ANNEX A

PhD Course Technologies and Innovation in Medicine (DOT22BZ455)

Coordinator	Prof.ssa Antonella SANTONE e-mail: antonella.santone@unimol.it
Short description	The PhD Course in Technologies and Innovation in Medicine of the University of Molise aims to train a new generation of highly professional figures in the biomedical field, in particular in the field of diagnostics, therapy, surgery and, in general, of health protection. Also, in line with the objectives of the PNRR, students will be provided with the scientific methods and skills necessary to tackle new problems of a highly multidisciplinary and transversal nature, with great impact in both the academic and industrial fields for the clinical management of patients and their pathologies, using advanced therapeutic approaches that make use of the support of mathematical/thermofluidodynamic models and of computational analysis. Technological and innovative aspects currently involved in surgical practice will also be addressed, a morphostructural and ultrastructural knowledge of the biological signals that are analysed by the main technologies applied to medicine will be provided and skills in bioengineering, biomaterials, biomechanics, biomedical devices and regenerative medicine will be acquired. The training objectives, therefore, are aimed at acquiring a mosaic of transversal skills in the medical, engineering and IT fields. Furthermore, the PhD student will develop design and experimental skills up to achieve a good and autonomous ability in research and project management. For this purpose, interventions are planned, aimed both at increasing the cultural background of the PhD students, through courses and seminars on innovative topics in the field of medicine and bio-engineering, and to provide practical skills through continuous interaction with professors on issues relating to specific research topics carried out by the PhD students. Particular emphasis will be placed on the collaboration with laboratories and qualified research structures, including foreign ones.
Web Site	Information on the structure of PhD activities is available on the webpage of the Doctoral School, site: https://www3.unimol.it/ricerca/scuola-di-dottorato/generiche/24
Duration of the Programme	01/11/2026 – 31/10/2029
Total Number of Available Positions	**With ordinary scholarship**: **1** **Positions without scholarship**: **2** **Position with scholarship reserved to graduates in foreign universities**: **0** **Executive Scholarship Positions**: **2** **Positions with Scholarships Co-funded by Companies and Research Institutions, including a Mandatory Six-Month Placement Period in a Company and Research Institutions**: **6** **TOTAL positions with scholarship**: **9**
Admission requirements	All specialized or master's degrees, or degrees of the system prior to that introduced with the D.M. 509/1999. For candidates who have acquired the qualification abroad, the latter must have characteristics of equivalence with those indicated above.
Assessable Qualifications	List of assessable qualifications up to a maximum of **25/100:**

Via F. de Sanctis - 86100 Campobasso Tel +39 0874 40 41 - Numero verde 800 588 815
PEC: amministrazione@cert.unimol.it - sito web www.unimol.it - P. IVA 007 451 507 06 - C.F. 92008370709

