



Name of the study course	Innovative Sciences and Technologies for Health
Cycle	37
Presumed starting date	01/10/2021
Expected duration	3 YEARS
Department / Applicant scientific organization	Department of Medical and Surgical Sciences
Coordinator	Prof. Elena Ranieri – Full professor of MED/05 – University of Foggia
Positions available	<p>15 positions:</p> <p>9 positions with scholarship funded by the University of Foggia (2 of which are reserved to graduated from a foreign university)</p> <p>The scholarship reserved for students with a foreign degree will be assigned to the candidate among them who is eligible for admission according to the order of the merit ranking. In the case of non-assignment, the mentioned scholarship is available to eligible candidates according to the merit ranking.</p> <p>3 places with scholarship funded by Apulia Region – Avviso 1/POC/2021 “Dottorati di ricerca in Puglia XXXVII ciclo”, published on BURP n. 66 del 13/05/2021. The aforementioned grants are conditioned by the signing of the Unilateral Obligation Act with subsequent obligations</p> <p>3 positions without scholarship.</p> <p>The Candidates may select one of the three curricula of the PhD course, indicating it in the Research Project.</p> <p>The Examination Board will outline a single merit ranking for the three curricula.</p> <p>Three positions with scholarship will be reserved to the “Economics and Governance of Healthcare Innovation” curriculum.</p> <p>If in the “Economics and Governance of Healthcare Innovation” curriculum there are not at least three candidates who have gained a score $\geq 72/120$, the residual scholarships will be re-assigned to other curricula. In detail, qualified candidates without scholarship in the remaining curricula will receive the scholarship according to the highest final merit score.</p>



<p>Curricula</p>	<p>YES</p> <p>1. Innovative Biotechnologies:</p> <ul style="list-style-type: none"> • Biotechnologies applied to organ transplants • Predictive medicine and new biomarkers in human pathology • Development of innovative diagnostic technologies • Biotechnologies for the characterization, molecular diagnostics, imaging and personalization of cancer therapy and rare diseases <p>2: Innovative Methodologies in Clinical Research</p> <ul style="list-style-type: none"> • Technologies for the study of emerging infectious diseases through big data analysis • Innovation and robotic surgery • Regenerative medicine • Bioinformatics and artificial intelligence for innovation in the National Health System • Telemedicine and proximity medicine <p>3: Economics and Governance of Healthcare Innovation</p> <ul style="list-style-type: none"> • Risk management • Innovative tools to support medical decision-making processes • Governance of innovation in the health sector: Liability, Privacy, Security and Sustainability • Geo-spatial models of vulnerability and regional analysis predictors for health • Law, health responsibility and new technologies • BCT and new business models in medicine
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Admission requirements

Master's degrees

All Specialist Degrees or all Degrees earned according to the set of laws in force before Min. Decree 509/99 and equivalent educational qualifications.

Admission procedure:

Admission procedure:

- Evaluation of educational qualifications
- Oral test
- Language
- Research project



For those who earned a degree **NO**
abroad, is the admission procedure
different for candidates who earned their
degree in Italy?

Entrance exams:

The examination calendar will be published exclusively on the [website: www.unifg.it](http://www.unifg.it) and on the electronic bulletin board of the University. Such publication has the value of a **notification** for all legal purposes and will take place at least 20 days before the dates set for the exams.

Study course description and objectives

The PhD course, with a multidisciplinary approach, will train researchers in technologies and innovation for health. There are three curricula:

1. Innovative Biotechnologies:

- **Biotechnologies applied to organ transplants**
- **Predictive medicine and new biomarkers in human pathology**
- **Development of innovative diagnostic technologies**
- **Biotechnologies for the characterization, molecular diagnostics, imaging and personalization of cancer therapy and rare diseases**

2: Innovative Methodologies in Clinical Research

- **Technologies for the study of emerging infectious diseases through big data analysis**
- **Innovation and robotic surgery**
- **Regenerative medicine**
- **Bioinformatics and artificial intelligence for innovation in the National Health System**
- **Telemedicine and proximity medicine**

3: Economics and Governance of Healthcare Innovation

- **Risk management**
- **Innovative tools to support medical decision-making processes**
- **Governance of innovation in the health sector: Liability, Privacy, Security and Sustainability**
- **Geo-spatial models of vulnerability and regional analysis predictors for health**
- **Law, health responsibility and new technologies**
- **BCT and new business models in medicine**

The PhD course will be an interdisciplinary working platform to develop health technologies in the fields of pre-clinical and clinical research and in the health governance. The organization of 3 curricula offers parallel training opportunities focused on the technological innovation and guarantees a semester of multidisciplinary integration. The public and private partners will guarantee internships and stages for PhD students.

