into the infrastructure envisaged by the project, will be available to the Italian network of Geological Services, to other stakeholders (professionals, concessionaires of mineral resources) and more generally to the Italian and international scientific community. These studies will be devoted to estimate the surface faulting hazard affecting existing or planned infrastructures, and to provide a theoretical and observational frame to develop PFDHA and risk analyses. The research is embedded in the activities promoted by the PNRR Project “GEOSCIENCES: UN'INFRASTRUTTURA DI RICERCA PER LA RETE ITALIANA DEI SERVIZI GEOLOGICI”, WP 4 - Risk Monitoring and Management, Action 3 - Active and capable faults.
Admission requirements	See art. 2 PhD Call 38 th cycle - Academic Year 2022/2023

Language	English knowledge is required
Documentation in PDF format to be attached online (max 5MB for each document)	1. CV in the European format (max 10.000 characters); 2. Abstract thesis (max 5000 characters), 3. research project, in Italian or in English (max 10.000 characters); 4. diploma <i>Supplement</i> (or the list of exams taken as part of the degree course with relative grades); 5. publications, if any, including all the bibliographic data, i.e. ISSN; ISBN; DOI or, in case of publications in press, letter of acceptance by the publisher or director of the journal/series (max 5 attachments of max 5MB for each document); an abstract (max 2000 characters) in Italian, or in English for publications in a different language; 6. any other official university degree issued by a higher education institution or working experience relevant to the PhD program.
Selection procedures and criteria	Qualifications and exams: - qualifications (max score 40/100); - oral exam (max score 60/100). The oral exam will consist of: a) presentation of the research project; b) the verification of knowledge of English language through the discussion of a part of the research project in English, for candidates that are not native English speakers. Minimum overall score required to be admitted: 60/100.
Exam date	The oral exam will take place on the 17 th January 2023 at 10:00 a.m. in the room 31 situated in the Campus headquarters of Pescara, Viale Pindaro, 42 – Pescara or in remote if chosen by the candidate. If it will not be possible to carry out the exam in presence due to the Covid-19 emergency, the exam will be held in remote on the Microsoft Teams platform

PhD Course in	NEUROSCIENCE AND IMAGING
Coordinator	Prof. Cosimo DEL GRATTA - Department of Neuroscience, Imaging and Clinical Sciences email: cosimo.delgratta@unich.it
Duration	3 years - Starting date : February, 2023
Disciplines	Applied Physics, Biomedical Engineering, Medical Genetics, Pathology, Psychiatry, Neurology, Diagnostic imaging and Radiotherapy, Neuroradiology, Methods and Teaching of Sport Sciences, Psychobiology and Physiological Psychology, Developmental and Educational Psychology, Dynamic Psychology, Psychometrics, Social Psychology
PhD Programme description	Educational project: Interdisciplinary education for the acquisition of competencies necessary to the practice and the implementation of biomedical imaging, in particular for basic and clinical neurosciences, from the physical principles of imaging techniques, to the development of innovative instrumentation, to the methods of data acquisition and analysis, to the design and conduction of a basic or clinical study, to the publication of the results and their insertion in the present research landscape, and to the preparation of a research project for the participation in competitive calls. Topics of theoretical study, and of hands-on workshops: Methods and models for the analysis of biomedical images. Computational models for the neurosciences. Physical principles and technology for the implementation of innovative instrumentation for biomedical imaging. Study of genomics in normal and pathological conditions and their integration with functional imaging. Integration of neurologic, psychiatric, and diagnostic imaging disciplines for the study of Central Nervous System pathologies. The education includes practical hands-on courses on all the more widespread and advanced large scale neuroimaging.
Available positions	n. 2 positions of which: n. 1 scholarship funded by the ERC Synergy Grant ConnectToBrain (CUP: D54I18000270006), on the topic: <i>"Development of data analysis methods for Electroencephalography acquired during Transcranial Magnetic Stimulation"</i> n. 1 scholarship funded by the ERC Synergy Grant ConnectToBrain (CUP: D54I18000270006), on the topic: <i>"Methods for closed-loop neurofeedback triggered brain stimulation"</i> .
Admission requirements	See art. 2 of the PhD Call 38 th cycle - Academic Year 2022-2023
Language/s	Knowledge of the English language is required
Documentation in PDF format to be attached online (max 5MB for each document)	1. CV European format; 2. diploma supplement or list of the examinations and marks (including mark of the second level degree); 3. two presentation letters by two experts (external to the "Gabriele D'Annunzio" University of Chieti-Pescara); 4. abstract of the second level (master) degree thesis (max 10 000 characters); 5. list of publications (if available) with bibliographical references, including ISSN/ISBN .
Selection procedures and criteria	Qualifications and exams: - qualifications (max score 40/100); - oral exam (max score 60/100): The oral exam will consist of a discussion on: a) CV, degree thesis and publications b) applicant's motivation to attend the PhD program, c) a possible research project of interest to the candidate Only for Italian candidates, a test of reading, comprehension, and verbal fluency of English language. Foreign candidates will do the oral exam in English. The foreign candidates, and foreign-resident Italian candidates, may choose a remote oral exam. Candidates will be contacted in due time via e-mail by the Admission Committee to define the precise time and date of the interview. Minimum total score required for admission: 60/100.
Exam date	The exam will take place on the 17 th of January 2023 at 09:30 AM in the Meeting Room level 4, Institute for Advanced Biomedical Technologies, situated in the University Campus of Chieti,

