JIS COLLEGE OF ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

MACHINING & MACHINE TOOL LAB

Details of Laboratory:

Lab in-charge: Mr. Shishir K Biswas

Machining & Machine Tool Laboratory is a well equipped laboratory which provides ideas on different kind of machine tools and machining. This laboratory is scheduled for 6th semester Mechanical engineering students. Apart from curriculum, some additional experimental setups are there which helps the students to enhance their knowledge. Students also get opportunity to implement their ideas through various application oriented micro projects.

Major Equipments:

1	H.S.S. single point cutting tool
2	Chuck key
3	Tool post key
4	Outside caliper
5	Steel rule
6	Vernier calipers
7	Plane (face) milling cutter
8	Hammer
9	Brush
10	Tool-Force dynamometer
11	Temperature measuring kits
12	Lathe Machine
13	Milling Machine
14	Shaper

List of Experiments:

Sl.	Description
1	Measurement of cutting forces (Pz and Px or Py) in straight turning at different feeds and velocities
2	Measurement of average cutting temperature in turning under different speed – feed combinations
3	Measurement of surface roughness in turning under different conditions
4	Study of chip formation (type, color & thickness) in turning mild steel and evaluation of role of variation of cutting velocity and feed on chip reduction coefficient /cutting ratio and shear angle
5	Conversion of circular rod Into square rod
6	Production of a straight toothed spur gear from a cast or forged disc

Lab Occupancy

JIS College of Engineering
Lecture and Lab schedule for odd semester 2018-2019 STREAM/BATCH: ME- 3A
B.Tech 3rd Year classes Room No.Main Building 420

DAYS	10 am to 11 am	11 am to 12 am	12 pm to 1pm	1 to 2pm	2 to 3pm	3 to 4 pm	4 to 5 pm	5 to 6 pm
MON				B R E A K	ME 681,Gr.ME3A(1)[AP+TS]			
					ME 682,Gr.ME3A(2)[MRI+SH]			
TUE						ME 681,Gr.ME3A(2)[SKB]		
						ME 682,Gr.ME3A(1)[MRI+BD]		
WED						ME 691,Gr.ME3A(2)[BCB] ME 692,Gr.ME3A(1)[SKB]		
THU						ME 691,Gr.ME3A(1)[BCB] ME 692,Gr.ME3A(2)[SKB]		
FRI								

ME 601-IC Engine & Gas Turbine, ME 602- Machining Principles & Machine Tools, ME 603- Design of Machine Elements-II,ME604A-Power Plant Engineering,ME 604B-Gas Dynamics and Jet Propulsion, ME605A-Advanced Welding Technology, ME 605B-CAD/CAM,HU(ME)601-Economics & Accountancy, ME 691- Internal Combustion Engine Lab, ME 692- Machining & Machine Tools Lab, ME 681-Mini Project, ME682-Machine Design Practice.

Faculty name: PKB- Dr. P.K. Bardhan,, SG-Dr. Sandip Ghosh, ARS-Dr.Anal Ranjan Sengupta, MRI- Mr. Munshi Rasidul Islam, SKB- Mr. Shishir Kumar Biswas, AS - Mr. Anirban Sarkar, SH-Mr. Subhasish Halder, BCB - Mr. Bikash Chandra Bhunia, TP- Mrs.Thia Paul, DM-Mr.Dhiraj Mondal, AK-Mr.Arnab Kundu, SM- Mr. Sourav Majumder,AG-Dr.Anindya Guha

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Routine Coordinator	**HOD**	**Principal**
(Prof. P. Biswas)	**(Prof. (Dr.) S. Ghosh)**	**(Prof. (Dr.) M. R. Dave)**

JIS College of Engineering
Lecture and Lab schedule for odd semester 2018-2019 STREAM/BATCH: ME-3B
B.Tech- 3rd Year classes - Room No.202 ME Building Block-A

DAYS	10 am to 11 am	11 am to 12 am	12 pm to 1pm	1 to 2pm	2 to 3pm	3 to 4 pm	4 to 5 pm	5 to 6 pm
MON				BREAK	ME 691,Gr.ME3B(1)[UR]			MENTORS MEET
					ME 692,Gr.ME3B(2)[AK]			
TUE						ME 692,Gr.ME3B(1)[AK]		
						ME 691,Gr.ME3B(1)[UR]		
WED						ME 681,Gr.ME3B(1)[SS]		
						ME 682,Gr.ME3B(2)[TS]		
THU						ME 681,Gr.ME3B(2)[TS]		
						ME 682,Gr.ME3B(1)[SP]		
FRI								

ME 601- IC Engine & Gas Turbine, ME 602- Machining Principles & Machine Tools, ME 603- Design of Machine Elements-II, ME604A-Power Plant Engineering, ME 604B-Gas Dynamics and Jet Propulsion, ME605A-Advanced Welding Technology, ME 605B-CAD/CAM,HU(ME)601-Economics & Accountancy, ME 691- Internal Combustion Engine Lab, ME 692- Machining & Machine Tools Lab, ME 681-Mini Project, ME682 -Machine Design Practice.

