## **LESSON PLAN**

DEPARTMENT OF MECHATRONICS ENGINEERING, ITT, CHOUDWAR

SUBJECT: MACHINE TOOL TECHNOLOGY Periods: 4 per week

## NAME OF FACULTY: LEEZA MISHRA

CADEMIC VEAD 2021 20

**SEMESTER:** 3rd

No. of weeks: 15

Week	Class Day	Theory / Practical Topics
1st	1 <sup>st</sup>	Brief discussion about Safety, Safety in workshop, Personal Safety causes of
		accidents and remedies for it.
	$2^{nd}$	Importance Of safety
	3 <sup>rd</sup>	Discuss about Hand tools and devices
	$4^{\text{th}}$	Discuss about Hand tools and devices
2 <sup>nd</sup>	1 <sup>st</sup>	Discuss about Bench Layouts
	$2^{nd}$	Discuss about Types of vies
	3 <sup>rd</sup>	Discuss about Types and specification of files
	4 <sup>th</sup>	Discuss about Hack shaw frame and blades
3 <sup>rd</sup>	1 <sup>st</sup>	Discuss about Types of chisel and angles
	$2^{nd}$	Discuss about Hammer and types of hammer
	3 <sup>rd</sup>	Discuss about scraper and it's types
	4 <sup>th</sup>	Discuss about fitting operation like chipping, filling, scrapping
$4^{\text{th}}$	1 <sup>st</sup>	Discuss about fitting operation like grinding, marking, sawingdrilling,
	$2^{nd}$	Discuss about fitting operation like Reaming, dieling, tapping
	3 <sup>rd</sup>	Explaining in theory of chip removal
	4 <sup>th</sup>	Explaining in theory of orthogonal and oblique cutting
$5^{\text{th}}$	1 <sup>st</sup>	Explaining in theory of speed feed & depth of cut.
	$2^{nd}$	Discuss about Cutting tool material & it's properties.
	3 <sup>rd</sup>	Discuss about cutting tool of Geometry of single point cutting tool
	4 <sup>th</sup>	Explaining Importance of cutting fluids, types and its application
6 <sup>th</sup>	1 <sup>st</sup>	Introduction to drilling machine, Types
0	2 <sup>nd</sup>	
	3 <sup>rd</sup>	Specification of drilling machine
	4 <sup>th</sup>	Drilling machine mechanism operation discussing
7 <sup>th</sup>		Discuss about Work holding
/"	1 <sup>st</sup>	Discuss about tool holding devices
	$2^{nd}$	Drills-Nomenclature of twist drill, types, material, size
	- rd	designation as per ISI
	3 <sup>rd</sup>	sharpening of drills, counter boring & counter sinking.
th	4 <sup>th</sup>	Reamers and Taps—Types, importance ,advantages and disadvantages
$8^{\text{th}}$	1 <sup>st</sup>	Reamers and Taps operation
	$2^{nd}$	Introduction to Lathe, types of Lathe, parts of Lathe-Bed, Headstock,
	rd	Tailstock carriage,& Lead screw
	3 <sup>rd</sup>	Lathe accessories & attachments
41-	4 <sup>th</sup>	Explaining Driving mechanism
9 <sup>th</sup>	1 <sup>st</sup>	Explaining feed mechanism
th	2 <sup>nd</sup>	Explaining thread cutting
	3 <sup>rd</sup>	Lathe operations—Plain, step, , facing etc.
	4 <sup>th</sup>	Lathe operations taper turning & it is calculation
$10^{\text{th}}$	$1^{st}$	Solving problems of taper turning operation

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	$2^{nd}$	Function and nomenclature of screw threads, types of thread-acme,
	*d	knuckle, buttress, trapezoidal, square metric, BSW.
	3 <sup>rd</sup>	Introduction to milling machine,
	$4^{\text{th}}$	Types, attachment and accessories
11 <sup>th</sup>	$1^{st}$	work and tool holding devices of milling machine
	$2^{nd}$	Geometry of milling cutter, cutting speed, feed, & depth of cuts.
	3 <sup>rd</sup>	Different types of milling operation: up-milling, down milling, face Milling, side milling, plain milling, end milling, m-milling, gang milling, straddle milling.
	$4^{\text{th}}$	Introduction to grinding machine and its types.
$12^{\text{th}}$	$1^{st}$	Grinding operations-Types, wet and dry grinding.
	$2^{nd}$	Grinding wheel—Specification, abrasive, grain, grade, structure, and types of wheel, dressing of wheel,
	$3^{\rm rd}$	mounting and balancing and its importance of grinding wheel
	$4^{\text{th}}$	Discus about types of grinding wheel
13 <sup>th</sup>	$1^{st}$	Introduction of shaper and its working principle of shaper,
	$2^{nd}$	Introduction of planer and its working principle of planer
	3 <sup>rd</sup>	Introduction of slotter and its working principle of slotter.
	$4^{\text{th}}$	Quick return mechanism of shaper and its types
14 <sup>th</sup>	$1^{st}$	Quick return mechanism crank and slotted link mechanism
	$2^{nd}$	Whitworth quick return mechanism
	$3^{\rm rd}$	Hydralic shaper mechanism
	$4^{\text{th}}$	Knowledge about Presses and press tools
$15^{\text{th}}$	$1^{st}$	Classifications, constructional features, types, working principle
	2 <sup>nd</sup>	Press tools—Punch, die, material, clearance between punch & die. Types of dies. Press working- Various working operations, it's definition.
	$3^{\rm rd}$	Doubt clearing class
	$4^{\text{th}}$	Previous years Question discussion
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