OVERVIEW

1. Introduction

The Bioinformatics Postgraduate Programme, run by the Department of Biology in the National and Kapodistrian University of Athens, is designed in accordance with both the current demands and the future prospects of Bioinformatics.

Each module consists of at least three hours of lecture and/or laboratory practice per week, for a period of twelve weeks. Attendance is compulsory. A research project is carried out in the third semester, with a minimum of 12 hours per week in the laboratory.

SEMESTER A		**Credits**
	COMPULSORY COURSES	
1	MOLECULAR BIOLOGY & GENOMICS	3
2	BIOMOLECULAR STRUCTURE AND FUNCTION	3
3	PROGRAMMING LANGUAGES AND SOFTWARE TOOLS IN BIOINFORMATICS I	3
4	STATISTICS IN BIOINFORMATICS	3
5	PRINCIPLES AND METHODS IN BIOINFORMATICS	3
6	APPLICATION OF INFORMATICS IN THE STUDY AND PRESERVATION OF BIODEVERSITY	3
SEMESTER B		**Credits**
	COMPULSORY COURSES	
1	COMPUTATIONAL ANALYSIS OF BIOMACROMOLECULAR SEQUENCES	3
2	COMPUTATIONAL ANALYSIS OF BIOMOLECULAR STRUCTURES	3
3	PROGRAMMING LANGUAGES AND SOFTWARE TOOLS IN BIOINFORMATICS II	3
4	MOLECULAR RECOGNITION - MOLECULAR DISEASES - STRUCTURAL DRUG DESIGN	3
5	METHODOLOGY OF RESEARCH	3
SEMESTER B		**Credits**
	OPTIONAL COURSES	
1	INTELLIGENT SYSTEMS TECHNIQUES IN BIOINFORMATICS	3
2	DATA TYPES -DATABASES - BIOLOGICAL DATABASE DESIGN	3
3	ARCHITECTURE OF INTERNET APPLICATION AND BIOINFORMATICS	3
4	COMPLEX ADAPTIVE SYSTEMS	3
5	SPECIAL TOPICS IN BIOINFORMATICS	3

2. Subjects Covered

The tutors come from a wide range of expertise areas. The diverse subjects taught, could be classified in 3 major categories:

1. Modern aspects of biological science (e.g. Molecular Biology and Genomics, Biomolecular Structure and Function, Molecular Recognition - Molecular Disease - Structural Drug Design).
2. Applied Mathematics and Computer Science (e.g. Statistics in Bioinformatics, Data Structures - Databases - Biological Database Design, Complex Adaptive Systems).

3. Bioinformatics and Computational Biology (e.g. Principles and Methods of Bioinformatics, Computational analysis of Biomacromolecular Sequences and Computational analysis of Biomolecular structures).

These categories are accompanied by subjects of a broader interest (e.g. Methodology of Research, Application oInformatics in the Study and Preservation of Biodiversity). Topics of special interest are covered by seminars. During their Research Project, postgraduate students are given the opportunity to cope with many aspects of real-life research.

3. Philosophy of the programme

According to the Programme philosophy, students should get directly involved in actual bioinformatic problem solving, with the proper guidance from the tutors. Moreover, the extensive use of the Internet for data access and analysis, a most common practice in the scientific community nowadays, is actually reflected in the studies. The Programme is targeted towards any science graduate, given a minimal amount of elementary knowledge in Biology, Mathematics and Computer Science.