General objectives of the PhD Course:

- provide students with a solid theoretical-practical background to enable them to acquire suitable knowledge of the most advanced technologies related to pre-clinical and clinical research and to the health governance;
- ensure high - quality educational research training;
- promote the acquisition of transversal skills for different research areas;
- create an international network of skills in fund raising activities through the establishment of scientifically competitive partnerships.

Envisaged employment and professional opportunities

The PhD course has been expected to train researchers within the Universities and the private companies and to develop research initiatives in the health technology area.

The "Innovative Biotechnology" curriculum will provide specialized skills required in public and private research laboratories, hubs and start-ups, aimed to favour the technology transfer to companies in the pharmaceutical and biotechnology field.

The curriculum in "Innovative Methodologies in Clinical Research" will train professional profiles required in public and private clinical research centres within the national health service and the biomedical companies.

The "Economics and governance of health innovation" curriculum represents an absolute novelty as it will train bridge figures between health governance and tools of technological development and innovation and they will be able to work in different structures of the Health Service (Regional Health Agencies, ASL, IRCCS, Ministry of Health).

Doctoral curricula related to the Doctoral Course

Curriculum 1 -

Academic discipline	Academic recruitment field	CUN ¹ VQR ² areas concerned	Impact in % of each SSD ³ on the scientific project subject of the course
BIO/09 Physiology	05/D - Physiology	05 - Biological sciences	% 2,90
BIO/13 - Experimental Biology	05/F - Experimental Biology	05 - Biological sciences	% 18,10
BIO/14 - Pharmacology	05/G - Experimental and Clinical Pharmacology	05 - Biological sciences	% 5,95
BIO/16 - Human anatomy	05/H - Human Anatomy and Histology	05 - Biological sciences	% 5,95
BIO/17 - Histology	05/H - Human Anatomy and Histology	05 - Biological sciences	% 12,45
BIO/18 - Genetics	05/I - Genetics and General Microbiology	05 - Biological sciences	% 12,45



Academic discipline	Academic recruitment field	CUN ¹ VQR ² areas concerned	Impact in % of each SSD ³ on the scientific project subject of the course
ING-INF/05 - Information processing systems	09/H - Computer Engineering	09 - Industrial and information engineering	% 5,95
MED/03 - Medical Genetics	06/A - Pathology and Laboratory Diagnostics	06-Medical Sciences	% 5,95
MED/04 - General Pathology	06/A - Pathology and Laboratory Diagnostics	06-Medical Sciences	% 5,95
MED/05 - Clinical Pathology	06/A - Pathology and Laboratory Diagnostics	06-Medical Sciences	% 12,45
MED/07 - Clinical Microbiology	06/A - Pathology and Laboratory Diagnostics	06-Medical Sciences	% 5,95
MED/08 - Pathology	06/A - Pathology and Laboratory Diagnostics	06-Medical Sciences	% 5,95
<i>Curriculum in collaboration with:</i>			
TOTAL			100%

Curriculum 2 –

Academic discipline	Academic recruitment field	CUN-VQR areas concerned	Impact in % of each SSD on the scientific project subject of the course
MED/06 - Medical oncology	06/D - Specialist Medical Clinic	06-Medical Sciences	% 4,83
MED/09 - Internal Medicine	06/B - General Medical Clinic	06-Medical Sciences	% 4,83
MED/10 - Respiratory diseases	06/D - Specialist Medical Clinic	06-Medical Sciences	% 4,83
MED/11 - Cardiovascular diseases	06/D - Specialist Medical Clinic	06-Medical Sciences	% 4,83
MED/12 - Gastroenterology	06/D - Specialist Medical Clinic	06-Medical Sciences	% 4,83



