

<b>COURSE: Applications in Thermal Engineering</b>		
<b>DEGREE: Grade in Industrial Technologies Engineering</b>	<b>YEAR: 4</b>	<b>TERM: 1</b>

WEEKLY PLANNING								
WEEK	SESSION	DESCRIPTION	TEACHING (mark X)		SPECIAL ROOM FOR SESSION (Computer class room, audio-visual class room)	WEEKLY PROGRAMMING FOR STUDENT		
			L E C T U R E S	S E M I N A R S		DESCRIPTION	CLASS HOURS (1,66=50+50 min)	HOMEWORK HOURS (Max. Estim. 3,25h)
1	1	Introducing to the course. Topic 1: Refrigeration cycles. 1.1 Previous concepts of refrigeration: simple cycle. 1.2. Cascade cycle. 1.3. Double compression cycle.	X			Review notes and recommended bibliography.	1,66	3,25
2	2	Resolution of exercises on topic 1: Refrigeration cycles.		X		Examples of refrigeration exercises	1,66	3,25
3	3	Topic 2: Gas cycles. 2.1. Previous concepts of gas cycles: simple cycle of gas turbine. 2.2. Gas turbine cycles with regeneration. 2.3. Gas turbine cycles with post-combustion. 2.4. gas turbine cycles with inter-cooling.	X			Review notes and recommended bibliography.	1,66	3,25
4	4	Resolution of exercises on topic 2: Gas cycles.		X		Examples of gas cycles exercises	1,66	3,25
5	5	Topic 3: Steam cycles. 3.1. Previous concepts of steam cycles: simple Rankine cycle. 3.2. Rankine cycles with regeneration. 3.3. Rankine cycles with reheating.	X			Review notes and recommended bibliography.	1,66	3,25
6	6	Resolution of exercises on topic 3: Steam cycles.		X		Examples of steam cycles exercises	1,66	3,25
7	7	Partial test	X				1,66	3,25
8	8	Lab 1: Introduction to software for cycle design			X	Introduction to computer software for power cycles analysis	1,66	3,25

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)
9	9	Topic 4: Combined cycles. 4.1. Definition of combined cycle. 4.2. Working principle. 4.3. Description of main elements..	X			Review notes and recommended bibliography.	1,66	3,25
10	10	Resolution of exercises on topic 4: Combined cycles.		X		Examples of combined cycles exercises	1,66	3,25
11	11	4.4. Diseño HRSG. 4.5. Improvements in HRSG: different pressure levels.	X			Review notes and recommended bibliography.	1,66	3,25
12	12	Lab 2: Design of a power generation cycle.			X	Design of a power cycle using computer software	1,66	3,25
13	13	Topic 5. New trends in power cycles. 5.1 Fuels. 5.2. Supercritical and ultracritical cycles. 5.3. Optimization of design parameters.	X			Review notes and recommended bibliography.	1,66	3,25
14	14	Case study: optimization of a power generation cycle.		X		Power plants optimization proposal	1,66	3,25
	15	Additional session: Review					1,66	3,25
<b>Subtotal 1</b>							<b>25</b>	<b>49</b>
<b>Total 1 (Hours of class plus student homework)</b>							<b>74</b>	
15		Tutorials, handing in, etc					1,8	-
16	Assessment						4	4
17								
18								
<b>Subtotal 2</b>							<b>6</b>	<b>4</b>
<b>Total 2 (Hours of class plus student homework)</b>							<b>10</b>	
<b>TOTAL ( <i>Maximun 83 horas</i> )</b>							<b>83</b>	