PhD Programme Table - 38th cycle
NRRP "National Recovery and Resilience Plan" Call for Applications

Funded by the European Union
NextGenerationEU

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

PROGRAMME'S NAME	CARDIO NEPHRO THORACIC SCIENCES
DURATION	3 years
PROGRAMME START DATE	01/11/2022 (DD/MM/YYYY)
LANGUAGES	Italian, English
COORDINATOR	Prof. Gaetano Domenico Gargiulo (gaetano.gargiulo@unibo.it)
CURRICULA	1. Cardiology/Cardiac Surgery 2. Nephrology/Urology 3. Pulmonary Diseases/Thoracic Surgery
RESEARCH TOPICS	Detailed list at the bottom of the present document
PhD POSITIONS	4
ADMISSION PROCEDURE	Research proposal evaluation Oral examination

Available Positions and Scholarships

Pos. n.	Financial Support	Description	Positions linked to a specific research topic
1	***PhD Scholarship Ex M.D. 351/2022 - NRRP Research***	Funded by the EU - NextGenerationEU with funds made available by the National Recovery and Resilience Plan (NRRP) Mission 4, Component 1, Investment 4.1 (MD 351/2022) – NRRP Research	Novel robotic platforms in urological surgery: evaluation of the learning curve and development of metrics
2	***PhD Scholarship Ex M.D. 351/2022 - NRRP Research***	Funded by the EU - NextGenerationEU with funds made available by the National Recovery and Resilience Plan (NRRP) Mission 4, Component 1, Investment 4.1 (MD 351/2022) – NRRP Research	Use of humanized antibodies as treatment for chronic active antibody-mediated rejection in kidney transplant recipients
3	***PhD position without scholarship***		Radical prostatectomy and guided robotic renal tumorectomy with three-dimensional augmented reality: oncological and functional results
4	***PhD position without scholarship***		Molecular pathogenethic features in Diffuse Idiopathic Pulmonary Neuroendocrine Cell Hyperplasia (DIPNECH) and in reactive PNECH surrounding solitary lung carcinoid tumors

Applicants awarded with Ex M.D. 351/2022 or Ex M.D. 352/2022 PhD scholarships shall have specific obligations (i.e. mandatory research periods abroad and/or in a firm) during their PhD programme. For detailed information, refer to the Call for Applications, articles 1.2 and 1.3, and to the text of the law.

Admission Exams

The admission exams detailed schedule shall be published **starting from July 12th, 2022:**

- on the University website, selecting the relevant PhD Programme > "More information", at the bottom of the page in the section "Notices";
- on Studenti Online (select "summary of the requests in progress" > "see detail" and open the .pdf file at the bottom of the page). **No personal written communication will be sent to applicants**.

Required and Supporting Documents to be attached to the application

All the documents listed below **shall be drawn up in English or in Italian**. In case of documents originally issued in any other language (e.g. identity document, qualifications), an official translation is required.
Only qualifications obtained **during the last 5 calendar years** shall be taken into consideration, except for the University Degree. The Admission Board will assess the relevance of the supporting documents to the PhD Programme.

REQUIRED DOCUMENTS	
Identity document	Valid identity document with photo (i.e. identity card, passport)
Curriculum Vitae	No specific CV format is required
Degrees	Documents attesting the awarding of the first and second cycle degrees, the exams taken and the marks obtained (see Art. 3 of the Call for Applications)
Research proposal	Multi-annual research proposal, with special emphasis on the **activities to be completed during the first-year course**. The proposal must meet the following requirements: - it must **mention on the cover page the Curriculum and/or the main research topics** the applicant is interested to and the proposal is about; - **it cannot exceed 20,000 characters**, including spaces and formula possibly used. This figure does not include: the title of proposal, the outline, references and images (such as graphs, diagrams, tables, etc. - if present); - **it must include**: the state of the art; description of the proposal; expected results; articulation of the proposal and implementation times; outlining of the criteria meant to be used to assess the research results; references.
SUPPORTING DOCUMENTS	
Thesis abstract	Abstract of the **second cycle degree thesis.** Graduands applicants may submit the draft of the thesis. Abstracts cannot exceed 5,000 characters, including spaces and formula possibly used. The above figure does not include: the title of the thesis, the outline, references, and images such as graphs, diagrams, tables etc.
Publications	Lists of publications (i.e. monographs, articles on scientific journals), minor publications (conference papers, etc.), abstracts and posters presented during national and international conferences, etc.
Other documents	- Postgraduate vocational training programmes relevant to the PhD Programme main research topics - Specialisation thesis (abstract or full text) - Documents attesting the applicant's foreign languages proficiency - Periods of study abroad, completed by applicants outside their countries of origin (e.g. Erasmus programme or other similar mobility programmes) - Other qualifications attesting the suitability of the applicants (scholarships, prizes, etc.)

