

COURSE: BIOLOGICAL SYSTEMS							WPBS V3 MAMP	
DEGREE: BIOMEDICAL ENGINEERING						YEAR: 2017-2018	TERM: 2nd semestre	
WEEKLY PROGRAMMING								
WEEK	SESSION	Description	GROUPS		SPECIAL SESSION (Computer class room, audio- visual class room)	Indicate YES/NO if the session needs 2 teachers: maximum 4 sessions	WEEKLY PROGRAMMING FOR THE	
			LECTURE	SEMINAR			DESCRIPTION	CLASS HOURS
Week 1	1	Introduction to the molecular geometry of organic molecules, description of basic functional groups by means of basic molecular modeling tools.	X		Computer Room		1h 40min	6
	2	Molecular Geometry and Functional Groups: Practical exercises		X	Computer Room		1h 40min	
Week 2	3	Natural Occurring Organic Compounds: lipids, phospholipids and membranes	X		Computer Room		1h 40min	6
	4	Natural Occurring Organic Compounds: Practical Exercises		X	Computer Room		1h 40min	
Week 3	5	Natural Occurring Organic Compounds: carbohydrates and polysaccharides	X		Computer Room		1h 40min	6
	6	Natural Occurring organic Compounds: Practical Exercises		X	Computer Room		1h 40min	
Week 4	7	Natural Occurring Organic Compounds: the energy of a molecule	X		Computer Room		1h 40min	6
	8	Natural Occurring organic Compounds: Practical exercises		X	Computer Room		1h 40min	
Week 5	9	The Structure of Macromolecules: nucleotides as building blocks of DNA, structural analysis and prediction.	X		Computer Room		1h 40min	6
	10	The Structure of Macromolecules: Practical exercises		X	Computer Room		1h 40min	
Week 6	11	The Structure of Macromolecules: aminoacids as building blocks of proteins.	X		Computer Room		1h 40min	6
	12	The Structure of Macromolecules: Practical exercises		X	Computer Room		1h 40min	
Week 7	13	The Structure of Macromolecules: modeling the structure of proteins, ab-initio modeling, homology modeling	X		Computer Room		1h 40min	6
	14	The Structure of Macromolecules: Practical exercises		X	Computer Room		1h 40min	
Week 8	15	The Structure of Macromolecules: comparison, classification and stability of protein structures	X		Computer Room		1h 40min	6
	16	The Structure of Macromolecules: Practical exercises		X	Computer Room		1h 40min	
Week 9	17	The structure of Macromolecules: analysis and prediction of molecular interactions.	X		Computer Room		1h 40min	6
	18	The Structure of Macromolecules: Practical exercises		X	Computer Room		1h 40min	
Week 10	19	The structure of Macromolecules: molecular motions introduction to normal mode analysis	X		Computer Room		1h 40min	6
	20	The Structure of Macromolecules: Practical exercises		X	Computer Room		1h 40min	
Week 11	21	The structure of Macromolecules: molecular motions, introduction to molecular dynamics	X		Computer Room		1h 40min	6
	22	The Structure of Macromolecules: Practical exercises		X	Computer Room		1h 40min	
Week 12	23	The structure of Macromolecules: protein-protein interaction, biology at large scale	X		Computer Room		1h 40min	4h 40min
	24	Introduction to Biological Databases		X	Computer Room		1h 40min	
Week 13	25	Nucleic Acid Databases: Ensembl	X		Computer Room		1h 40min	3
	26	Nucleic Acid Databases and tools. Variation Databases		X	Computer Room		1h 40min	
Week 14	27	Protein Databases. Uniprot and BioGRID	X		Computer Room		1h 40min	3
	28	Metabolite		X	Computer Room		1h 40min	
SUBTOTAL							43h 20min + 82h 40min = 126h	
		The final grade will come from:						
		50% final exam. Minimum required mark: 4						
		50% Continuous Evaluation:					Exam	3
		3 Homework exercises after finishing main theory bolcs (16.6% each)						
TOTAL							129h	