Academic discipline	Academic recruitment field	CUN-VQR areas concerned	Impact in % of each SSD on the scientific project subject of the course
MED/13 - Endocrinology	06/D - Specialist Medical Clinic	06-Medical Sciences	% 2,42
MED/14 - Nephrology	06/D - Specialist Medical Clinic	06-Medical Sciences	% 4,83
MED/15 - Blood diseases	06/D - Specialist Medical Clinic	06-Medical Sciences	% 4,83
MED/16 - Rheumatology	06/D - Specialist Medical Clinic	06-Medical Sciences	% 4,83
MED/17 - Infectious diseases	06/D - Specialist Medical Clinic	06-Medical Sciences	% 4,83
MED/18 - General surgery	06/C - General Surgical Clinic	06-Medical Sciences	% 2,42
MED/21 - Thoracic surgery	06/F - Integrated Surgical Clinic	06-Medical Sciences	% 2,42
MED/23 - Heart surgery	06/E - Specialist Surgical Clinic	06-Medical Sciences	% 2,42
MED/24 - Urology	06/E - Specialist Surgical Clinic	06-Medical Sciences	% 10,14
MED/28 - Oral diseases and dentistry	06/E - Specialist Surgical Clinic	06-Medical Sciences	% 10,14
MED/30 - Eye diseases	06/F - Integrated Surgical Clinic	06-Medical Sciences	% 2,42
MED/34 - Physical and rehabilitation medicine	06/F - Integrated Surgical Clinic	06-Medical Sciences	% 4,83
MED/36 - Diagnostic imaging and radiotherapy	06/I - Radiological Clinic	06-Medical Sciences	% 4,83
MED/38 - General and subspecialty paediatrics	06/G - Pediatric Clinic	06-Medical Sciences	% 4,83
MED/41 - Anaesthesiology	06/L - Anesthesiological Clinic	06-Medical Sciences	% 4,83
MED/42 - Hygiene and public health	06/M - Public Health	06-Medical Sciences	% 4,83



Academic discipline	Academic recruitment field	CUN-VQR areas concerned	Impact in % of each SSD on the scientific project subject of the course
Curriculum in collaboration with:			
TOTAL			100%

Curriculum 3 –

Academic discipline	Academic recruitment field	CUN ¹ VQR ² areas concerned	Impact in % of each SSD ³ on the scientific project subject of the course
AGR/01 - Agricultural economics and rural appraisal	07/A - Agricultural Economics and Estimate	07 - Agricultural and Veterinary Sciences	% 9,91
IUS/01 - Private law	12/A - Private Law	12 - Legal Sciences	% 9,91
IUS/04 - Business Law	12/B - Commercial and Labor Law	12 - Legal Sciences	% 20,72
SECS-P/06 - Applied Economics	13/A - Economics	13 - Economics and Statistics Sciences	% 9,91
SECS-P/07 - Business Administration and Management	13/B - Business Administration and Management	13b - Business Administration and Management	% 9,91
SECS-P/08 - Management	13/B - Business Administration and Management	13 - Economics and Statistics Sciences	% 9,91
SECS-P/11 - Financial Markets and Institutions	13/B - Business Administration and Management	13 - Economics and Statistics Sciences	% 9,91
SECS-P/13 - Commodity Science	13/B - Business Administration and Management	13 - Economics and Statistics Sciences	% 9,91
SECS-S/06 - Mathematical methods of economy, finance and actuarial sciences	13/D - Statistics and Mathematical Methods for Decision Making	13 - Economics and Statistics Sciences	% 9,91



Academic discipline	Academic recruitment field	CUN ¹ VQR ² areas concerned	Impact in % of each SSD ³ on the scientific project subject of the course
<i>Curriculum in collaboration with:</i>			
TOTAL			100%

Disciplinary and interdisciplinary educational activity

<i>Ad hoc</i> teachings included in the training process	Tot CFU: 30	No. of teachings: 8	for which a final verification is foreseen: 8
Teachings borrowed from master's degree courses	SI	<i>total teaching subjects: 1</i>	for which a final verification is foreseen: 1
Teachings borrowed from bachelor's degree courses	NO		
Seminar cycles	YES		
Research internships ITALY – outside of the institutions involved	YES		Average estimated period (months per student): 3
Research internships ABROAD - within the ambit of the institutions involved	YES		Average estimated period (months per student): 3
Research internships ABROAD – outside of the institutions involved	YES		Average estimated period (months per student): 3

Description of training activities

Type	Synthetic description
Linguistics	Advanced English language courses to be held at the University Language Center (CLA) are foreseen
Computer Science	Foreign PhD students may attend Italian language courses
Management of research,	Seminars and workshops in advanced computer science, data analysis and



Type	Synthetic description
knowledge of research systems and funding systems	management, use of specialist software for elementary and advanced statistical processing are foreseen
Valorization of research results and intellectual property	Training meetings on: epistemology and semantics of research, research dissemination systems (publications and citation databases) fundraising (related to national and international calls) are foreseen

- ¹ National University Council
- ² Evaluation of research quality
- ³ Scientific disciplinary sector
- ⁴ University credits