uc3m | Universidad Carlos III de Madrid

COURSE: Introduction to the Design of Medical Instrumentation									
DEGREE: Biomedical Engineering						YEAR: 2020/2021		TERM: Second semester	
WEEKLY PLANNING									
WEEK	SESION	DESCRIPTION	GROUPS (mark X)		SPECIAL ROOM FOR SESSION (Computer class room, audio-visual class room)	Indicate YES/NO If the session needs 2 teachers	WEEKLY PROGRAMMING FOR STUDENT		
			LECTURES	SEMINARS			Instructor	CLASS HOURS	HOMEWORK HOURS (Max. 7h week)
04FEB 05FEB	1	Introduction to Biomedical Instrumentation		S1	7.0.J06/ 2.3.A06		LG	1,6	4
10FEB	2	Signal Amplification and Filtering	M1		Virtual		RC	1,6	4
11FEB 12FEB	3	Basic Concepts on Biomedical Instruments		S2	7.0.J06/ 2.3.A06		LG	1,6	
17FEB	4	Electrocardiology	M2		Virtual		LG	1,6	4
18FEB 19FEB	5	Electrical Safety. Practical Exercises on Amplification and Filtering.		S3	7.0.J06/ 2.3.A06		RC	1,6	
24FEB	6	Electroencephalography	M3		Virtual		RC	1,6	4
25FEB 26FEB	7	Practical Exercises on ECG and EEG Applications		S4	7.0.J06/ 2.3.A06		RC	1,6	
03MAR	8	Other biopotential recordings: EMG, ENG, ERG, EOG, MEG.	M4		Virtual		LG	1,6	4
04MAR 05MAR	9	Biopotential Amplifiers		S5	7.0.J06/ 2.3.A06		LG	1,6	
10MAR	10	Electrodes	M5		Virtual		LG	1,6	4
11MAR 12MAR	11	Practical Exercises on Biopotential Amplifiers		S6	7.0.J06/ 2.3.A06		LG	1,6	
17MAR	12	Sensors: biophysics, design, applications	M6		Virtual		LG	1,6	4
18MAR	13	Partial Exam	E1	S7	7.0.J06/ 2.3.A06		LG	1,6	
24MAR	14	Solution of the Partial Exam			Virtual		LG	1,6	4
25MAR 26MAR	15	Practical Exercises on Sensors		S8	7.0.J06/ 2.3.A06		LG	1,6	
07ABR	16	Therapeutic and Prosthetic Devices	M7		Virtual		LG	1,6	4
08ABR 09ABR	17	Practical Exercises on Sensors and Therapeutic and Prosthetic Devices		S9	7.0.J06/ 2.3.A06		LG	1,6	
14ABR	18	Introduction to Signal Digitalization	M8		Virtual		RC	1,6	4
15ABR 16ABR	19	Practical Exercises on Signal Digitalization		S10	7.0.J06/ 2.3.A06		RC	1,6	
21ABR	20	Pressure and Sound Measurements	M9		Virtual		LG	1,6	4

22ABR 23ABR	21	Practical Exercises on Pressure and Sound Measurements		S11	7.0.J06/ 2.3.A06		RC	1,6	
28ABR	22	Introduction to Optical Measurement Systems	M10		Virtual		JJV	1,6	4
29ABR 30ABR	23	Practical Exercises on Optical Measurement Systems		S12	7.0.J06/ 2.3.A06		JJV	1,6	
05MAY	24	Flow and Volume Measurements	M11		Virtual		LG	1,6	4
06 MAY 07 MAY	25	Practical Exercises on Flow and Volume Measurement		S13	7.0.J06/ 2.3.A06		LG	1,6	
12MAY	26	Physiological Modelling	M12		Virtual		LG	1,6	4
13MAY 14MAY	27	Practical Exercises on Physiological Modelling		S13	7.0.J06/ 2.3.A06		LG	1,6	
18 MAY	28	Review	M13		Virtual				
							Subtotal 1	**43,2**	**108**
		Total 1 *(Hours of class plus student homework hours between weeks 1-14)*						151,2	

13MAY	27	Tutorials, handing in, etc					JJV	2	
	28	Assessment					JJV	2	2
	29								
	30								
		Total 2 *(Hours of class plus student homework hours between weeks 15-18)*						6	
		TOTAL A *(Total 1 + Total 2)*						**157,2**	

LABORATORIES CLASSES PROGRAMMING (*)

WEEK	SESSION	DESCRIPTION	LABORATORY	WEEKLY PROGRAMMING FOR STUDENT		
				DESCRIPTION	CLASS HOURS	HOMEWORK HOURS (Max. 7h week)
L 15MAR	1	G48 -1,2 Practice 1: Build your own ECG	1.0G.15	16:00 - 20:00	1,6	2,5
L 22MAR	2	G48 - 3 G49 -1 Practice 1: Build your own ECG	1.0G.15	16:00 - 20:00	1,6	2,5
L 12ABR	3	G49 - 2,3 Practice 1: Build your own ECG	1.0G.15	16:00 - 20:00	1,6	2,5
J 22ABR	4	G48 - 1,2,3 Practice 2: Digitize your own ECG	1.0G.15	16:00 - 20:00	1,6	2,5
L 26ABR	5	G49 - 1,2,3 Practice 2: Digitize your own ECG	1.0G.15	16:00 - 20:00	1,6	2,5
				Subtotal 3	**8**	**12,5**
		Total 3 *(Hours of class plus student homework hours of the laboratory sessions)*				**20,5**
		TOTAL B *(Total 3)*				**20,5**
TOTAL *(Total A + Total B. Maximum 180 hours)*						**177,7**

In EPS are given an additional 16 hours of laboratory practices along ten sessions.