



WEEKLY PLANNING

SESSION	WEEK	DESCRIPTION	TYPE		COMMENTS	STUDENT WEEKLY PROGRAMME		
			LECTURE	SEMINAR		DESCRIPTION	CLASS HOURS	HOME WORK HOURS
1	1	Review of engine requirements	X			Read the corresponding notes chapters Study and personal work	1,67	2
2	2	Preliminary design process: the constraint analysis <ul style="list-style-type: none"> • Theta break and throttle ratio • Models for thrust lapse and constraint estimation Non-standard atmosphere models	X			Read the corresponding notes chapters Study and personal work	1,67	3
3	2	Aircraft Propulsion: configurations and components		X	Room 3.1.S08 Seminar of Prof. F.Ehrich (MIT)	Read the corresponding notes chapters Study and personal work	1,67	2
4	3	LAB 1 - Selection of the powerplant		X	Computer room	Study and personal work Solve the proposed exercises	1,67	3
5	3	Preliminary design process: the mission analysis Parametric cycle analysis (1/4) <ul style="list-style-type: none"> • Nomenclature of characteristic ratios and efficiencies • Engine performance analysis: ideal and real turbojet 	X			Read the corresponding notes chapters Study and personal work	1,67	2
6	4	Parametric cycle analysis (2/4) <ul style="list-style-type: none"> • Polytropic efficiencies of turbomachines • Calorically perfect gases and real gases • Engine performance analysis: mixed flow turbofan with bleeds and afterburning 		X		Read the corresponding notes chapters Study and personal work	1,67	3
7	4	Parametric cycle analysis (3/4) <ul style="list-style-type: none"> • Mixer, afterburner and performances of a mixed flow turbofan with afterburner 	X			Read the corresponding notes chapters Study and personal work	1,67	3

		<ul style="list-style-type: none"> Mixed vs separate exhaust turbofan Examples of parametric cycle analysis 						
8	5	Parametric cycle analysis (4/4) <ul style="list-style-type: none"> Perform parametric cycle analysis 		X	Computer room	Study and personal work Solve the proposed exercises	1,67	2
9	5	LAB 1 PROOSIS – parametric cycle analysis		X	Computer room	Study and personal work Solve the proposed exercises	1,67	4
10	6	Introduction to performance cycle analysis	X			Read the corresponding notes chapters Study and personal work	1,67	3
11	6	Secondary systems: lubrication and cooling	X			Read the corresponding notes chapters Study and personal work	1,67	2
12	7	Off-design performances	X			Read the corresponding notes chapters Study and personal work	1,67	4
13	7	Cycle analysis of turbofan engines in PROOSIS		X	Computer room	Study and personal work Solve the proposed exercises	1,67	2
14	8	Off-design analysis in PROOSIS		X	Computer room	Study and personal work Solve the proposed exercises	1,67	3
15	8	Engine testing	X			Read the corresponding notes chapters Study and personal work	1,67	3
16	9	LAB 2 PROOSIS – performance analysis		X	Computer room	Study and personal work Solve the proposed exercises	1,67	5
17	9	Certification. Problems on engine testing		X		Study and personal work Solve the proposed exercises	1,67	3
18	10	Engine structural design	X			Read the corresponding notes chapters Study and personal work	1,67	3
19	10	Installed performances	X			Read the corresponding notes chapters Study and personal work	1,67	3

20	11	Problems on structural design		X		Study and personal work Solve the proposed exercises	1,67	2
21	11	Turbomachinery flutter	X			Read the corresponding notes chapters Study and personal work	1,67	3
22	12	Turbine cooling design (1/2)	X			Read the corresponding notes chapters Study and personal work	1,67	3
23	12	Problems on turbomachinery flutter		X		Read the corresponding notes chapters Study and personal work	1,67	3
24	13	Turbine cooling design (2/2)		X		Read the corresponding notes chapters Study and personal work Solve the proposed exercises	1,67	2
25	13	Sensors, instrumentation and control	X			Read the corresponding notes chapters Study and personal work	1,67	3
26	14	Bearing and seals	X			Read the corresponding notes chapters Study and personal work	1,67	2
27	14	Ramjets and scramjets	X			Read the corresponding notes chapters Study and personal work	1,67	2
28	15	Labs discussion Exam problems		X		Study and personal work Solve the proposed exercises	1,67	3

Subtotal 1 **46.8** **78**

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

124.8

	15	Tutorials, handing in, etc						5
	16	Assessment					3	15
	17							
	18							

Subtotal 2 **3** **20**

Total (Total 1 plus student homework hours between weeks 15-18)

147.8