

**GOVERNMENT POLYTECHNIC, MALKANGIRI**  
**DEPARTMENT OF MECHANICAL ENGINEERING**

<b>Discipline:- MECHANICAL ENGG.</b>	<b>Semester:- 3RD</b>	<b>Name of Teaching Faculty:- Sri SAURAV RANJAN PRADHAN, WORKSHOP SUPERINTENDENT</b>	
<b>SUB:-Th.1- Production Technology</b>	<b>No of Days /per week class allotted:-04</b>	<b>Semester From Date:-15.09.22 To Date:-21.01.23 No of Weeks-15</b>	
<b>PRE-REQUISITE</b>	<b>Basic knowledge about Manufacturing process.</b>		
<b>COURSE OUTCOMES</b>	<p>CO1:- Understand the different components &amp; processes involved in press tool operation.</p> <p>CO2:- Understand how to minimize the job setting and tool setting times in mass production.</p> <p>CO3:- Understand the industrial requirements of fabrication systems.</p> <p>CO4:- Understand the manufacturing processes like casting and powder metallurgy.</p>		
<b>WEEK</b>	<b>CLASS DAY</b>	<b>THEORY TOPICS</b>	<b>DELIVERY METHOD</b>
1ST	1st	Introduction to Metal Forming Processes	Whiteboard
	2nd	Extrusion Process, Definition & Classification	Whiteboard
	3rd	Explain direct extrusion process, Explain indirect extrusion process	Whiteboard
	4th	Explain impact extrusion process	Whiteboard
2ND	1st	Define rolling. Classification, Differentiate between cold rolling and hot rolling process.	PPT
	2nd	Different types of rolling mills used in Rolling process	Whiteboard
	3rd	<b>Chapter-1 :- Discussion &amp; Assignment Questions</b>	Whiteboard
	4th	Welding process and classification of various welding processes, fluxes used in welding process	Whiteboard
3RD	1st	Oxy-acetylene welding process	Whiteboard
	2nd	Various types of flames used in Oxy-acetylene welding process	Whiteboard
	3rd	Explain Arc welding process	Whiteboard
	4th	Specify arc welding electrodes	Whiteboard
TH	1st	Resistance welding process and classification	PPT
	2nd	Various resistance welding processes, Spot welding	Whiteboard
	3rd	Seam welding.	Whiteboard
	4th	Projection welding	Whiteboard

5TH	1st	Butt welding, flash welding	Whiteboard
	2nd	TIG welding process, Principle of operation	Whiteboard
	3rd	TIG welding process, Advantages, Disadvantages, Applications	Lecture notes
	4th	MIG welding process, Principle of operation	Whiteboard
6TH	1st	MIG welding process, Advantages, Disadvantages, Applications	Lecture notes
	2nd	Welding defects with causes and remedies	Whiteboard
	3rd	<b>Chapter-2 Discussion &amp; Assignment Questions</b>	Whiteboard
	4th	Casting process and Classification of various Casting processes	PPT
7TH	1st	Explain the procedure of Sand mould casting	Whiteboard
	2nd	Different types of molding sands	Whiteboard
	3rd	Composition and properties of moulding sands	Lecture notes
	4th	Classification of different pattern	Whiteboard
8TH	1st	Various pattern allowances	Whiteboard
	2nd	Classification of core	Whiteboard
	3rd	Construction and working of cupola furnace	Lecture notes
	4th	Construction and working of cupola furnace	Lecture notes
9TH	1st	Crucible furnace	Whiteboard
	2nd	Crucible furnace	PPT
	3rd	Die casting method	Whiteboard
	4th	Centrifugal casting such as true centrifugal casting with advantages, limitation and area of application.	Whiteboard
10TH	1st	Centrifuging	Whiteboard
	2nd	Casting defects with their causes and remedies	Whiteboard
	3rd	<b>Chapter-3 Discussion &amp; Assignment Questions</b>	Whiteboard
	4th	Powder metallurgy process	Whiteboard
11TH	1st	Advantages of powder metallurgy technology technique	Lecture notes
	2nd	The methods of producing components by powder metallurgy technique.	Whiteboard
	3rd	The methods of producing components by powder metallurgy technique.	Whiteboard
	4th	Sintering process	Whiteboard
12TH	1st	Economics of powder metallurgy	Lecture notes
	2nd	<b>Chapter-4 Discussion &amp; Assignment Questions</b>	Whiteboard

	3rd	Press Works: blanking, piercing and trimming	Whiteboard
	4th	Various types of die and punch	PPT
13TH	1st	Various types of die and punch	PPT
	2nd	Simple dies, Various advantages & disadvantages	Whiteboard
	3rd	Compound dies, Various advantages & disadvantages	Whiteboard
	4th	Progressive dies, Various advantages & disadvantages	Whiteboard
1TH	1st	<b>Chapter-5 Discussion &amp; Assignment Questions</b>	Whiteboard
	2nd	Jigs and fixtures	Lecture notes
	3rd	Advantages of using jigs and fixture	Whiteboard
	4th	Various types of jig and fixtures	PPT
15TH	1st	Principle of locations	Whiteboard
	2nd	The methods of location with respect to 3-2-1 point location of rectangular jig	Whiteboard
	3rd	The methods of location with respect to 3-2-1 point location of rectangular jig	Whiteboard
	4th	<b>Chapter-6 Discussion &amp; Assignment Questions</b>	Whiteboard

#### **LEARNING RESOURCES-**

01:- Production technology –Vol-I &II, O.P.KHANNA

02:-Workshop Technology, Vol – I&II,B.S. Raghuwanshi

03:- Manufacturing Technology,Vol – I&II,P.N. Rao

04:- Manufacturing technology, Vol- I,P.C.Sharma

#### **WEBSITE RESOURCES-**

01:- [www.youtube.com](http://www.youtube.com)

**Sign. of Faculty concerned**

**Sign. of HOD**

**Sign. of Academic Co-ordinator**

**PRINCIPAL**  
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