University of Management and Technology
School of Engineering
Department of Mechanical Engineering,

Course Outline

Course code: **ME 322L** Course title: **Machining Processes Lab**

Program	BSME
Credit Hours	1
Duration	One semester
Learning Methodology:	Lab instructions and experiment
Semester	F2024
Resource Person	Muhammad Ammar Arshad
Email	ammar.arshad@umt.edu.pk
Counselling Hours	Monday- Friday (11:00 - 02:00)

Course Learning Outcomes (CLOs) and their Mapping to Program Learning Outcomes (PLOs):

Semester	Course Code	Course	Course Learning Outcomes	PLO 1 Engg. Knowledge	PLO 2 Problem Analysis	PLO 3 Solution Design	PLO 4 Investigation	PLO 5 Mod. Tool Usage	PLO 6 Engr. & Society	PLO 7 Env. & Sust.	PLO 8 Ethics	PLO 9 Team Work	PLO 10 Communication	PLO 11 Proj. Mgmt.	PLO 12 Lifelong Learning
5th	ME 341 L	Machine Tool & Machining (Lab)	1. Perform the experiment to measure different machining parameters for machining process. (P2)		✓										
			2. Calculate the machining parameters by using appropriate relations (C3)	✓											
			3. Contribute to experiment effectively as per instructions in a Team(A2)									✓			

Grade Evaluation Criteria

Components	Marks
Quizzes	10
Open Ended Lab	10
Lab Report	30
Final Evaluation (external viva and performance for given experiment)	50
Total	100

List of Experiments

Experiment No.	Experiment Title	Week	CLOs
1	Introduction to Machine tools & Machining Lab & Draw Layout of Machining shop.	1	2,3
2	Introduction to lathe Machine perform straight turning and calculate machining time.	2	1,2,3
3	To Perform Tapper turning on Lathe Machine	3	1,2,3
4	Perform facing operation on MS rod to calculate machining time and Material removal rate (MRR).	4	1,2,3
5	To obtain Right hand screw threaded workpiece of given dimensions	5	1,2,3
6	To prepare an object of specific dimensions on a CNC lathe machine by using programming codes	6	1,2,3
7	a) Introduction to drilling machine. b) Perform straight drilling to calculate Material removal rate and Machining Time	7	1,2,3
8	Perform facing operation on shaper machine to calculate Machining Time.	9	1,2,3
9	To perform V-cut machining on the given work piece by using shaper machine	10	1,2,3
10	Introduction to Milling Machine and perform face milling to calculate Machining times	11	1,2,3
11	To create a Hexagonal Head on a circular rod by using Plain indexing method	12	1,2,3
12	Formation of spur gear by using involute gear cutter on horizontal milling machine	13	1,2,3
13	Open Ended Lab	14	1,2,3