Faculty name: PKB - Dr. P.K. Bardhan,SP- Dr. Suresh Prasad, UR-Mr.Uttam Roy,SS-Mr.Sujoy Saha, SG - Dr. Sandip Ghosh,MM-Dr. Manish Mukhopadhya, MRI-Mr.Munshi Rasidul Islam, SKB-Mr.Shishir Kumar Biswas, AS-Mr.Anirban Sarkar, SH-Mr. Subhasish Halder, BCB - Mr. Bikash Chandra Bhunia, TP- Mrs.Thia Paul, DM-Mr.Dhiraj Mondal,TS-Tanmoy Sarkar, AK-Mr.Arnab Kundu ,SM-Mr.Sourav Majumder

Routine Coordinator	HOD	Principal
(Prof. P. Biswas)	(Prof. (Dr.) S. Ghosh)	(Prof. (Dr.) M. R. Dave)

Course Name: Machining & Machine Tools Lab

Course Code: ME 691

Prerequisite: Workshop, Machining & Machine Tools theory

Course Objective: To expose students into different kind of machine tools and machining processes.

Course Outcomes: After the completion of this course, the student should be able to:

ME 691.1 Understand how to Measure cutting forces (P_Z and P_X or P_Y) in straight turning at different process parameters.

ME 691.2 Measure of average cutting temperature and surface roughness in turning under different speed – feed combinations.

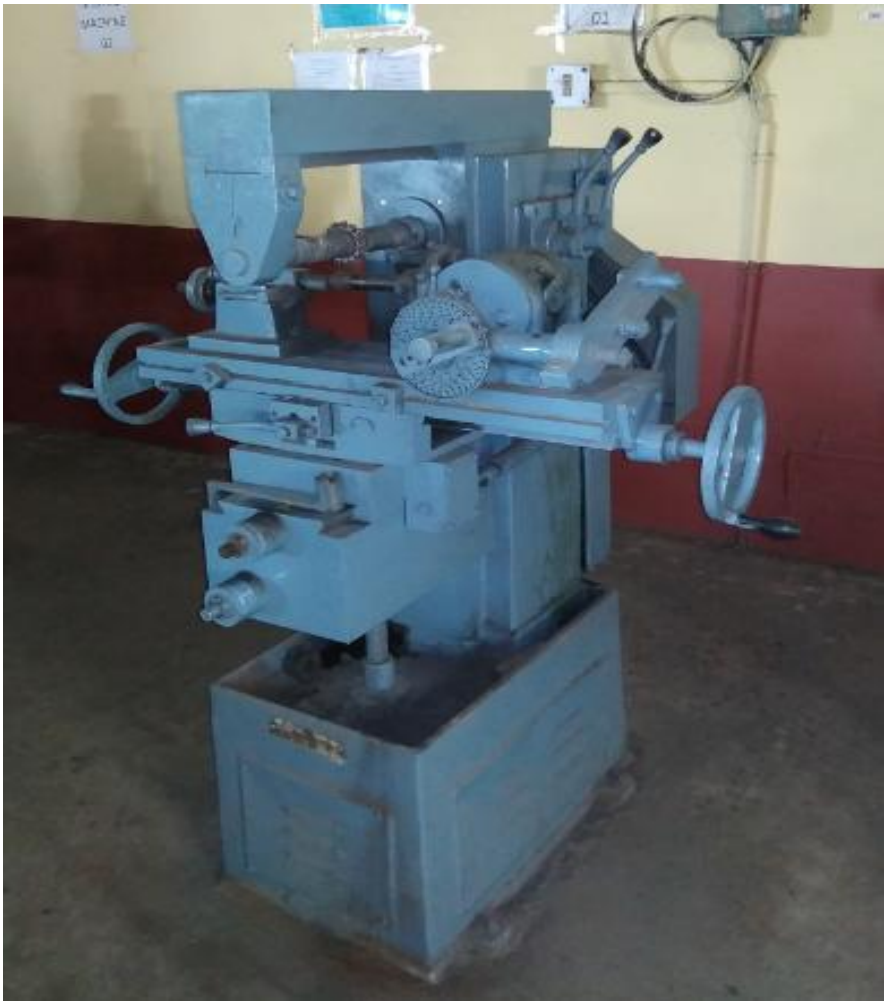
ME 691.3 Examine chip formation (type, color & thickness) in turning mild steel and evaluation of role of variation of cutting velocity and feed on chip reduction coefficient.