and Corresponding Scores	- *Curriculum vitae et studiorum;* - 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 9 points) - Qualifications proving the candidate's education and skills (research activity at universities and research centres, scholarships, research grants, awards, study and research experiences abroad) (max 5 points) - Scientific publications on international/national journals with peer review (max 4 points) - Oral communications and posters to national/international conferences (max 3 points) - Other qualifications certified by higher educational institutions (second level degrees, specialization courses) (max 4 points)
Examination Topics and Interview *Please note that the research proposal described in the report (Annex 5), submitted for the purposes of the competition, does not necessarily correspond to the research project that will ultimately be carried out during the PhD Programme. Should the candidate be admitted, the actual research project will be subsequently defined and approved by the PhD Committee Board*	**Research project (qualifications up to a maximum of 25/100).** Candidates are asked to actively discuss the research topics of the PhD Program through the submission of a research project, an integral part of the application form, dated and signed by the candidate and drawn up in accordance with Annex 5. This project, consistent with the candidate's second level degree, should be focused on one of the research topics of the Doctorate, briefly listed below: ● Topic: Integration of multi-omics, clinical, and radiological data through Artificial Intelligence for precision medicine (2 executive scholarships funded by Montevergine SPA – Private Healthcare Clinic). ● Topic: Innovative technologies in medicine (one regular position and one industrial scholarship position with a mandatory placement period in company, funded by the University of Molise and the PR Molise FESR FSE+ Regione Molise 2021/2027). ● Topic: Novel methodologies to enhance the effectiveness of screening for the early diagnosis of lung cancer (one scholarship position co-funded by the project supported by the Italian League for the Fight Against Cancer – LILT). ● Topic: Artificial Intelligence algorithms for environmental monitoring and health protection (one scholarship position co-funded by the National Research Council (CNR) – Institute of Atmospheric Pollution Research, with the possibility of carrying out a research period at the CNR). ● Topic: Development of a novel medical device for stereotactic ablation (one scholarship position co-funded by a company, with a mandatory placement period of six months in that company, and the PR Molise FESR FSE+ Regione Molise 2021/2027). ● Topic: Artificial Intelligence and Psychology (one scholarship position co-funded by a company, with a mandatory placement period of six months in company, and the PR Molise FESR FSE+ Regione Molise 2021/2027). ● Topic: Development of advanced techniques for medical image analysis aimed at the early diagnosis and monitoring of specific diseases (one scholarship position co-funded by a company, with a mandatory placement period of six months in company, and the PR Molise FESR FSE+ Regione Molise 2021/2027).

Via F. de Sanctis - 86100 Campobasso Tel +39 0874 40 41 - Numero verde 800 588 815
PEC: amministrazione@cert.unimol.it - sito web www.unimol.it - P. IVA 007 451 507 06 - C.F. 92008370709

	Interview (qualifications up to a maximum of **50/100)** The oral exam will consist in the oral presentation of the research proposal and in a discussion of the technical and scientific topics related to it. The English language knowledge 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 the Candidates is divided into two phases: the first one concerns assessable qualifications and the project proposal. Passing this step is a prerequisite for admission to the oral exam (second phase). The results of the first phase of evaluation will be published, as soon as they are available, on the University website at site: https://www3.unimol.it/ricerca/scuola-di-dottorato/generiche/24 To be admitted to the oral exam, the candidate must report a score of not less than **25/100** (given by the sum of the evaluation of assessable qualifications and the project proposal). The maximum score achievable by each candidate is 100/100, based on the following breakdown: • ***25/100 assessable qualifications*** • ***25/100 evaluation of the project attached to the application*** o Consistency of the project proposal with the topics reported in the call (max 6 points) o Originality of the project and the contribution to knowledge in the area (max 7 points) o Clarity used to identify and describe the research objectives (max 4 points) o Project structure and feasibility (max 4 points) o Organization and synthesis (max 4 points) • ***50/100 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 17 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 18 points) o Candidate's ability to discuss the structure of the project, including methods (max 15 points) The results of the second phase of evaluation will be published, as soon as they are available, on the University website at the link: https://www3.unimol.it/ricerca/scuola-di-dottorato/generiche/24 in the specific sections dedicated to the relevant doctorate
Ranking	Candidates obtaining an overall score of at least 50/100 will be included in the final merit ranking.

Via F. de Sanctis - 86100 Campobasso Tel +39 0874 40 41 - Numero verde 800 588 815
PEC: amministrazione@cert.unimol.it - sito web www.unimol.it - P. IVA 007 451 507 06 - C.F. 92008370709

Date of the Interview	Date: September 23, 2026, at 9:30 a.m. (Rome Time, CEST), according to the schedule established by the Selection Committee on the basis of the number of candidates admitted to the interview. Venue: for candidates opting to sit the oral examination • On-site: Room S4, III Building, University of Molise, (street) Francesco de Sanctis, (postcode) 86100, (city) Campobasso, Italy. • Online: meet.google.com/jxp-pnpk-etf

Via F. de Sanctis - 86100 Campobasso Tel +39 0874 40 41 - Numero verde 800 588 815
PEC: amministrazione@cert.unimol.it - sito web www.unimol.it - P. IVA 007 451 507 06 - C.F. 92008370709