



Department of Mechanical Engineering

B.E. 5th Sem

Course: Heat Transfer

Course Code: (5ME01)

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Solve steady state heat transfer problems of 1-D heat conduction with and without internal heat generation.	L3
2	Design and to analyse the performance of extended surfaces.	L4
3	Explain the laws of radiation and its applications.	L2
4	Predict heat transfer coefficients for forced convection heat transfer applied to internal and external flow conditions.	L3
5	Determine heat transfer coefficients for free convection heat transfer	L4
6	Design and to analyse the performance of heat exchangers using NTU and LMTD methods.	L5

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Course: Heat Transfer-lab

Course Code: (5ME06)

At the end of Heat Transfer Course-lab the student will be able:

Co.	Lab Outcomes	Level of Learning
No		(As per Bloom's
		Taxonomy)
1	Determine thermal conductivity for metal bar and	L-5
	insulating powder experimentally	
2	Determine heat transfer coefficients in free and forced	L-5
	convection experimentally	
3	Evaluate various parameters in the radiation heat	L-5
	transfer such as Emissivity, Stefan Boltzman's	
	constant etc. experimentally	





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Course: METROLOGY & QUALITY CONTROL

Course Code: (5ME02)

At the end of METROLOGY & QUALITY CONTROL Course the student will be able:

Co.	Course Outcomes	Level of Learning
No		(As per Bloom's Taxonomy)
1	Describe methods of quality control and its importance to industry.	L3
2	Estimate various control charts using statistical quality control tools.	L5
3	Analyse various types of non-destructive testing.	L4
4	Evaluate various types of standard measurements.	L5
5	Evaluate linear and angular measurements.	L5
6	Evaluate gear measurement.	L5

Course: METROLOGY & QUALITY CONTROL-lab

Course Code: (5ME07)

At the end of METROLOGY & QUALITY CONTROL-lab Course the student will be able:

Co. No	Lab Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Apply the principles involved in measurement and inspection.	L2
2	Select and use appropriate measurement instruments for a given application.	L1
3	Apply the basics of sampling in the context of manufacturing.	L3

Course: Kinematics of Machines

Code: (5ME03)

At the end of Kinematics of Machines Course the student will be able:

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Identify specific links for suitable development of various mechanisms.	L3
2	Analyse the Velocity and acceleration method to determine the motion of mechanisms.	L4
3	Use of graphical and analytical methods for synthesis of mechanisms	L3
4	Evaluate frictional torque in pivot, collar bearings, Clutches and Dynamometers	L5
5	Design the cam profile and to select proper cam, follower mechanism.	L3
6	Apply the gears ratio for transmitting the required power.	L3



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Late Purushottam Hari (Ganesh) Patil Shikshan Sanstha's Mauli Group of Institution's, College of Engineering and Technology, Shegaon

AICTE Approved, Affiliated to Sant Gadge Baba Amravati University, Amravati, ISO 9001:2015 Certified

Course: Kinematics of Machines-lab

Code: (5ME08)

At the end of Kinematics of Machines-lab Course the student will be able:

Co. No	Lab Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Evaluate specific links for suitable development of various mechanisms	L3
2	Design the cam profile and to select proper Cam, follower mechanism.	L3
3	Evaluate the gears ratio for transmitting the required power.	L3

Course: Measurement System

Course Code: (5ME04)

At the end of Measurement System Course, the student will be able:

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Analyse different measurement systems.	L4
2	Calculate different types of errors in the measurement system.	L5
3	Use strain gauges and pressure measurement devices for several applications.	L2
4	Compare different methods of force, Power and flow measurement.	L4
5	Select appropriate liquid level and temperature measurement devices for given applications.	L2
6	Measure speed of motors and rotating shafts by using tachometers, stroboscope.	L4





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Course: Measurement System-lab

Course Code: (5ME09)

At the end of Measurement System Course-lab, the student will be able:

Co. No	Lab Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Choose appropriate measuring device for measurement of various quantities	L4
2	Analyse the performance of various transducers and Angular displacement measuring dvice	L4
3	Calibrate various measuring devices	L5





Department of Mechanical Engineering

B.E. 6th Sem

Course: Design of Machine Elements

Course Code: (6ME01)

At the end of Design of Machine Elements Course Student will be able to;

		Taxonomy)
1	Design Riveted and Welded joints.	L3
2	Apply Design Procedure for Knuckle Joints, Springs and Power screw	L3
3	Design types of shafts, keys, couplings for various machines.	L3
4	Analyse the various types of bearings and design procedure of IC Engine parts.	L4

Course: Design of Machine Elements-lab

Course Code: (6ME06)

At the end of Design of Machine Elements-lab Course Student will be able to;

Co. No	Lab Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Design various machine elements like joints, springs, couplings under various condition	L3
2	Convert design dimension into working / manufacturing drawing.	L4
3	Use design data book codes to standardize the design dimensions.	L3

Course: DYNAMICS OF MACHINES

Course Code: (6ME02)

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Analyse static forces of Plane mechanisms	L4
2	Analyse dynamic forces both by analytical and graphical methods on engine mechanisms.	L4
3	Analyse gyroscopic effect and Vehicle dynamics in Space mechanism	L4
4	Determine natural frequency of longitudinal & torsional vibrations of various systems	L3
5	Determine natural frequency of transverse vibrations of shaft subjected to different loading conditions	L3
6	Evaluate required parameters for static & dynamic balancing of rotating masses	L5

At the end of DYNAMICS OF MACHINES Course the student will be able:





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Course: DYNAMICS OF MACHINES-LAB Course Code: (6ME07)

At the end of DYNAMICS OF MACHINES-lab Course the student will be able:

Co. No	Lab Outcomes	Level of Learning (As per Bloom's
- 10		Taxonomy)
1	Analyse static forces of Plane mechanisms	L4
2	Evaluate natural frequency of transverse vibrations of	L3
	shaft subjected to different loading conditions	
3	Evaluate required parameters for static & dynamic	L5
	balancing of rotating masses	

Course: Control System Engineering

Course Code: (6ME03)

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Classify feedback control systems and explain modern control engineering tools	L-2
2	Solve control engineering problems using hydraulic and pneumatic controllers	L-3
3	Examine the transient response from systems	L-4
4	Analyse the stability of systems using Root Locus	L-4
5	Analyse the stability of systems using Bode Plots	L-4
6	Design a speed control system for prime movers	L-3





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Course:Non-Conventional Energy SystemsCourse Code: (6ME04)

At the end of Non-Conventional Energy Systems Course Student will be able to;

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Estimate the solar radiation intensity using various instruments.	L5
2	Explain the working of solar thermal systems and solar photovoltaic systems.	L2
3	Classify the various wind energy conversion systems.	L2
4	Describe biomass energy resources and their utilization.	L2
5	Illustrate ocean energy and the operational methods.	L3
6	Apply the principles of direct energy conversion using fuel cells and geothermal energy.	L3

Course: Renewable Energy Technologies

Course Code: (6FEME05)

At the end of Renewable Energy Technologies Course Student will be able to;

Co.	Course Outcomes	Level of Learning
No		(As per Bloom's
		Taxonomy)
1	Estimate the solar radiation intensity using various	L5
	instruments.	
2	Explain the working of solar thermal systems and	L2
	solar photovoltaic systems.	
3	Classify the various wind energy conversion systems.	L2
4	Describe biomass energy resources and their	L2
	utilization.	
5	Illustrate ocean energy and the operational methods.	L3
6	Apply the principle of direct energy conversion using	L3
	fuel cells and geothermal energy.	