

Course Number and Name	
BME012 - JIGS FIXTURES AND PRESS TOOLS	
Credits and Contact Hours	
3&45	
Course Coordinator's Name	
Mr.Golden Renjith Nimal	
Text Books and References	
TEXTBOOK:	
1. Design of Jigs, Fixtures and Press tools, C.Elanchezhian,T.Sunderselvan, B.Vijayaramnath, Eswar Press, 2005.	
REFERENCES :	
1. ASTME Handbook of Fixture design,1960. 2. Fundamentals of tool Design ASTME, 1984. 3. Akgoroshkin, Jigs and Fixture Handbook, Mix Publishers, Moscow, 1983 . 4. Design Data, PSG Tech, Coimbatore, 2003. 5. https://www.overdrive.com/media/.../design-of-jigs-fixtures-and-press-to...	
Course Description	
To understand the functions and design principles of Jigs, fixtures and press tools To gain proficiency in the development of required views of the final design.	
Prerequisites	Co-requisites
Manufacturing Technology	Nil
required, elective, or selected elective (as per Table 5-1)	
Core elective	
Course Outcomes (COs)	
CO1	Will gain knowledge on locating and clamping devices
CO2	Will understand the types and use of jigs
CO3	Will learn the use and design of fixtures
CO4	Will learn and design the use of press tools
CO5	Learn types of presses
CO6	Understand concept of dies

Student Outcomes (SOs) from Criterion 3 covered by this Course

COs/SOs	a	b	c	d	e	f	g	h	i	j	k	l
CO1	H											
CO2	H		H	M					H			H
CO3			H			M						H
CO4	H		H					M			L	L
CO5	H											L
CO6	H		H									

List of Topics Covered

UNIT I LOCATING AND CLAMPING DEVICES

12

Introduction to jigs & Fixtures - Design principles of jigs & fixtures - Locating principles and elements – Standard parts – Clamping devices, Mechanical ,Pneumatic and hydraulic actuation, Clamping force analysis.

UNIT II JIGS

12

Drill bushes - Different types of jigs- plate, latch, channel, box, post, angle plate, angular post, turnover, pot jigs - Automatic drill jigs – Rack & pinion operated and Air operated jig components - Design and development of jigs for the given components.

UNIT III FIXTURES

12

Types of fixtures - Boring, Lathe, Milling, Broaching fixtures – Grinding, Planning and Shaping fixtures – Assembly, Inspection and Welding fixtures – Modular fixtures – Design and development of fixtures for the given components.

UNIT IV PRESS TOOLS

12

Press working terminology - Types of Presses and Press Accessories – Computation of capacities and tonnage requirements – Strip layout

UNIT V DIES

12

Design and development of various types of Cutting, Forming and Drawing dies – Blank development for cylindrical and non cylindrical shells – Compound , Progressive and Combination dies.