NOME DO CURSO EM INGLÊS: BIOINFORMATICS AND APPLICATIONS TO LIFE SCIENCES

GRAU: MASTER´S DEGREE

In spite of the existence of 4 branches, in the 1st semester of the 2nd year, the students may choose to do CU that are not included in one of the branches, but losing the specialization granted by the frequency of the total UC of the branches.

BRANCH: OMICS

YEAR	SEM.	CURRICULAR UNIT	ECTS	SEM.	CURRICULAR UNIT	ECTS
1st	1st	Bioinformatics and Advanced Molecular Analysis Advanced Molecular Genetics Multivariate Statistics Leveling I Leveling II	6.0 6.0 6.0 6.0 6.0 6.0	2nd	Biological Image Analisys Bioinspired computing and data exploration Computational statistics Environmental Modeling and Multivariate Analysis Leveling III	6.0 6.0 6.0 6.0 6.0 6.0
2nd	1st	Dissertation I Seminary: Pathway Analysis of Omic Data Nucleic Acid Technology and GMO's Metabolic Engineering	12.0 6.0 6.0 6.0	2nd	Dissertation II	30.0

BRANCH: EVALUATION AND ENVIRONMENTAL MANAGEMENT

YEAR	SEM.	CURRICULAR UNIT	ECTS	SEM.	CURRICULAR UNIT	ECTS
1st	1st	Bioinformatics and Advanced Molecular Analysis Advanced Molecular Genetics Multivariate Statistics Leveling I Leveling II	6.0 6.0 6.0 6.0 6.0 6.0	2º	Biological Image Analisys Bioinspired computing and data exploration Computational statistics Environmental Modeling and Multivariate Analysis Leveling III	6.0 6.0 6.0 6.0 6.0 6.0
2nd	1st	Dissertation I Environmental Diagnosis Planning and Management Waste Management	12.0 6.0 6.0 6.0	2º	Dissertation II	30.0

BRANCH:: APPLIED COMPUTATION

YEAR	SEM.	CURRICULAR UNIT	ECTS	SEM.	CURRICULAR UNIT	ECTS
1st	1st	Bioinformatics and Advanced Molecular Analysis Advanced Molecular Genetics Multivariate Statistics Leveling I Leveling II	6.0 6.0 6.0 6.0 6.0 6.0	2º	Biological Image Analisys Bioinspired computing and data exploration Computational statistics Environmental Modeling and Multivariate Analysis Leveling III	6.0 6.0 6.0 6.0 6.0 6.0
2nd	1st	Dissertation I Digital Signal Processing Artificial Intelligence Biotelemetry e Bioinstrumentation	12.0 6.0 6.0 6.0	2º	Dissertation II	30.0

BRANCH: BIOSTATISTICS

YEAR	SEM.	CURRICULAR UNIT	ECTS	SEM.	CURRICULAR UNIT	ECTS
1st	1st	Bioinformatics and Advanced Molecular Analysis Advanced Molecular Genetics Multivariate Statistics Leveling I Leveling II	6.0 6.0 6.0 6.0 6.0 6.0	2º	Biological Image Analisys Bioinspired computing and data exploration Computational statistics Environmental Modeling and Multivariate Analysis Leveling III	6.0 6.0 6.0 6.0 6.0 6.0
2nd	1st	Dissertation I Option EST Option EST Option EST	12.0 6.0 6.0 6.0	2º	Dissertation II	30.0
	Opção EST	Advanced Topics in Multivariate Statistics Applied Biostatistics Bayesian Statistics Generalized Linear Models				

LEVELING I AND II

AREA	CURRICULAR UNIT	ECTS	AREA	CURRICULAR UNIT	ECTS
A	Biotechnology General Genetics Bioinformatics and Molecular Analysis	6.0	B	Cell Biology Fundaments of Biology Microbiology Biochemistry Cell Physiology Applied Ecology Evolution and Biodiversity Ecotoxicology Environmental Impact Assessment Global Change	6.0
C	Programming fundamentals Introduction to Web Development	6.0	D	Modelling and Numerical Simulation of Biological Systems Statistical Mechanics Fields and Radiation	6.0

LEVELING III

ÁREA	CURRICULAR UNIT	ECTS	ÁREA	CURRICULAR UNIT	ECTS
A	Quantitative and Population Genetics Molecular Genetics Evolutionary and Comparative Genomics and Proteomics	6.0	B	Pollution and Environmental Quality Ecotechnology Water and Wastewater Treatment Urban and Industrial Metabolism Landscape Ecology Cell Physiology	6.0
C	Algorithms and Data Structures Advanced programming Database Fundaments Python Programming	6.0 3.0 3.0 3.0	D	Computational Physics: Monte Carlo and Molecular Dynamics	6.0

Leveling I to III CU should be chosen according to the following criteria: CU are divided into the following areas: A - Biology and Biochemistry, B - Environmental Sciences, C - Informatics, D - Mathematics, and Physics. According to their curriculum, students will be included, by Course Direction, in one of two possible profiles:- Biology (students of Biochemistry, Biology, Environment, Genetics and Biotechnology, Bioengineering, Biomedical and related areas)

- Inf / Mat (students of Computer Science, Mathematics, Physics and related areas).

A student with a Biology profile has to choose leveling UC, in a total of 18 ECTS, within the areas C and D (electing at least one UC of each of the scientific areas C and D); A student with Inf/Mat profile has to choose leveling UC, in a total of 18 ECTS, within areas A and B (by electing at least one UC from each of the scientific areas A and B).