



DOCTORAL PROGRAM IN CLINICAL SCIENCES

Director prof. Lorenzo Cosmi

XXXVII cycle – academic year 2021/2022

BIOMEDICAL AREA	
ADMINISTRATIVE OFFICE	Department of Experimental and Clinical Medicine
CURRICULA	<ol style="list-style-type: none">1. Clinical Pathophysiology and Pathophysiology of Aging, Emergency Medicine, and Nursing Sciences2. Clinical and Experimental Medicine and Radiology3. Clinical Pathology, in Musculoskeletal Diseases and Calcified Tissues4. Anesthesiology, Pain Therapy and Surgical Sciences5. Psychology6. Global Health, Occupational Health, and International Cooperation on Moving Populations
AVAILABLE POSITIONS: 11 Positions with Scholarship: 9 Positions without Scholarship: 2	
RANKING LIST FOR STANDARD POSITIONS SCHOLARSHIPS AVAILABLE: 9	6 - University of Florence 3 - Department of Experimental and Clinical Medicine – Progetto Ministeriale “Dipartimenti di eccellenza 2018 -2022” with the following topics: <ol style="list-style-type: none">1. Thematic: “Clinical-diagnostic pathways in the evaluation and management of post-COVID19 complications”.2. Thematic: “Pathophysiology of Sars-cov-2 disease: study of the virus and the host”.3. Thematic: “Innovative strategies for research and diagnosis of Sars-cov-2 disease: a model to manage the re-occurrence of the pandemic and the spread of other emerging infectious diseases”.
STUDY/RESEARCH PERIODS ABROAD	Not mandatory
DOCUMENTS REQUIRED FOR THE ADMISSION (under penalty of exclusion)	<ul style="list-style-type: none">• Copy of the Identification Document• Self-declaration for qualifications (bachelor’s/Master’s/combined cycle degree) obtained in Italy with a list of all exams taken and their mark, title of the thesis and graduation mark (download the form here make sure you fill in in all the fields)

	<ul style="list-style-type: none"> Foreign qualification required to access with a list of all exams taken and their mark, title of the thesis and graduation mark. <p><i>The same documentation except for the final mark must be submitted by those who will graduate by 31/10/2021</i></p>															
DOCUMENTS REQUIRED FOR THE EVALUATION	<p>MANDATORY</p> <ul style="list-style-type: none"> Curriculum Vitae et Studiorum (European Format) Research Project Copy of the M.Sc. Thesis (or equivalent) <p>OPTIONAL</p> <ul style="list-style-type: none"> Publications and qualification documents (if any) 															
RESEARCH PROJECT	<p>The Research Project must be written in English in a document containing a maximum of 12,000 characters, including spaces and notes, it must include abstract, introduction, methods, expected results, and references. The Project must refer, in a specific way, to at least one of the topics listed in the "Thematics" section or those indicated in the Progetto Ministeriale "Dipartimenti di Eccellenza 2018-2022" section</p>															
EVALUATION PROCEDURE	<ul style="list-style-type: none"> Evaluation of the curriculum, research project, publications and other qualification documents (if any) Interview <p>According to the scoring detailed in the section below "Evaluation Marks".</p>															
OTHER LANGUAGE FOR THE INTERVIEW	English															
INTERVIEW MODE	Remotely (videocall)															
EVALUATION MARKS	<table border="1"> <thead> <tr> <th>parameter</th> <th>minimum score</th> <th>maximum score</th> </tr> </thead> <tbody> <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> </tbody> </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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THEMATICS	<p>Curriculum in Clinical Pathophysiology and Pathophysiology of Aging, Emergency Medicine, and Nursing Sciences</p> <p><u>Nursing area</u></p> <ol style="list-style-type: none"> Organ donation in nursing sciences. Clinical risk in nursing sciences. Nursing Management of signs and symptoms. 															

Medical Area

1. Pathogenetic and Therapeutic Mechanisms of immunovascular diseases.
2. Pathogenetic and Therapeutic Mechanisms of pulmonary obstructive diseases.
3. Pathophysiology of atherosclerosis.
4. Mechanisms of action, efficacy and safety of antithrombotic therapy.
5. Pathophysiology of acute coronary syndromes.
6. Atherogenic dyslipidemias: from genetic diagnosis to pharmacological treatment.
7. Venous thromboembolism: new pathogenetic mechanisms.
8. Biomolecular mechanisms of aging and age-related diseases.
9. Pathophysiology and clinical epidemiology of age-related fragility and disability.
10. Aging of cardiovascular system and age-related cardiomyopathies.
11. Pathophysiology and clinical epidemiology of the cognitive decline in the elderly.
12. The management of major traumas in Italy and Europe.
13. Development of new methodologies of advanced simulation for the implementation of the trauma team efficiency/effectiveness.
14. Pathophysiology of and new rehabilitation approaches to freezing of gait in Parkinson's disease.
15. Rehabilitation interventions of walking based on powered exoskeleton in subjects with spinal cord injury.
16. Rehabilitation approaches to rheumatoid arthritis in elderly.
17. Innovative approaches for rehabilitating subjects with stroke outcomes: action observation therapy, motor imagery, mirror therapy.