	via Luigi Polacchi 11 – Chieti (for Italian candidates), or on Microsoft Teams for foreign-resident candidates. According to the number of candidates, the oral exams may extend over several days: the calendar, following the alphabetical order of candidates, will be published in advance on the Scuola Superiore (Doctorate School) website. https://www.scuolasuperiore.unich.it/bandi-di-concorso
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PhD Course in	BIOMOLECULAR AND PHARMACEUTICAL SCIENCES
Coordinator	Prof. Adriano MOLLICA - Department: Pharmacy email: adriano.mollica@unich.it
Duration	3 years - Starting date: February, 2023
Disciplines	Analytical chemistry, General and inorganic chemistry, Organic chemistry, Pharmaceutical chemistry, Pharmaceutical and technological applications of chemistry, Biochemistry, Clinical biochemistry and molecular biology, Human anatomy, Medical statistics, Experimental medicine and pathophysiology, Microbiology and clinical microbiology, Oral diseases and dentistry, Medical and biotechnology laboratory techniques, Food sciences and dietetics.
PhD Programme description	The Ph.D. course, which is divided in two curricula, has the objective to prepare young scholars to research in the fields of medicinal chemistry, pharmaceutical sciences and molecular medicine. During the course the following topics will be developed: drug design, synthesis and delivery, active bio-products separation and characterization, studies of molecular mechanisms underlying human pathologies and infections by pathogenic microorganisms. To this end, particular emphasis will be put on the most updated methodologies of molecular, structural and cellular biology, bioinformatics and biostatistics, omic sciences as well as to innovative animal models of human pathologies. A period of mobility abroad of at least six months is strongly encouraged.
Curricula	Pharmaceutical Sciences and Biotechnologies Molecular Medicine
Available positions	n. 1 scholarship funded by the Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria (CREA-IT), on the topic: "Development of a innovative snack based on olives paste with high nutraceutical and probiotic potential"
Admission requirements	See art. 2 PhD Call 38 th cycle - Academic Year 2022/2023.
Languages	English knowledge is required
Documentation in PDF format to be attached online (max 5MB for each document)	1. CV European format (max 10.000 characters); 2. Publications list (including all the bibliographic data, i.e. ISSN; ISBN; DOI); 3. Candidate may submit a research proposal (max 10.000 characters); 4. Candidate may submit up to two letters of presentation from recognized experts; 5. English language certifications (if available); 6. <i>diploma supplement</i> or a list of the examinations sustained during the master degree with votation, and final votation; 7. A summary of the master degree Thesis (max 10.000 characters).
Selection procedures and criteria	Qualifications and exams : - Qualifications (max score 20/100). Among the qualifications the following will be considered: (a) scientific and professional qualifications; (b) Diploma Supplement; (c) letters of presentation (d) English language certifications; - Oral exam (max score 80/100): the interview will consist in: (a) discussion of the master degree Thesis; (b) discussion of publications (if any); (c) discussion of the research proposal (if submitted by the candidate); (d) English language knowledge will be assessed through the reading and translation of a text, drawn by the candidate among a list of many prepared by the committee; (e) discussion of one of more arguments of basic biology or pharmaceutical sciences, drawn by the candidate among an adequate number prepared by the Committee for each of the curricula. Minimum score required: 60/100.
Exam date	The oral exam will take place on the 17 th January 2023 at 9:00 a.m. the Department of Pharmacy - Campus of Chieti, via dei Vestini 31 66100 Chieti Scalo. If it will not be possible to carry out the exam in presence due to the Covid-19 emergency, the exam will be held in remote on the Microsoft Teams platform