



UNIVERSITÀ  
DEGLI STUDI  
FIRENZE

Da un secolo, oltre.



HR EXCELLENCE IN RESEARCH

## DOCTORAL PROGRAM IN CLINICAL SCIENCES

*Director prof. Gian Maria Rossolini*

**XLI cycle – academic year 2025/2026**

<b>BIOMEDICAL AREA</b>	
<b>ADMINISTRATIVE OFFICE</b>	Department of Experimental and Clinical Medicine
<b>WEB</b>	<a href="http://www.dmsc.unifi.it/dottorato">www.dmsc.unifi.it/dottorato</a>
<b>CURRICULA</b>	<ol style="list-style-type: none"><li>1. Clinical Pathophysiology and Pathophysiology of Aging, Emergency Medicine, and Nursing Sciences</li><li>2. Clinical and Experimental Medicine and Radiology</li><li>3. Clinical Pathology, in Musculoskeletal Diseases and Calcified Tissues</li><li>4. Surgical Sciences</li><li>5. Psychology, Occupational Medicine, Anesthesiology and Pain</li><li>6. Therapy Infectious Diseases and International Cooperation, Global Health</li></ol>
<b>AVAILABLE POSITIONS: 10</b> Positions with Scholarship: 8 Position without Scholarship: 2* <i>* standard ranking only</i>	
<b>RANKING LIST FOR STANDARD POSITIONS SCHOLARSHIPS AVAILABLE: 6</b>	University of Florence
<b>RANKING LISTS FOR POSITION WITH SPECIFIC RESEARCH TOPIC SCHOLARSHIPS AVAILABLE: 2</b>	<p><b>1 - Fondazione Ciani Passeri Carraresi</b> <b>Thematic:</b> “SAFE – T - Physical Activity and Exercise Study after Transplant”</p> <p><b>1 - CORCYM S.r.l.</b> <b>Thematic:</b> “Aortic Valve Repair and Replacement: comparative analysis of the different available alternatives through evaluation of haemodynamic performance, long-term follow-up, clinical results and cost-effectiveness in individual and complex cases and using a minimally invasive approach.”</p>
<b>STUDY/RESEARCH PERIODS ABROAD</b>	3 months