Evaluation criteria*

Scores will be expressed in points out of 100, as follows.

1. Qualifications and research proposal evaluation

Minimum score for admission to the oral examination: 30 points, Maximum score: 50 points

Scientific value and ground-breaking nature of the proposal	20 points max
Structure of the proposal	15 points max
Proposal feasibility	15 points max

2. Oral examination

Minimum score for eligibility: 30 points, Maximum score 50 points

English language proficiency	10 points max
Research proposal presentation	30 points max
General knowledge of issues encompassed by the PhD Programme	10 points max

Oral examination aims to assess the suitability of the applicant for scientific research as well as the general knowledge of issues encompassed by the PhD Programme (see the list of research topics at the bottom of the present document). During the oral examination, the applicant's English language proficiency shall be assessed.
The oral examination is carried out in Italian or in English.
* Possible further evaluation criteria will be available on the University website, selecting the relevant PhD Programme > "More information".

Research Topics

Curriculum 1: Cardiology/Cardiac Surgery

- Pulmonary Hypertension: Pharmacotherapy of induction
- New perspectives in the treatment of acute and chronic ischemic heart disease
- New approaches to percutaneous treatment of aortic and mitral valve disease
- Personalized therapy, "genetic driven", of cardiomyopathies
- New techniques of catheter ablation for the treatment of arrhythmias
- Brain protection in aortic arch surgery. Myocardial protection in cardiac surgery
- Heart transplantation. Aortic valve replacement with prosthesis "sutereless"
- "Frozen elephant trunk technique" surgery for extensive diseases of the thoracic aorta
- Decellularized scaffolds in pediatric cardiac surgery.

Curriculum 2: Nephrology/Urology

- Imaging in the diagnosis, staging and restaging of prostate cancer evaluation of the role of new radiotracers for PET and identify the presence of lymph node metastases using the histological gold standard diagnostic
- to determine the role of PET in restaging of patients with recurrent disease and assess the main clinical indicators may be related to a positive imaging
- to evaluate the multiparametric MR in the local staging of disease prior to surgery and in patients in active surveillance for prostate cancer indolent
- Laparoscopy in urology oncology
- Application of laser technology for the treatment of benign prostatic hypertrophy (HoLEP)
- retrograde treatment of kidney stones through the use of flexible instruments (RIRS, retrograde intrarenalsurgery) and the technique combined antegrade-retrograde (ECIRS (endoscopiccombinedintrarenalsurgery)

Curriculum 3: Pulmonary Diseases/Thoracic Surgery

- Technological innovations innthe treatment of acute and cronic respuratory failure
- Physiopathological mechanisms of exacerbation of chronic respiratory disorders
- Home monitoring for chronic respiratory patients
- Prevention of the respiratory infections in critically ill patients
- Surgical therapy of experimental model of pulmonary hypertension
- Pathogenetic factors of fibrosis in the esophageal gastro-esophageal reflux disease
- Biomolecular characterisctics of pathogenesis of esophageal adenocarcinoma
- The neuroendocrine tumors of the chest: from neuroepithelial bodies & Co. to disease
- The role of the genetic and biomolecolar markers for a multidsciplinary tailored therapy
- The minimally-invasive diagnostic and therapeutic approach to lung cancer: between present time and future perspectives
- Study of pulmonary regeneration after pneumonectomy: experimental models and their applications
- Enhancing lung transplantation: ex-vivo lung perfusion and other techniques.