

MECHANICAL ENGINEERING DEPARTMENT

Session 2024-2025(6th semester)

Subject:-Metrology and Quality Control.

Load:-3 hrs Theory ,4 hrs Practical

Lesson Plan

WEEK	THEORY		PRACTICALS	
	LECTURE NO.	TOPIC	PRACTICAL No.	TOPIC
1st	1	Unit-I : Chapter-1: Inspection , introduction to inspection, planning of inspection w5h principle	1	use of dial indicator for measuring paper
	2	types of inspection: remedial, preventive and operative inspection, in-coming, in process and final inspection		
	3	standards of measurement: international, national and company standards line and wavelength standard		
2nd	4	factors influencing the quality of manufacture CHAPTER-2: MEASUREMENT AND GAUGING-I , introduction, definition, basic principles used in measurement and gauging	2	use of combination set, bevel protector and sine bar for measuring taper
	5	mechanical optical, electrical and electronic,		
	6	slip gauges, clinometer, , comparator- mechanical,		
3rd	7	comparator- electrical and pneumatic comparator	1	use of dial indicator for measuring paper
	8	Revision of chapter-1		
	9	UNIT-II: CHAPTER-3 : MEASUREMENT AND GAUGING -II , types of gauges, L		
4th	10	thread, height, depth, form, filler wire and their applications for linear, angular, surface, thread and gear measurement,	2	use of combination set, bevel protector and sine bar for measuring taper
	11	gauge tolerances tool room microscope, profile projector		
	12	Revision of chapter-2		
5th	13			
	14	Revision of chapter-1, 2 & 1st sessional Test		
	15			
6th	16	Revision of chapter-3	3	measurement of thread characteristic using vernier and gauges
	17	chapter 4- Errors in measurement , geometrical parameters and errors: errors and their effect on quality		
	18	concept of errors measurement of geometrical parameter such a straightness, flatness and parallelism		
7th	19	UNIT-III: Chapter-5- STATISTICAL QUALITY CONTROL-I : sampling plans	4	use of slip gauge in measurement of centre distance between two pins
	20	basic statistical concept, empirical distribution and histograms		
	21	Central tendency measures-frequency, mean, mode, standard deviation, normal distribution, binomial and poison distribution		
8th	22	Chapter-6: STATISTICAL QUALITY CONTROL-II , introduction to control charts variable and attribute chart	3,4	Revision of Practical-3, 4
	23	X-bar and R chart		
	24	np, P, C charts and their application		
9th	25			Viva voce
	26	Revision & 2nd sessional Test		
	27			
10th	28	UNIT-IV. Chapter-7: SAMPLING PLANS , selection of sample size method of taking samples, frequency of samples, acceptance sampling,	5	use of tool maker's microscope and comparator
	29	inspection plan format and test reports		
	30	Chapter- 8. MODERN QUALITY CONCEPTS , concept of total Quality management (TQM)		
11th	31	National and international codes	6	plot frequency distribution for 50 turned components
	32	ISO- 9000, concept and its evolution		
	33	UNIT-V Chapter-9 QUALITY CONTROL TOOLS , QC tools- fish bone diagram, cause and effect diagram		
12th	34	scatter diagram, histogram, introduction to Kaizen, 5S and Quality circle	7	with the help of given data, plot X-bar and R, P, C charts.
	35	Revision of chapter-7,8,9		
	36	Chapter- 10. INSTRUMENTATION , transducers and its different types		
13th	37	measurement of mechanical quantities such as displacement		Revision of Practical-5,6,7
	38	vibration, frequency, pressure, temperature		
	39	electro mechanical transducers of resistance capacitance and inductance type		
14th	40			Viva voce
	41	Revision & 3rd sessional Test		
	42			

15th	43	Revision		Revision of previous practicals
	44	Revision		Revision of previous practicals
	45	Revision		Revision of previous practicals

Subject Incharge-Ms Reena

O/I Department-Mr Amit Attri

