

DHABALESWAR INSTITUTE OF POLYTECHNIC

LESSON PLAN

Discipline: MECH	Semester: 4TH	Name of the Teaching Faculty S. Mahapatra
Subject:	No. of days per week Class Alloted:	Semester from Dt. <u>14.02.2023</u> to Dt. <u>23.05.2023</u> No. of Weeks: <u>15</u>
Week	Class Day	Theory / Practical Topics
1st	1st	1.1 Tool materials Composition of various tool materials
	2nd	1.2 Physical properties & uses of such tool materials
2nd	1st	2.1 cutting tools
	2nd	2.1 - cutting action of various and tools such as chisel, hacksaw blade, dies and reamer.
	3rd	2.3 - Turning tool geometry and purpose of tool angle.
	4th	2.5 - Machining process parameters (Speed, feed and depth of cut)
	5th	2.6 - coolants and lubricants in machining and purpose
3rd	1st	3.0 - Lathe Machine
	2nd	3.1 - construction and working of lathe and CNC lathe operations carried out in a lathe (Turning, thread cutting, taper turning)
	3rd	internal machining, parting off, facing knurling.
	4th	Safety measures during machining.
	5th	3.2 - capstan lathe Difference with respect to engine lathe.
	6th	

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7th	3rd	Major components and their function Define multiple tool holders
	4th	3.3 Turret lathe Difference with respect to capstan lathe.
	5th	Major components and their function.
	1st	
	2nd	3.4 Draw the tooling layout preparation of a hexagonal bolt & bush.
8th	3rd	4.0 Shaper 4.1 potential application area of a shaper machine.
	4th	4.2 Major components and their function
	5th	4.3 Explain the automatic feed mechanism.
	1st	4.4 Explain the construction and working of tool head.
	2nd	4.5 Explain the quick return mechanism through sketch.
9th	3rd	4.6. State the Specification of a shaping machine.
	4th	5.0 Planning Machine
	2nd	5.1 Application of area of a planer and its difference with respect to shaper.
	3rd	5.2 Major components and the functions.

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Week	Class Day	Theory / Practical Topics
10th	4th	5.3 The table drive mechanism.
	4th	5.4 Working of tool and tool supports.
	4th	5.5- clamping of work through sketch.
11th	2nd	6.0 Milling Machine
	3rd	6.1 Types of milling Machine and operations performed by them and also same for CNC milling Machine.
	4th	6.2 Explain work holding attachment.
	2nd	6.3 construction & working of simple dividing head, universal dividing head.
	3rd	6.4 procedure of simple and compound indexing.
	4th	6.5 Illustration of different indexing methods.
	5th	
	5th	
12th	4th	7.0 Slotter
	4th	7.1 - Major components and their function.
	2nd	7.2 - construction and working of slotter machine.
	3rd	7.3 - Tools used in slotter
	4th	8.0. Grinding
	4th	8.1 - Significance of grinding operations

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Week	Class Day	Theory / Practical Topics
13th	5th	8.2 Manufacturing of grinding wheels
	1st	8.3 criteria for selecting of grinding wheels
	2nd	8.4 Specification of grinding wheels with example working of • cylindrical Grinder • Surface Grinder. • Centreless Grinder
	3rd	9.0 Internal machining operation • classification of drilling machine.
	4th	9.1 Working of • Bench drilling machine • Pillar drilling machine • Radial drilling machine
14th	5th	9.2 Boring • Basic principle of Boring • Different between Boring and drilling.
	1st	
	2nd	9.3 Broaching • Types of Broaching (Pull type, Push type)
	3rd	
	4th	• Advantages of Broaching applications
	5th	

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15th	1st 2nd	10 Surface Finish, lapping 10.1 Definition of Surface Finish. 10.2 Description of lapping and explain their specific cutting