



COURSE: Advanced Topics in Medical Imaging (15562)		
DEGREE: BIOMEDICAL ENGINEERING	YEAR: 2018/19	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	Review of basic concepts learnt on image processing					Jan 28	1,6	7
1	2	Image processing with ImageJ			1.0.G14		Jan 30	1,6	
2	3	DICOM information model and functionality					Feb 4	1,6	7
2	4	Practical session: DICOM network services.			1.0.G14		Feb 6	1,6	
3	5	3D Visualization					Feb 11	1,6	7
3	6	Practical session: 3D Visualization			1.0.G14		Feb 13	1,6	
4	7	Wavelets					Feb 18	1,6	7
4	8	Practical session: wavelets			1.0.G14		Feb 20	1,6	
5	9	Advanced segmentation I: Hough transform and Canny filter					Feb 25	1,6	7

5	10	Practical session on advanced segmentation I			1.0.G14		Feb 27	1,6	
6	11	Advanced segmentation II: Adaptive filters					Mar 4	1,6	
6	12	Practical session advanced segmentation II			1.0.G14		Mar 6	1,6	7
7	13	Feature-based registration					Mar 11	1,6	
7	14	Intensity Based registration.					Mar 13	1,6	7
8	15	A complete workflow: Neuroimage analysis					Mar 18	1,6	
8	16	Practical session image registration and neuroimage analysis			1.0.G14		Mar 20	1,6	7
9	17	Feature extraction and statistical classification I					Mar 25	1,6	
9	18	Practical session on classification I			1.0.G14		Mar 27	1,6	7
10	19	Feature extraction and statistical classification II					Apr 1	1,6	
10	20	Practical session on classification II			1.0.G14		Apr 3	1,6	7
11	21	Image reconstruction I					Apr 8	1,6	
11	22	Artificial Intelligence in Medical Image Analysis					Apr 10	1,6	7
12	23	Image reconstruction II					Apr 24	1,6	
12	24	Image reconstruction III					Apr 29	1,6	7
13	25	Image reconstruction IV					May 6	1,6	
13	26	Exam questions					May 8	1,6	7
14	27	Siemens Syngo academy					TBD	1,6	
14	28	Visit to radiology department					TBD	1,6	2
15	29	Tutorial					May 13-15	1,6	1,4
Subtotal 1								46,4	94,6
Total 1 (Hours of class plus student homework hours between weeks 1-14)								141	

15		Tutorials, handing in, etc						2	
16		Assessment						3	8
17									
18									
Subtotal 2								5	8
Total 2 (Hours of class plus student homework hours between weeks 15-18)								13	

TOTAL A (Total 1 + Total 2)	154
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LABORATORIES CLASSES PROGRAMMING (*)						
WEEK	SESSION	DESCRIPTION	LABORATORY	WEEKLY PROGRAMMING FOR STUDENT		
				DESCRIPTION	CLASS HOURS	HOMEWORK HOURS (Max. 7h week)
	1	Image processing with ImageJ	1.0.G14		1,6	1
	2	DICOM Network services	1.0.G14		1,6	1
	3	Wavelets	1.0.G14		1,6	1
	4	Advanced segmentation	1.0.G14		1,6	1
	5	Image registration and neuroimaging	1.0.G14		1,6	1
	6	Adaptive filters	1.0.G14		1,6	1
	7	Statistical classification	1.0.G14		1,6	1
	8	Image reconstruction			1,6	1
	9	Syngo academy	External activity		1,6	1
	10	3D representation	1.0.G14		1,6	1
Subtotal 3					16	10
Total 3 (Hours of class plus student homework hours of ten sessions laboratories)					26	

TOTAL B (Total 3)	26
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TOTAL (Total A + Total B. <u>Maximum 180 hours</u>)	180
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(*) In EPS are given an additional 16 hours of laboratory practices along ten sessions.