



COURSE: Instrumentation and multimodality imaging		
DEGREE: Biomedical Engineering	YEAR: 2021/2022	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	Introduction	X					1,6	
1	2	X-Ray production / Interaction of radiation and matter	X					1,6	
2	3	Conventional Radiology	X					1,6	
2	4	Practical session - Spectrum		X				1,6	4
3	5	Special X-ray Systems	X					1,6	
3	6	Practical session – Simulator		X				1,6	4
4	7	Radiation detectors: X-ray and NM I	X					1,6	
4	8	Practical session – Dual Energy		X				1,6	4
5	9	Radiation detectors: X-ray and NM II & Computed Tomography	X					1,6	

5	10	Tomographic reconstruction in projective systems	X					
6	11	Radioactivity and Radionuclide production and detection	X				1,6	
6	12	Planar imaging in NM	X				1,6	
7	13	Tomography in NM: PET-SPECT	X				1,6	
7	14	Practical session – Attenuation correction		X			1,6	4
8	15	MRI: Physical principles I	X				1,6	
8	16	MRI: Physical principles II	X				1,6	
9	17	MRI: Instrumentation		X			1,6	4
9	18	MRI: Sequences I	X				1,6	
10	19	MRI: Localization and reconstruction I	X				1,6	
10	20	MRI: Localization and reconstruction II		X			1,6	4
11	21	MRI: Imaging sequences	X				1,6	
11	22	MRI: Practical with real system		X			1,6	
12	23	MRI: Practical session - reconstruction		X			1,6	4
12	24	MRI: Other sequences and artifacts		X			1,6	
13	25	Ultrasound: Physical principles	X				1,6	4
13	26	Ultrasound: Instrumentation		X			1,6	
14	27	Ultrasound systems		X			1,6	
14	28	TUTORSHIP		X			1,6	

ONLINE

Subtotal 1

44,8

32

Total 1 (Hours of class plus student homework hours between weeks 1-14)

76,8

TOTAL A (Total 1 + Total 2)

76,8

LABORATORIES CLASSES PROGRAMMING (*)

WEEK	SESSION	DESCRIPTION	LABORATORY	WEEKLY PROGRAMMING FOR STUDENT		
				DESCRIPTION	CLASS HOURS	HOMEWORK HOURS (Max. 7h week)
	1	X-ray	BiiG laboratories, 7.2.H31		3	4
	2	CT	BiiG laboratories, 1.0.G14		3	4
	3	MRI	HGGM hospital		3	4
	4	US	BiiG laboratories, 1.0.G13		2	2
Subtotal 3					11	14
Total 3 (<i>Hours of class plus student homework hours of seven sessions laboratories</i>)					25	
TOTAL B (<i>Total 3</i>)					25	
TOTAL (<i>Total A + Total B. Maximum 180 hours</i>)					101,8	

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