M.Sc PROGRAMME in «BIOINFORMATICS»		
MODULE PROGRAM SEMESTER A OCTOBER 2005 – FEBRUARY 2006		
MOLECULAR BIOLOGY AND GENOMICS (16:00-19:00)		
DATE	***LECTURE***	**LECTURERS**
Tuesday 18/10/2005	*Definitions-The "structure" of the prokaryotic-eukaryotic genome- DNA system levels-Genetic information transfer*	*Assoc. Prof. Georgios Rodakis*
25/10/2005	*DNA transcription, DNA translation*	*Assoc. Prof. Georgios Rodakis*
1/11/2005	*Genetic code-Role and structure of tRNA and ribosomes in mRNA translation-Translation in prokaryotic and eukaryotic cells*	*Assoc. Prof. Georgios Rodakis*
8/11/2005	*Geometry of the eukaryotic genome-*	*Assoc. Prof. Georgios Rodakis*
15/11/2005	*Databases and sequence formats-(Fasta, GenBank, EMBL) – annotation*	*Assoc. Prof. Georgios Rodakis*
22/11/2005	*DNA recombination technology*	*Assoc. Prof. Georgios Rodakis*
29/11/2005	*Microbial Genomics*	*As. Prof. Georgios Diallinas*
6/12/2005	*Eukaryotic microorganisms as model systems for biological research- e.g. Saccharomyces cerevisiae & Aspergillus nidulans*	*As. Prof. Georgios Diallinas*
13/12/2005	*Structure-function relationships: The Molecular Genetics approach in model microbial systems*	*As. Prof. Georgios Diallinas*
20/12/2005	*Genetic Engineering Techniques-Genome analysis*	*As. Prof. Andreas Katsiotis*
10/01/2006	*Genetic Markers RFLP, RAPD, AFLP, SSR, MicroArrays*	*As. Prof. Andreas Katsiotis*
16/1/2006 Monday 18:30-21:00	*Stem cells Biomedical models*	*Lect. Georgios Goulielmos*
17/1/2006	*Gene therapy*	*Lect. Georgios Goulielmos*

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MODULE PROGRAM SEMESTER A OCTOBER 2005 – FEBRUARY 2006
BIOMOLECULAR STRUCTURE AND FUNCTION (16:00-19:00)

DATE	***LECTURE***	***LECTURERS***
Friday 21/10/2005	*Biomolecular Structure (I)*	Prof. Stavros J. Hamodrakas
Monday 24/10/2005 (18:30-21:00)	*Biomolecular Structure (II)*	Prof. Stavros J. Hamodrakas
Monday 31/10/2005 (18:30-21:00)	*Protein Architecture (I)*	Prof. Stavros J. Hamodrakas
4/11/2005	*Protein Architecture (II)*	Prof. Stavros J. Hamodrakas
11/11/2005	*Protein Architecture (III)*	Prof. Stavros J. Hamodrakas
18/11/2005	*Protein-Protein Interactions*	Dr. Metaxia Vlassi
Monday 21/11/2005 (19:00-21:00)	*Secondary Structure Prediction-Molecular mmodels*	Dr. Vasiliki Iconomidou
25/11/2005	*Protein Folding-Translocation*	Prof. Elias Eliopoulos
2/12/2005	*Protein Structure Stability*	As. Prof. Constantinos Vorgias
9/12/2005	*Protein-DNA Interactions*	As. Prof. Constantinos Vorgias
16/12/2005	*Protein-Carbohydrate Interactions*	As. Prof. Constantinos Vorgias
23/12/2005	*Crystallization Basic Principles*	Dr. Metaxia Vlassi
13/01/2006	*Structural Motifs*	Dr. Metaxia Vlassi
20/01/2006	*Amyloids-Biomaterials*	Dr. Vasiliki Iconomidou
Monday 23/01/2006	*DNA Structure - Supercoiled DNA – Nucleosome Structure*	Prof. Evangelos Moudrianakis

