

LESSON PLAN

NAME OF FACULTY : Harpal Singh Kalra

DISCIPLINE: MECHATRONICS

SEMESTER:7TH

SUBJECT: Advanced Manufacturing Technology (MT 417)

LESSON PLAN DURATION: 15 WEEKS (FROM JULY, 2018 TO DEC, 2018)

WORK LOAD (LECTURE/TUTORIAL)PER WEEK (IN HOURS) : 3 LECTURE, 1 TUTORIAL

WEEK	THEORY	
	LECTURE DAY	TOPIC(INCLUDING ASSIGNMENT/TEST)
1ST	I	Introduction to Advanced Manufacturing Technology and Processes and their use in practical life
	II	Overview to entire syllabus
	III	Hot machining, Machining of Plastics
2ND	I	Unit heads, Plastics cooling
	II	electro forming
	III	Surface Cleaning and Surface Treatments
3RD	I	Surface Coatings, Paint Coating and Slushing
	II	Adhesive Bonds, Adhesive Bond Joints
	III	Adhesives, Surface Coating for Tooling
4TH	I	Graphite Mould Coating, Vacuum Mould Process
	II	Introduction, Types of Composites materials
	III	Agglomerated Materials, Reinforced materials
5TH	I	Laminates, Surface Coated Materials
	II	Production of Composite Structures
	III	Fabrication of particulate composite Structures
6TH	I	Fabrication of reinforced Composite, Fabrication of Laminates, Machining, Cutting and Joining of Composites.
	II	Test of Unit I
	III	Introduction, Polymers, Polymerization, Addition of Polymers, Plastics, Types of plastics
7TH	I	Properties of Plastics, Processing of Thermoplastic Plastics, Injection Moulding, Extrusion Process
	II	Sheet forming processes, Processing of Thermosetting Plastics
	III	Compression Moulding, Transfer Moulding,
	I	Casting of Plastics, Machining of plastics

8TH	II	other processing methods of plastics
	III	Introduction, casting, thread chasing, Thread Rolling,
9TH	I	Die Threading and Tapping
	II	Thread Milling, Thread Measurement and Inspection
	III	Test of Unit II
10TH	I	Theoretical basis of metal forming
	II	classification of metal forming processes, cold forming
	III	Hot working, Warm working, Effect of variables on metal forming processes
11TH	I	Methods of analysis of manufacturing processes
	II	Open Die forging, Rolling Power Rolling, Drawing, Extrusion.
	III	Test of Unit III
12TH	I	Introduction, Product Application, Limitation of Die Casting, Die Casting Machines
	II	Molten metal Injection systems, Hot chamber machines, Cold chamber machines
	III	Die casting Design, Design of Die casting Dies, Types of Die casting Dies
13TH	I	Die design, Die material, Die Manufacture
	II	Die Lubrication and Coating, Preheating of Dies, Vacuum Die Casting
	III	Recent trends In Die Casting Process.
14TH	I	Quality Control, CMM
	II	Application of AI in CAD/CAM/CIM.
	III	Reverse Engineering,
15TH	I	Rapid Prototyping and Tooling.
	II	Test of Unit IV
	III	Final problem discussion