ME 691.4 Create a straight toothed spur gear from a cast or forged disc and convert circular rod into square rod.

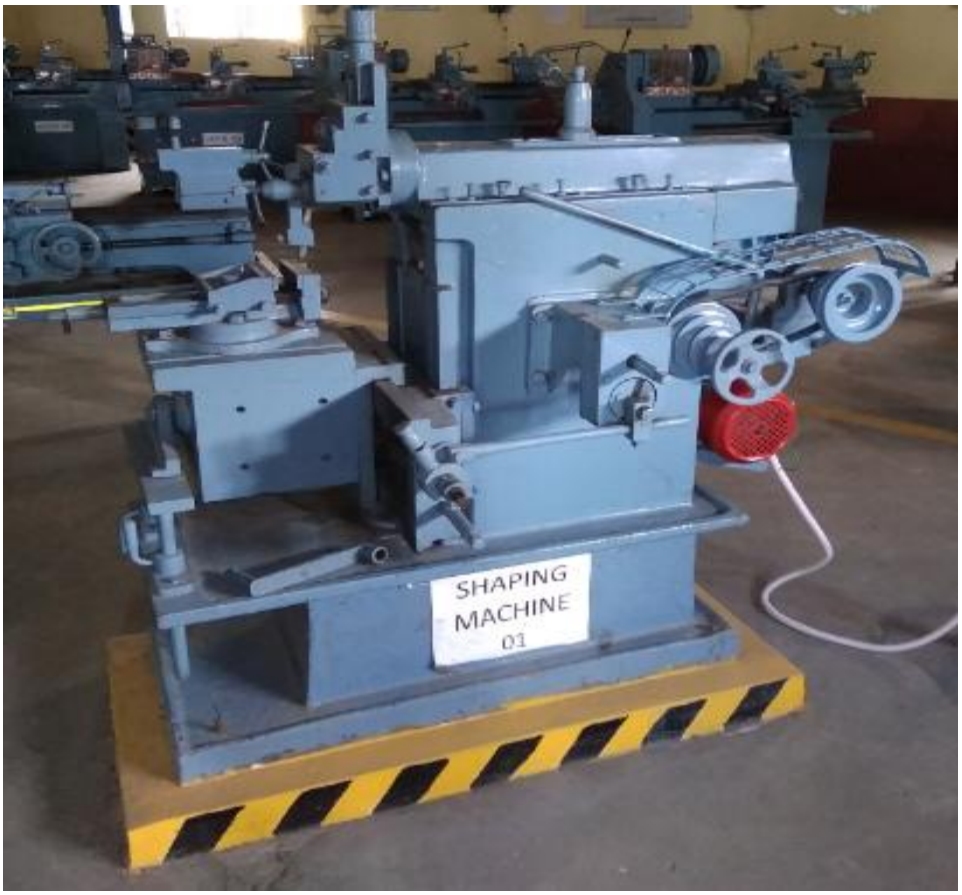
Course Articulation Matrix:

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
ME691.1	2	2	1	-		-	-	-	2	1			2	3	
ME691.2	2	2	1	-	1	-	-	-	3	1		1	2	3	2
ME691.3	1	2	1	-	1	-	-	-	3	1		2	1		
ME691.4	1	2	3	-		-	-	-	3	1					1
AVG	**1.5**	**2**	**1.5**	**0**	**0.5**	**0**	**0**	**0**	**2.7**	**1**	**0**	**0.7**	**1.6**	**3**	**1.5**

