UNIVERSITÀ DEGLI STUDI DEL MOLISE

DIVISIONE RISORSE E SERVIZI
AREA SERVIZI AGLI STUDENTI
COORDINAMENTO SEGRETERIE STUDENTI
SETTORE DOTTORATI DI RICERCA

PhD Course in CLINICAL AND TRANSLATIONAL MEDICINE

Coordinator	Prof. Marco Sarchiapone e-mail: marco.sarchiapone@unimol.it	
CUN Areas	05 - Biological science 06 – Medical science 09 - Industrial and information engineering 13b - Economics and business sciences	
S.S.D.	MED/07, MED/09, MED/10, MED/11, MED/16, MED/25, MED/30, MED/33, MED/36, MED/37, MED/49, ING-IND/11, ING-INF/05, M-EDF/01, BIO/16, SECS-P/07	
Short description	The proposed PhD Course aims to form new highly professional profiles in the biomedical area, able to use advanced research technologies and interested in the implementation of research results. For this purpose, students will be provided with scientific methods and skills necessary to tackle innovative topics of a highly multidisciplinary and transversal nature, with a great impact on the basic research on the clinical management of the patient and his/her pathologies of interest, using an advanced therapeutic approach, with the support of mathematical models and the related computational analysis. In particular, a new approach to the medicine will be developed and consolidated, using "big data" analysis, through the use of Artificial Intelligence algorithms and designing new quantitative and formal methods in order to pursue a more precise and effective approach to pathogenesis of diseases. The learning outcomes are aimed at acquiring transversal skills in the medical, engineering and IT areas. Informations on the organization of the PhD activities is available on the web page of the PhD Program: http://dipmedicina.unimol.it/dottoratodipmed/	
Web Site	http://dipmedicina.unimol.it/dottoratodipmed/	
Course length	01/11/2021 – 31/10/2024	
Total available places	With scholarship	**5**
	With scholarship reserved to graduates in foreign universities	**1**
	Without scholarship	**2**
	TOTAL	**8**
	With scholarship	**6**
Admission requirements	A university degree obtained after 2-year specialization courses in: LM-6 Biology LM-8 Industrial Biotechnology LM-9 Medical, Pharmaceutical and Veterinary Biotechnologies LM-13 Pharmacy and Industrial Pharmacy LM-18 Computer Science LM-21 Biomedical Engineering LM-22 Chemical Engineering LM-25 Automation Engineering LM-29 Electronic Engineering LM-30 Energy and Nuclear Engineering LM-32 Computer Engineering LM-33 Mechanical Engineering LM-41 Medicine and Surgery	

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	LM-51 Psychology LM-53 Science and Materials Engineering LM-61 Human Nutrition LM-66 Cyber Security LM-67 Sciences and Techniques of Preventive and Adapted Physical Activities LM-77 Economic and business sciences LM/SNT1 Nursing and Obstetrics LM/SNT2 Rehabilitative Medicine LM/SNT3 Technical Health Professionals LM/SNT4 Preventive Health Professionals LM-67 Sciences and techniques of preventive and adaptive motor activity 6/S Biology 9/S Medical, Pharmaceutical, and Veterinary Biotechnologies 14/S Pharmacy and Industrial Pharmacy 26/S Biomedical Engineering 27/S Chemical Engineering 33/S Energy and Nuclear Engineering 36/S Mechanical Engineering 46/S Medicine and Surgery 58/S Psychology 63/S Cognitive Sciences 69/S Human Nutrition 76/S Preventive and Adaptive Physical Activity 84/S Management Studies SNT_SPEC/1 Nursing and Obstetrics SNT_SPEC/2 Rehabilitative Medicine SNT_SPEC/3 Technical Health Professionals SNT_SPEC/4 Preventive Health Professionals For candidates who have acquired the qualification abroad, the latter must be equivalent with those indicated above.
Assessable qualifications and relative score	**List of assessable qualifications** (score up to a maximum of **20/80)**: • Final degree mark. If the candidate has not obtained the degree at the time of submission of the application, instead of the graduation mark, the weighted average of the marks of the exams will be taken into consideration (max 8 points) • Qualifications proving the candidate's training and skills (research activity at universities and research centres, scholarships, research grants, awards, study and research experiences abroad) (max 4 points) • Scientific publications on international/national journals with peer review (max 3 points) • Oral communications and posters to national/international conferences (max 2 points) • Other qualifications certified by higher educational institutions (second level degrees, specialization courses) (max 3 points)
Examination themes and interview	**Research project** (score up to a maximum of **20/80**) Candidates are asked to actively discuss the research topics of the PhD Program through the submission of a research project. This project should be focused on one of the research topics of the Doctorate, briefly listed below: 1. Translational Medicine 2. Telemedicine 3. Radiomics and Artificial Intelligence in medicine 4. Thermal therapies 5. Biology and medicine of aging 6. Molecular epidemiology of chronic diseases 7. Mental health 8. Development of a service application platform based on Cloud architecture for management and clinical trials 9. Big Data and Formal Methods for diagnosis and prognosis of Covid-19 10. Big Data and Formal Methods for diagnosis and prognosis of oncological, infectious and metabolic pathologies. **Interview** (score up to a maximum of **40/80)** The oral exam will consist in the oral presentation of the research proposal and in a discussion of

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	the technical and scientific topics related to it. Knowledge of the English language will also be checked. For this purpose, candidates can choose to make their presentation and related discussion in English.
Criteria for the evaluation	The evaluation of qualifications and the project proposal is a prerequisite for admission to the oral exam. The results of the first phase of evaluation will be published, as soon as they are available, on the University website at https://www.unimol.it/https-www-unimol-it-ricerca/dottorati-di-ricerca-2. To be admitted to the oral exam, the candidate must report a score of not less than **20/80** (given by the sum of the evaluation of assessable qualifications and the project proposal). The maximum score achievable by each candidate is 80/80, based on the following breakdown: • *20/80 assessable qualifications* • *20/80 evaluation of the project attached to the application* o Consistency of the project proposal with the themes reported in the call (max 5 points) o Originality of the project and the contribution to knowledge in the area (max 6 points) o Clarity used to identify and describe the research objectives (max 3 points) o Project structure and feasibility (max 3 points) o Organization and synthesis (max 3 points) • *40/80 oral presentation concerning the discussion of the presented project:* o Clarity and mastery of knowledge in the area of the project - state of the art (max 13 points) o Clarity of the candidate to expose and describe the objectives, originality, expected results, contribution to the knowledge of the area and any application implications of the proposed research (max 15 points) o Candidate's ability to discuss the structure of the project, including methods (max 12 points) The results of the II phase of evaluation will be published, as soon as they are available, on the University website at the link: https://www.unimol.it/https-www-unimol-it-ricerca/dottorati-di-ricerca-2.
Ranking	Candidates with an overall score of at least **40/80** points will be included in the overall merit ranking.
Date of the Interview	Date: 9th September 2021, at 10:00 according to the timetable defined by the Commission on the basis of the number of admitted to the interview. Place: Room S6 - III Edificio Polifunzionale - University of Molise – University of Molise, De Sanctis Street; 86100 Campobasso (CB).

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