uc3m | Universidad Carlos III de Madrid
Vicerrectorado de Estudios
Apoyo a la docencia y gestión del grado

COURSE: ENVIRONMENTAL TECHNOLOGY		
DEGREE: INGENIERÍA ELECTRÓNICA, INDUSTRIAL Y AUTOMÁTICA	YEAR: 2º	TERM: 2º

WEEKLY PLANNING

WEEK	SESSION	DESCRIPTION	TEACHING (mark X)		SPECIAL ROOM FOR SESSION (Computer class room, audio-visual class room)	WEEKLY PROGRAMMING FOR STUDENT		
			LECTURES	SEMINARS		DESCRIPTION	CLASS HOURS (1,66=50+50 min)	HOMEWORK HOURS (Max. Estim. 3,25h)
1	1	PRESENTATION OF THE COURSE. TOPIC 1. ATMOSPHERIC AND WATER POLLUTION: INDICATOR PARAMETERS AND LEGISLATION. Analysis of atmospheric pollutants and water pollutants	X		NO	Student work about the given contents and check of the recommended bibliography	1,66	3,25
2	2	Resolution of Questions and Study Cases of Topic 1		X	NO	Resolution of questions, problems, and study cases related to the studied topic.	1,66	3,25
3	3	TOPIC 2. GREEN CHEMISTRY AND INDUSTRIAL ECOLOGY: SUSTAINABILITY OF INDUSTRIAL PROCESSES. Twelve principles of green chemistry. Industrial ecosystems. Green engineering	X		NO	Student work about the given contents and check of the recommended bibliography	1,66	3,25
4	4	Resolution of Questions and Study Cases of Topic 2		X	NO	Resolution of questions, problems, and study cases related to the studied topic.	1,66	3,25
5	5	TOPIC 3. AIR POLLUTION: POLLUTANTS AND THEIR EFFECTS. The atmosphere. Dispersion of pollutants. Air quality and legislation. Gaseous pollutants, characteristics and effects. Particles. Industrial hygiene.	X		NO	Student work about the given contents and check of the recommended bibliography	1,66	3,25

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6	6	Resolution of Questions and Study Cases of Topic 3		X	NO	Resolution of questions, problems, and study cases related to the studied topic.	1,66	3,25
7	7	TOPIC 4. TECHNIQUES OF AIR POLLUTION CONTROL. INDUSTRIAL HYGIENE. Control of mobile combustion sources. Combustion reaction. Control of stationary combustion sources. Removal technologies of gases and particulate matter. Industrial hygiene.	X		NO	Student work about the given contents and check of the recommended bibliography	1,66	3,25
8	8	Resolution of Questions and Study Cases of Topic 4		X	NO	Resolution of questions, problems, and study cases related to the studied topic.	1,66	3,25
9	9	TOPIC 5. WASTEWATER TREATMENT I: PRETREATMENT, PRIMARY TREATMENT AND SECONDARY TREATMENT. Wastewaters treatment. Pretreatment operations. Equipment. Primary treatment operations. Sedimentation tanks. Biological process. Equipment.	X		NO	Student work about the given contents and check of the recommended bibliography	1,66	3,25
10	10	Resolution of Questions and Study Cases of Topic 5		X	NO	Resolution of questions, problems, and study cases related to the studied topic.	1,66	3,25
11	11	TOPIC 6. WASTEWATER TREATMENT II: ENERGETIC USE AND TERTIARY TREATMENTS. Sludge line. Gas line. Biogas production. Nitrogen and phosphorous removal processes. Membrane processes. Oxidation technologies. Absorption and adsorption processes.	X		NO	Student work about the given contents and check of the recommended bibliography	1,66	3,25
12	12	Resolution of Questions and Study Cases of Topic 6		X	NO	Resolution of questions, problems, and study cases related to the studied topic.	1,66	3,25
13	13	TOPIC 7. (I) WASTE MANAGEMENT: TREATMENT AND LEGISLATION AND, (II) ENVIRONMENTAL IMPACT ASSESSMENT: IDENTITY OF IMPACTS AND METHODOLOGIES USED	X		NO	Student work about the given contents and check of the recommended bibliography	1,66	3,25
14	14	Project presentations of topic 7		X	NO	Student work for the presentation of the project	1,66	3,25

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			LECTURES	SEMINARS		DESCRIPTION	CLASS HOURS (1,66=50+50 min)	HOMEWORK HOURS (Max. Estim. 3,25h)
	15	LABORATORY SESSION PRACTICAL 1. Environmental comparison of residential heating systems. PRACTICAL 2. Study of the quality of air in the Autonomous Region of Madrid			NO	Students work in group and deliver a report	1,66	3,25
						Subtotal 1	**25**	**49**
						Total 1 *(Hours of class plus student homework)*	**74**	
15		Tutorials, handing in, etc				Student work about the given contents and check of the recommended bibliography	1,8	-
16 **17** **18**		Assessment					4	4
						Subtotal 2	**6**	**4**
						Total 2 *(Hours of class plus student homework)*	**10**	
TOTAL *(Maximun 83 horas)*							**83**	