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MODULE PROGRAM SEMESTER A OCTOBER 2005 – FEBRUARY 2006		
Programming Languages and Software Tools in Bioinformatics I (18:30-21:00)		
DATE	**LECTURE**	**LECTURERS**
Thursday 20/10/2005	**Introduction Data Types:** Fundamental data types, definition of octal and hexadecimal constants, types of variables, arrays and strings, enumeration constants	Prof. Stavros J. Hamodrakas Ioannis Hamodrakas
27/10/2005	**Operators I:** Substitution operator, numeric operators, increment and decrement operators, comparison operators, Boolean logical operators, digital logical operators, hypothetical operator	Prof. Stavros J. Hamodrakas Ioannis Hamodrakas
3/11/2005	**Operators II:** explicit data type conversion– the **cast** operator, the **sizeof** operator, Priorities of operators, mixture of different data types in expressions.	Prof. Stavros J. Hamodrakas Ioannis Hamodrakas
10/11/2005	**Control Structures: if**structure, **while** structure, **for** structure, **switch/case** structure, **continue** structure, **goto** structure, recursion	Prof. Stavros J. Hamodrakas Ioannis Hamodrakas
24/11/2005	**Pointers:** Definition, pointer variables, applications, Dynamic memory allocation functions.	Prof. Stavros J. Hamodrakas Ioannis Hamodrakas
1/12/2005	**Derived data types:** Data structures, Bit fields, Unions, Definition of new data type: typedef	Prof. Stavros J. Hamodrakas Ioannis Hamodrakas
8/12/2005	**The C pre-processor:** Definition of constants: The #define directive, File inclusion: the #include directive, Conditional compilation	Prof. Stavros J. Hamodrakas Ioannis Hamodrakas
15/12/2005	**Input/Output and Library Functions:**Input/Output functions, other library functions	Prof. Stavros J. Hamodrakas Ioannis Hamodrakas
22/12/2005	**The structure of C programs:** Functions, Arguments of the main function.	Prof. Stavros J. Hamodrakas Ioannis Hamodrakas
12/01/2006	**Applications I (Simple Bioinformatics Programs)**	Prof. Stavros J. Hamodrakas Ioannis Hamodrakas
19/01/2006	**Applications II (Simple Bioinformatics Programs)**	Prof. Stavros J. Hamodrakas Ioannis Hamodrakas
26/01/2006	**Applications III (Simple Bioinformatics Programs)**	Prof. Stavros J. Hamodrakas Ioannis Hamodrakas

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MODULE PROGRAM SEMESTER A OCTOBER 2005 – FEBRUARY 2006		
Principles and methods in bioinformatics (16:00-19:00)		
DATE	***LECTURE***	***LECTURERS***
Monday 17/10/2005	*Introduction (I)*	Prof. Stavros J. Hamodrakas
24/10/2005	*Introduction (II)*	Prof. Elias Eliopoulos
31/10/2005	*Databases (Protein and DNA)*	Prof. Stavros J. Hamodrakas/ Nikolaos Papandreou/ Zoi Litou
7/11/2005	*Sequence Similarity Searches -Sequence Multiple Alignment*	Prof. Stavros J. Hamodrakas/ Nikolaos Papandreou/ Zoi Litou
14/11/2005	*Mollecular Graphics*	Prof. Stavros J. Hamodrakas/ Nikolaos Papandreou
21/11/2005	*Docking*	Prof. Stavros J. Hamodrakas Nikolaos Papandreou
28/11/2005	*Membrane Protein Structure and Function Prediction*	Prof. Stavros J. Hamodrakas/ Dr. Pandelis Bagos
5/12/2005	*Artificial Neural Networks -Applications in Bioinformatics*	Prof. Stavros J. Hamodrakas/ Dr. Pandelis Bagos
12/12/2005	*Hidden Markov Models (HMM' s) -Applications in Bioinformatics*	Prof. Stavros J. Hamodrakas/ Dr. Pandelis Bagos
19/12/2005	*Protein folding*	Prof. Elias Eliopoulos/ Dr. Nikolaos Papandreou
9/01/2006	*Homology Modelling*	Prof. Elias Eliopoulos/ Dr. Nikolaos Papandreou
16/01/2006	*Protein-DNA interactions*	Prof. Elias Eliopoulos/ Dr. Nikolaos Papandreou

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MODULE PROGRAM SEMESTER A OCTOBER 2005 – FEBRUARY 2006		
Application of Informatics in the study and preservation of Biodiversity (16:00-18:30)		
DATE	**LECTURE**	**LECTURERS**
Thursday 20/10/2005	*Binomial species naming and classification, species description*	As. Prof.Anastasios Legakis
27/10/2005	*Taxonomy keys*	Assoc. Prof. Artemis Nikolaidou
3/11/2005	*Sampling data, population*	Lect. Persefoni Megalofonou
10/11/2005	*Phylogenetic Data*	As. Prof.Anastasios Legakis
24/11/2005	*Analysis of biocommunities*	Assoc. Prof. Artemis Nikolaidou
1/12/2005	*Correlations of population and ecological factors n*	Lect. Persefoni Megalofonou/ Assoc. Prof. Artemis Nikolaidou
8/12/2005	*Species distributio*	As. Prof.Anastasios Legakis
15/12/2005	*Territoriality analysis, Behavioural analysis*	As. Prof.Anastasios Legakis
22/12/2005	*Theoretical issues in Database management systems,statistical analyses, temporal analyses, spatial analyses, models, GIS*	Lect. Persefoni Megalofonou/ As. Prof.Anastasios Legakis
12/01/2006	*Management of biological collections*	As. Prof.Anastasios Legakis
19/01/2006	*Visualization of data,metadata management , knowledge networking, data mining, uncertainty analysis, reasoning with incomplete information, automatic summarization*	As. Prof.Anastasios Legakis