<div>DOCUMENTS REQUIRED FOR THE ADMISSION</div> <div>(under penalty of exclusion)</div>	<div><ul style="list-style-type: none"><li>● Copy of the Identification Document</li><li>● Self-certification for qualifications obtained in Italy (laurea triennale, specialistica o magistrale o ciclo unico) with list of exams taken, credits and related grade, title of the thesis and graduation mark (using this <a href="#">template</a> or similar forms containing the required information)</li><li>● Qualifications obtained abroad (Bachelor’s and Master Degrees or combined cycle Degree) with a list of all exams taken, credits and related grade, rating scale, title of the thesis and graduation mark</li></ul></div> <div>The same documentation except for the final mark must be submitted by those who will graduate within the 31/10/2025</div>															
<div>DOCUMENTS REQUIRED FOR THE EVALUATION</div>	<div><div>MANDATORY</div><div><ul style="list-style-type: none"><li>● Curriculum Vitae et Studiorum (European Format)</li><li>● Research Project</li><li>● Copy of the Master Thesis (or equivalent)</li></ul></div><div>OPTIONAL</div><div><ul style="list-style-type: none"><li>● Publications and qualification documents (if any)</li></ul></div></div>															
<div>RESEARCH PROJECT</div>	<div>The Research Project must be <b>written in English</b> in a document containing a <b>maximum of 12,000</b> characters, including spaces and notes, it must include abstract, introduction, methods, expected results, and references. <b>The Project must refer, in a specific way, to at least one of the topics</b> listed in the "Thematics" section.</div> <div>The candidate can either submit the same research project for the standard positions and for positions with specific research topics or submit two separate projects. The application must, however, clearly specify to which position refers each project.</div>															
<div>INTERVIEW MODE</div>	<div>Remotely (videocall)</div> <div>The interview can be conducted in English language.</div>															
<div>INFORMATION ABOUT THE INTERVIEW</div>	<div>The interview consists of a discussion of the research project for the purpose of evaluating the candidate's research aptitude.</div>															
<div>EVALUATION MARKS</div>	<table><tr><th>parameter</th><th>minimum score</th><th>maximum score</th></tr><tr><td>Curriculum vitae, research project, publications and other qualification documents (if any)</td><td>40/120</td><td>60/120</td></tr><tr><td colspan="3">Applicants who obtain a mark of at least 40/120 in the evaluation of the above parameters will be admitted to the interview</td></tr><tr><td>Interview: discussion of the research project to assess applicant’s aptitude for research</td><td>40/120</td><td>60/120</td></tr><tr><td colspan="3">Eligibility is achieved with a minimum score of 80/120</td></tr></table>	parameter	minimum score	maximum score	Curriculum vitae, research project, publications and other qualification documents (if any)	40/120	60/120	Applicants who obtain a mark of at least 40/120 in the evaluation of the above parameters will be admitted to the interview			Interview: discussion of the research project to assess applicant’s aptitude for research	40/120	60/120	Eligibility is achieved with a minimum score of 80/120		
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<p><b>THEMATICS</b></p>	<p align="center"><b>Curriculum in Clinical Pathophysiology and Pathophysiology of Aging, Emergency Medicine, and Nursing Sciences</b></p> <p><b><u>Nursing area</u></b></p> <ol style="list-style-type: none"> <li>1. Organ donation in nursing sciences.</li> <li>2. Clinical risk in nursing sciences.</li> <li>3. Nursing Management of signs and symptoms.</li> </ol> <p><b><u>Medical Area</u></b></p> <ol style="list-style-type: none"> <li>1. Study of the pathogenetic, clinical and therapeutic mechanisms and of the microbiota and its modulation in rare immunovascular, autoinflammatory and metabolic diseases of adults</li> <li>2. Pathophysiology, risk factors and antithrombotic therapies of atherothrombosis</li> <li>3. Pathophysiology, risk factors and antithrombotic therapies of venous thromboembolic disease.</li> <li>4. Geriatric pathophysiology and epidemiology</li> <li>5. Pathophysiology and clinical epidemiology frailty and geriatric syndromes</li> <li>6. Aging of the vascular system and age-related diseases (cardiological, neurological, vascular): pathophysiology, clinic and rehabilitation.</li> <li>7. Neurodegenerative diseases of the elderly: pathophysiology, clinic and rehabilitation</li> <li>8. Innovative socio-health approaches for the treatment of the elderly and of geriatric syndromes</li> <li>9. Innovative organizational models in Emergency Medicine</li> <li>10. Development of new methodologies of advanced simulation to improve efficiency/efficacy of trauma team</li> </ol> <p><b>Curriculum in Clinical and Experimental Medicine and Radiology</b></p> <ol style="list-style-type: none"> <li>1. Biological basis (cellular, molecular, genetic, metabolic, microbiologic, hormonal) of immune dysregulation and of related diseases (chronic inflammatory diseases, immunodeficiencies, autoimmunity, cancer).</li> <li>2. Biomarkers, phenotyping, sex and precision therapies in immune dysregulatory diseases.</li> <li>3. The role of the new MRI (Diffusion, Perfusion) and CT parameters (Perfusion with techniques of reduction of the dose in MultiSlice–CT and ConeBeam–CT) in the pre and post therapy evaluation of the different anatomic areas (neuro and head, heart and chest, abdomen and pelvis).</li> <li>4. New Imaging techniques in the evaluation of microcirculation of fibrosing autoimmune diseases (skin, lung, musculoskeletal system).</li> <li>5. Radiomics.</li> <li>6. Genetic basis and clinical/laboratory stratification of common variable of immunodeficiency as prototype of immune dysregulation diseases: infections, autoimmunity, and tumors.</li> <li>7. Predisposing factors, physiopathology, organ involvement and innovative therapeutic approaches to autoimmunity.</li> <li>8. Predisposing factors, physiopathology, and innovative therapeutic approaches in allergic diseases.</li> </ol>
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9. Predisposing factors, physiopathology, and innovative therapeutic approaches in systemic fibrosing autoimmune diseases.
10. Study of the relationships between the immune system and the microbiota in the genesis of chronic inflammatory diseases and neoplasia.
11. Study of the intratumor and peripheral immune response in solid tumors.
12. Translational aspects of chronic hepatopathies and primitive tumors of liver.
13. Cancer immunotherapy: strategies of treatment implementation and personalization.
14. Oncogenesis and biomarkers of neoplastic evolution secondary to hepatic viruses.
15. Translational and physiopathologic aspects of hepatic cirrhosis and portal hypertension
16. Immunotherapy in autoimmunity and rare immune mediated diseases.
17. New classification and organ involvement in rheumatic diseases.