Curriculum in Clinical and Experimental Medicine and Radiology

1. Biological basis (cellular, molecular, genetic, metabolic, microbiologic, hormonal) of immune dysregulation and of related diseases (chronic inflammatory diseases, immunodeficiencies, autoimmunity, cancer).
2. Biomarkers, phenotyping, sex and precision therapies in immune dysregulatory diseases.
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).
4. New Imaging techniques in the evaluation of microcirculation of fibrosing autoimmune diseases (skin, lung, musculoskeletal system).
5. Radiomics.
6. Genetic basis and clinical/laboratory stratification of common variable of immunodeficiency as prototype of immune dysregulation diseases: infections, autoimmunity, and tumors.
7. Predisposing factors, physiopathology, organ involvement and innovative therapeutic approaches to autoimmunity.
8. Predisposing factors, physiopathology, and innovative therapeutic approaches in allergic diseases.
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. Crioglobulinemic syndromes and lymphoproliferative disorders in the infections hepatitis virus-related.
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. 1. Innovative methods of assisted orthopedic surgery.
2. New biomaterials for orthopedic surgery and traumatology.
3. Analysis and evaluation of the interaction between biomaterials and bone in prosthetic surgery and traumatology.
4. Mineral and bone metabolism in clinical models of calcified tissues diseases.

Curriculum in Anesthesiology, Pain Therapy and Surgical Sciences

Surgical area

1. New techniques and mini-invasive technology in general, urologic and vascular surgery.
2. Molecular precision medicine in gastrointestinal oncology.
3. Guided surgery guided by virtual reality in 3D.
4. New technologies in the mini-invasive and conservative surgery of Crohn disease.
5. Optimization of the surgical procedure in the pre-, intra- e postsurgical phases in IBD.
6. Role of simulation in learning new surgical techniques.
7. The development of renal transplantology, from immunotherapy to surgery.
8. Technological innovations in the surgical treatment of benign prostate hypertrophy.
9. The role of neuronal and non-neuronal TRP channels in inflammatory neuropathic and oncologic pain.
10. Molecular bases of the GGRP dependent mechanism in the genesis of pain in headache.
11. Advanced surgical treatments for acute and chronic cardiac failure.

Anesthesiology Area

1. Advantages and limits of the use of long term central venous catheterization.
2. Pathways of perioperative medicine.
3. Perioperative acute renal damage in high complexity interventions.

Curriculum in Psychology:

1. Psychological and/or psychosocial mechanisms underlying the onset or

	<p>maintenance of psychological distress, psychiatric disorders, and organic diseases.</p> <ol style="list-style-type: none"> 2. Research methods in clinical and health psychology. 3. Psychological interventions in psychological distress, psychiatric disorders, and organic diseases. <p style="text-align: center;">Curriculum in Global Health, Occupational Health, and International Cooperation on Moving Populations</p> <ol style="list-style-type: none"> 1. Epidemiology and clinics of emergent and re-emergent infections in countries with a medium and low income and in moving (or migrant) populations. 2. Diagnostic approach of emergent and re-emergent infections in countries with a medium and low income and in moving (or migrant) populations. 3. Parasitosis and host response in developing countries and in moving populations. 4. Tuberculosis and Helicobacter pylori host response in developing and in moving populations. 5. Allergic diseases and bronchial asthma in moving populations. 6. Emerging and re-emerging occupational risks: innovative strategies for health and safety protection of workers. 7. Workplace Health Promotion (WHP): from Evidence-Based Medicine to practice.
<p>Further information available at the following web page: https://www.dmsc.unifi.it/vp-26-dottorati-di-ricerca.html</p>	

EXAMINATIONS SCHEDULE		
	DATE	TIME
INTERVIEW	September 16 th 2021	9:00 a.m.
<p>The list of candidates admitted to the interview and the final ranking will be published at the following web page: https://www.unifi.it/p12018.html</p>		