SYLLABUS

1. **COURSE DESCRIPTION**

Degree:	Biotechnology
Course:	Bioinformatics
Module:	Instrumental Methods of Analysis and Molecular Biology Systems
Department:	Molecular Biology and Biochemical Engineering
Academic Year:	2017-2018
Term:	Second
ECTS credits:	6
Year:	3rd year
Type:	Compulsory
Language:	Spanish

Course Model:	B2	
a. Basic Learning (EB):	60%	
b. Practical Learning (EPD):	25%	
c. Guided Academic Activities (AD):	15%	

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2. **LECTURERS**

Coordinator	
Name:	**Antonio J. Pérez Pulido**
School:	**School of Experimental Sciences**
Department:	**Molecular Biology and Chemical Engineering**
Area:	**Genetics**
Office Hours:	**Tuesdays, Wednesdays and Thursdays: 11.00-13.00** **(with previous appointment through phone or the virtual classroom e-mail)**
Office:	**22.2.17 (CABD office)**
E-mail:	**ajperez@upo.es**
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3. **TOPICS**

Basic Learning (EB):

Topic 0. Introduction.
Unit 0. Introduction. Bioinformatic definition and history.

Topic 1. Computational Biology.
Unit 1.1. Operative Systems.
Unit 1.2. Programming Languages.

Topic 2. Database and bioinformatic tools.
Tema 2.1. Molecular database.
Tema 2.2. Sequence comparison and alignment.
Tema 2.3. Similarity search.
Tema 2.4. Sequence families and motifs.
Tema 2.5. Structural bioinformatics.
Tema 2.6. Gene expression analysis.

Guided Academic Activities (AD):
AD1 – Linux operative system
AD2 – Perl programming language
AD3 – Proteomic data analysis

Practical learning (EPD):
EPD1 – Molecular databases
EPD2 – Dot matrix
EPD3 – Similarity search
EPD4 - Multiple alignments and phylogenies
EPD5 - Search for domains and motifs
EPD6 – Structure prediction