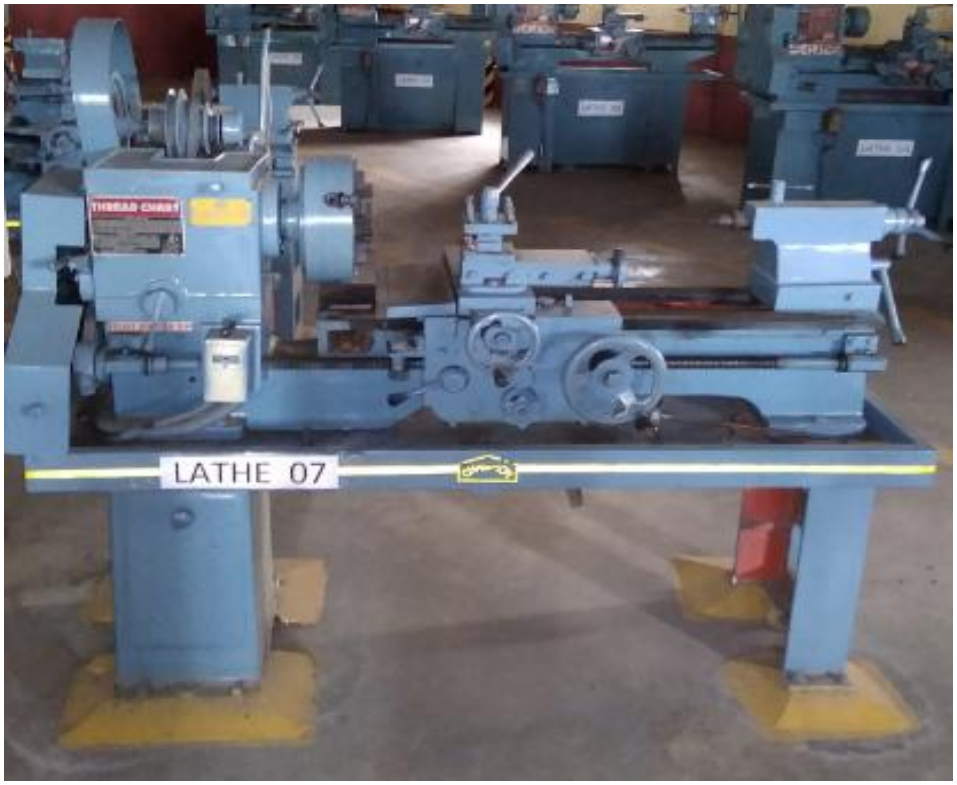
Apparatus Details:



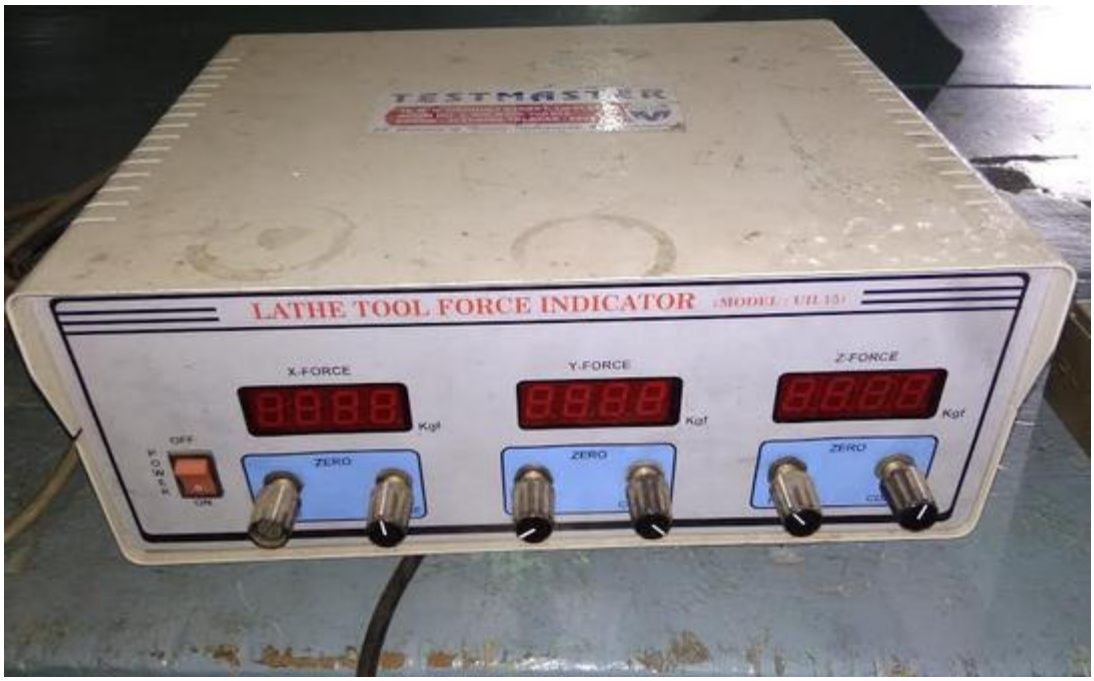
Milling Machine



Shaper Machine



Lathe Machine



Tool Force Dynamometer