



COURSE: Instrumentation and multimodality imaging

DEGREE: Biomedical Engineering

YEAR: 2019/2020

TERM: 2nd

WEEKLY PLANNING

WEEK	SESSION	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			DESCRIPTION	CLASS HOURS	HOMEWORK HOURS (Max. 7h week)
1	1 27-Jan	Introduction	X				Mónica Abella	1,6	
1	2 29-Jan	X-Ray production / Interaction of radiation and matter I	X				Mónica Abella	1,6	
2	3 3-Feb	Practical session - Spectrum (Computer room)		X	Yes	Yes	Mónica Abella and Cristóbal Martínez	1,6	4
2	4 5-Feb	Conventional Radiology I	X				Mónica Abella	1,6	
3	5 10-Feb	Advanced Techniques I	X				Cristóbal Martínez	1,6	4
3	6 12-Feb	Practical session – Simulator (Computer room)		X	Yes	Yes	Cristóbal Martínez	1,6	4
4	7 17-Feb	Practical session – Dual Energy (Computer room)		X	Yes	Yes	Cristóbal Martínez	1,6	4

4	8 19-Feb	X-ray detectors	X				Cristóbal Martínez	3	
5	9 24-Feb	Computed Tomography I	X				Cristóbal Martínez	1,6	
5	10 26-Feb	Computed Tomography II	X				Cristóbal Martínez	1,6	
6	11 2-Mar	Radioactivity and Radionuclide production and detection	X				Mónica Abella	1,6	
6	12 4-Mar	Planar imaging	X				Mónica Abella	3	
7	13 9-Mar	Tomography: PET-SPECT	X				Mónica Abella	1,6	4
7	14 11-Mar	PET/CT (Computer room)		X	Yes	Yes	Cristóbal Martínez and Alessandro Piol	3	
8	15 16-Mar	Ultrasound: Physical principles	X				Cristóbal Martínez	1,6	
8	16 18-Mar	Ultrasound: Physical principles	X				Cristóbal Martínez	1,6	
9	17 23-Mar	MRI: Physical principles I					Manuel Desco		
9	18 25-Mar	MRI: Physical principles II (Computer room)		X	Yes	Yes	Manuel Desco		
10	19 30-Mar	MRI: Instrumentation	X				Manuel Desco	1,6	
10	20 1-Apr	MRI: Sequences I	X				Manuel Desco	1,6	4
11	21 15-Apr	MRI: Localization and reconstruction I (Computer room)		X	Yes	Yes	Manuel Desco	1,6	
11	22 20-Apr	MRI: Localization and reconstruction II	X				Manuel Desco	1,6	
12	23 22-Apr	MRI: Imaging sequences	X				Manuel Desco	1,6	4
13	24 27-Apr	MRI: Other sequences and artifacts	X				Manuel Desco	1,6	
14	25 29-Apr	Probe design in molecular imaging	X				Beatriz Salinas	1,6	
14	26 4-May	Ultrasound: Instrumentation		X	Yes	Yes	BiiG laboratories, 1.0.G13. Mónica Abella, Manuel Desco and Cristóbal Martínez	1,6	
15	27 6-May	TUTORSHIP					Mónica Abella, Manuel Desco and Cristóbal Martínez	1,6	
Subtotal 1								41,6	32

Total 1 (Hours of class plus student homework hours between weeks 1-14)	73,6
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TOTAL A (Total 1 + Total 2)	73,6
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LABORATORIES CLASSES PROGRAMMING (*)						
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WEEK	SESSION	DESCRIPTION	LABORATORY	WEEKLY PROGRAMMING FOR STUDENT		
				DESCRIPTION	CLASS HOURS	HOMEWORK HOURS (Max. 7h week)
	1	X-ray (Cristóbal Martínez)	BiiG laboratories, 7.2.H31	February 19 th , 24 th , 25 th from 10:00am to 1 pm from 5pm to 8pm (seminar hours + 1)	3	4
	2	CT (Cristóbal Martínez)	BiiG laboratories, 1.0.G14	March 2 th , 3 th , 4 th , from 10pm to 1pm	3	4
	3	MRI (Daniel Calle)	HGGM hospital	May 5 th , 6 th , 7 th from 10:00am to 11:30am	3	4
	4	US (Cristóbal Martínez)	BiiG laboratories, 1.0.G13	May 4 th , from 5pm to 7pm (seminar hours)	2	2
Subtotal 3					11	14

Total 3 (Hours of class plus student homework hours of seven sessions laboratories)	25
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TOTAL B (Total 3)	25
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TOTAL (Total A + Total B. <u>Maximum 180 hours</u>)	98,6
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(*) In EPS are given an additional 16 hours of laboratory practices along ten sessions.