#### **Curriculum in Clinical Pathology of Musculoskeletal diseases and calcified tissues**

1. Innovative methods of assisted orthopaedic surgery
2. New biomaterials for orthopaedic and trauma surgery
3. Analysis and evaluation of the interaction between biomaterials and bone in prosthetics and traumatology
4. Tumor and pseudotumor pathologies of the musculoskeletal system
5. New technologies in osteoarticular reconstructions in orthopaedic surgery
6. Mineral and bone metabolism in clinical models of calcified tissue diseases.
7. Clinic of mineral and bone metabolism pathologies such as primary and secondary osteoporosis, osteomalacia and rare diseases of mineral and skeletal metabolism
8. Translational studies in mineral and bone metabolism disorders
9. Studies of analysis and intervention (nutritional, physiatric and pharmacological) for primary and secondary prevention of mineral and bone metabolism pathologies
10. Technological innovation in the assessment and rehabilitation treatment of people with disabilities associated with musculoskeletal pathology
11. Artificial intelligence applied to patient stratification and prediction of rehabilitation recovery in the field of musculoskeletal pathology
12. Conservative and surgical orthopaedic treatments in rare diseases with musculoskeletal involvement
13. Pathogenesis and therapy of periodontal and peri-implant disease
14. New diagnostic methods of primary and secondary osteoporosis
15. Non-pharmacological management of chronic pain syndromes.

#### **Curriculum in Surgical Sciences**

1. New techniques and technologies in the field of general, urological, thoracic, cardiac, pediatric, and vascular surgery
2. Molecular precision medicine in the field of oncological pathology of surgical interest
3. Simulation in learning new surgical techniques
4. Development of transplantation: from immunotherapy to surgery
5. Application of minimally invasive surgery in urological oncology and pediatric urology
6. Post-oncological and post-traumatic reconstructive surgery
7. Morphological and bio-molecular study of cancers of urological interest (prostatic and urothelial cancers)
8. Immunophenotype and genotype of adrenal and neural crest tumors: morphological and prognostic correlations

#### **Curriculum in Psychology, Occupational Medicine, Anesthesiology and Pain Therapy**

1. Psychological and psychosocial mechanisms involved in the onset and/or maintenance of psychological distress, mental disorders, and physical illnesses, with particular reference to the bio-psycho-social model.
2. Research methods in clinical and health psychology.
3. Psychological interventions in psychological distress, mental disorders, and physical illness.
4. Multidisciplinary approach to the study of anesthesiologic physiopathology and perioperative problems, with reference to subjects with cognitive and/or psychological frailty.
5. Emerging risk factors in occupational medicine.

#### **Curriculum in Infectious Diseases and International Cooperation, Global Health**

1. Epidemiology, clinical and diagnostic research on emerging and re-emerging infections as a global health issue.
2. Parasitic diseases and host response in endemic and non-endemic areas.
3. Vector-borne diseases and other emerging infections: one-health approach.
4. Antimicrobial resistance as a global problem: one-health approach.
5. Allergic diseases and bronchial asthma in mobile populations

EXAMINATION SCHEDULE		
	DATE	TIME
INTERVIEW	July 18 <sup>th</sup> 2025	09:00 a.m.
The list of the candidates admitted to the interview and the final ranking will be published at the page <a href="#">PhD courses</a>		