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Postgraduate Program

INFORMATION TECHNOLOGIES IN MEDICINE AND BIOLOGY

1ST DIRECTION
MEDICAL INFORMATICS

2ND DIRECTION
BIOINFORMATICS

INFORMATION AT:
<http://itmb.di.uoa.gr>

THE POSTGRADUATE PROGRAM "INFORMATION TECHNOLOGIES IN MEDICINE AND BIOLOGY" (I.T.M.B.)

The rapid advances in the fields of Biomedical Imaging, Medical Informatics and Bioinformatics, as well as their wide spreading use in Life Sciences (medicine, biology, biotechnology) create new challenges but also exciting new career opportunities for young, dynamic university graduates with different backgrounds (computer scientists, engineers, biologists, medical doctors etc) who are willing to deepen their understanding by combining knowledge sources and specialize in these important and fast developing fields that heavily depend on advanced Information Technology skills.

The Postgraduate Program "Information Technologies in Medicine and Biology" (I.T.M.B.) is by its very nature intensely interdisciplinary. Its objective is to strengthen the knowledge and skills of its postgraduate students in the application of informatics, applied mathematics, and statistical analysis methods in Life Sciences and Biotechnology. The program focuses on subjects related to the organization, management, processing and analysis of biomedical signals and data, as well as on the development of models, algorithms, analysis methods and software tools for bioinformatics, computational biology and systems biology.

The I.T.M.B. Postgraduate Program is organized and administered by the Department of Informatics and Telecommunications of the National and Kapodistrian University of Athens (UoA), in cooperation with the Technological Educational Institute (TEI) of Athens, and in collaboration with the Foundation for Biomedical Research of the Academy of Athens (BRFAA) and the Institute of Informatics and Telecommunications of the National Centre for Scientific Research "Demokritos". The courses are taught by Professors and Researchers of the above institutions with experience in the Program's fields of study, and by scientists-specialists of other institutions in Greece and abroad.

The Postgraduate Program I.T.M.B awards a Master of Science (M.Sc) in:

- Medical Informatics
- Bioinformatics

DURATION OF STUDIES

The duration of the studies leading to the Master's degree is at the minimum three (3) and at the maximum five (5) academic semesters. .

ELIGIBILITY CRITERIA

The program admits University graduates in the fields of Computer Science, Electrical and Computer Engineering, Informatics and Telecommunications, Medicine, Physics, Biology, as well as graduates of Technological Educational Institutes in related disciplines (Law 2916/2001 Government's Gazette issue 114A').

STUDENT FEES

In order to meet the program's needs in infrastructure and human resources students have to pay a tuition, in accordance with Article 12, paragraph 7, of Greek Law 2083/1992, and with the provisions stated in the approval document of the ITMB graduate program published in the Greek Government Gazette. The fee is currently EUR 800 per semester and the total financial obligation per student should not exceed an amount equivalent to payments for three semesters.

SCHOLARSHIP, FELLOWSHIP AND HONORS DISTINCTION

A Scholarship will be awarded to one student per track of study. This student has to successfully complete all the course requirements of the 1st and 2nd semester by the end of the September examination period and before the beginning of the 3rd semester and his/her grade point average (GPA) has to be the highest among his/her classmates following the same direction of study. Furthermore, this GPA has to be 8.50 or higher (out of 10). The scholarship award also carries an exemption from tuition fees for the 3rd semester of study.

A Fellowship will be awarded to newly admitted students, for each direction of study, for outstanding academic quality and it carries an exemption from tuition fees for the first semester. The GPA of the student has to be at least eight (8/10) and not have the same resources (from work) and as long as the student maintains an excellent performance it will be automatically extended for the next academic semester (up to 3 semesters).

An Honors Distinction will be awarded to the first student of each direction of study who completes the Master's Program within five semesters and with a GPA of 8.50 or higher.

The Master's Program may provide qualified students with financial assistance for conference participation under certain conditions (read details at ITMB's web page: <http://itmb.di.uoa.gr>)

COURSES PER SEMESTER

Each student must attend and pass eleven (11) courses (9 required and 2 elective) and complete a Master's Thesis of research or applied nature, the preparation of which starts during the 2nd semester, but the main part of the thesis work and its writing is performed in the 3rd. The electives are not all offered every year and are taught on a rotation basis.

An indicative list of the offered courses follows:

MEDICAL INFORMATICS:

Biology - Physiology, Pattern Recognition, Medical Imaging Systems, Advanced Topics in Signal Processing, Machine Learning, Acquisition and Processing of Biomedical Data, Image Processing and Analysis, Medical Information Technology and Telemedicine, Radiographic Anatomy.

BIOINFORMATICS:

Biology - Physiology, Pattern Recognition, Image Processing and Analysis, Algorithms in Structural Bioinformatics, Introduction to Biotechnology, Introduction to Bioinformatics, Biomedical Databases, Algorithms in Molecular Biology, Machine Learning Methods in Computational Biology.

3rd SEMESTER (Elective courses):

Embedded Systems, Real Time Systems, Biomedical Data Mining and Knowledge Discovery, Biostatistics, Simulation Methods in Medicine and Biology, Methods and Applications in Neurosciences, Intelligent Medical Systems, Contemporary Hospital and Health-Care Services: Organization and Operation, Special Topics on Informatics and Biomedical Applications, Computer Modeling of Biomolecules, Accessibility of Information Systems and the World Wide Web, Knowledge Technologies, Advanced Biotechnology, Special Topics on Bioinformatics.