

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF MEDICINE

Programme Title: Molecular Basis of Human Diseases

Programme Director: Dimitris Kardassis, PhD

Programme presentation

The graduate program "Molecular Basis of Human Diseases" offers graduate level education and research training in the molecular basis of human diseases. The program has been organized in accordance with international standards for graduate education and capitalizes on the knowledge that has been acquired from the human sequencing project and on the progress that has been made in biomedical sciences both at the basic and the clinical level.

The major strength of the Program is its human potential (medical students and faculty of the University of Crete Medical School and collaborating institutions). One of its major goals is to promote the scientific cooperation between faculty in the basic and clinical departments through the joint supervision of students and the implementation of joint projects. The students of the program are graduates of Schools of Health or Basic Sciences. The faculty of the University of Crete and faculty from other Departments or Institutions with expertise in the molecular basis of disease participate in the program. Collaborating Institutions in Greece include the IMBB-FORTH, the BRFA, the NCSR Demokritos and the Fleming Institute among others.

The graduate students of the program are expected to acquire the following skills:

- skills in understanding the basic concepts of molecular medicine
- skills in understanding the basic principles of basic and clinical research methodologies and of biostatistics
- skills in using biomedical data bases
- skills in reviewing the literature and writing review articles on specific subjects
- skill in lab safety and good laboratory practice
- skills in presenting original and review articles to an audience
- skills in following lectures and taking exams in the English language
- skills in writing a research proposal
- skills in conducting original research

The infrastructure that will be used by the program is the following:

- the auditoriums, the conferences rooms and the laboratories of the faculty of Medicine of the University of Crete
- the laboratories of collaborating investigators
- the facilities of the Institute of Molecular Biology and Biotechnology of Crete
- the facilities and the clinics of the University Hospital of Heraklion (total capacity: 700 beds)

Programme degrees and titles

The program awards Master's degree in "The Molecular Basis of Human Disease"

Duration of studies

The students are expected to complete all the requirements for the Master's degree within a period of 4 semesters (24 months). An extension of a maximum of two additional semesters can be granted based on a justified request by the student and the approval of the Coordinating Committee of the program

All students that are accepted in the program are anticipated to study on a full time basis. Under exceptional circumstances, a suspension of studies can be granted by the Coordinating Committee of the program up to a period of 12 months.

Programme Structures and Features

All lectures and exams are given in English by faculty of the University of Crete and collaborators from Europe or the United States. The students are allowed to write their Master's theses in English.

A total of 120 credits (ECTS hours) are required for the completion of the Master's degree.

The current curriculum of the program is as follows:

Course code	Course title	ECTS
1st Semester		
MBNA-101	Introduction to the Molecular and Genetic Basis of Human Diseases – Introduction to Basic research Methodology	6
MBNA-102	Graduate Lab	2
MBNA-103	Metabolic and Cardiovascular Diseases	8
MBNA-104	Autoimmune/Autoinflammatory/Infectious Diseases	4
MBNA-105	Cancer	2
MBNA-106	Neuropsychiatric Diseases	2
MBNA-107	Regenerative Medicine and Stem Cells	2
MBNA-108	Biostatistics, Clinical Methodology and Epidemiology	2
MBNA-109	Presentations of original papers and writing of a research proposal- Research ethics and laboratory safety	2
2nd Semester		
MBNA-110	1 st Laboratory Rotation	15
MNBA-111	2 nd Laboratory Rotation	15
3rd Semester		
MBNA -112	Original research	30
4th Semester		
	Data analysis and writing of the thesis	30
	Total:	120

All the requirements for the Master's degree can be considered fulfilled when the student:

- has completed all 4 semesters,
- passed the exams and performed well in the two laboratory rotations (average grade >7)
- completed a research project and wrote the Master's thesis (grade >7)
- Obtained a minimum of 120 ECTS hours.

The final grade of the Master's degree is calculated based on the following formula:

Average grade in courses (40%) + average grade in the two rotations (20%) + Master's thesis (40%)

Criteria for Admission

Eligible applicants for the program are holders of BSc degrees from Schools of Health Sciences (Departments of Medicine, Dentistry, Pharmacy and Nursing) or Schools of Basic Sciences (Biology, Biochemistry, Molecular Biology, Biotechnology) of National Universities or equal degrees from Universities of other countries.

Each academic year the maximum number of students that can be accepted by the program is 15. The exact number of incoming students is decided by the Coordinating Committee based on the number and the quality of the applicants.

The evaluation of the applicants and the selection of the new students is done by the Coordinating Committee or by an ad hoc Selection Committee that is appointed by the Coordinating Committee.

The selection of the incoming students is based on the following criteria:

a. the grade point average of the student's diploma; b. The grades in the undergraduate courses that are relevant to the program; c. The grade of the undergraduate diploma thesis; d. any research activities of the student during the undergraduate studies; e. letters of recommendation; f. perfect knowledge of the English language; g. other skills that the selection committee will be consider as critical. If the applicant is not able to be physically present at the interviews, an interview via telephone or Skype could be arranged.

Contact details of administrative and/or academic staff

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Funding opportunities

Graduate fellowships can be awarded to the incoming students depending on the resources of the program. The selection of the students that will receive the fellowships is done by the Coordinating Committee and is based on the following criteria: the overall performance of the student in the program, prior research experience, publications if any and the financial status of the students.

The program encourages the students to apply for fellowships from the University of Crete (Manasaki fellowships) or nonprofit organizations/foundations (IKY, Onassis Foundation, Bodossakis Foundation, Propontis Foundation etc).