

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



## **Department of Mechanical Engineering**

# B.E. 7<sup>th</sup> Sem

#### **Course: Mechatronics**

Course Code: (7ME01)

At the end of Mechatronics Course the student will be able:

Со	Course Outcomes	Level of Learning
•		(As per Bloom's
No		Taxonomy )
1	Identify elements of mechatronics systems	L2
2	Apply the concept of analog signal processing as well	L3
	as digital to analog conversion.	
3	Design Logic network and programmable logic	L3
	controller	
4	Explain the working of pneumatic and hydraulic	L2
	components for various industrial application	
5	Design and analyse pneumatic circuits	L3
6	Design and analyse hydraulic systems	L3

#### **Course: Mechatronics-lab**

## **Course Code: (7ME06)**

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

Co. No	Lab Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Identify of key elements of mechatronics system and its representation in terms of block diagram.	L3
2	Develop PLC programming for real life systems.	L3
3	Analyse time and frequency domain system model.	L4

## **Course: Productivity Techniques**

## **Course Code: (7ME02)**

At the end of Productivity Techniques Course the student will be able:		
Co.	Course Outcomes	Level of Learning
No		(As per Bloom's
		Taxonomy )
1	Explain the principles of productivity	L2
2	Analyse procedure of method study and Design of work	L4
	place layout	
3	Explain Concept of work measurement and Predetermine	L2
	Motion Time System.	
4	Apply Ergonomics Principles for Man Machine	L3
	systems	



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## **Department of Mechanical Engineering**

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	5	Incontinue Diane	
L		Incentive Flans	
	6	Analyse procedure of Business Process Re-	L4
		engineering	

## Course: Industrial Management & Costing

#### Course Code: (7ME03)

At the end of Industrial Management & Costing Course Student will be able to;

Co.	Course Outcomes	Level of Learning
No		(As per Bloom's
		Taxonomy )
1	Apply the concept of business environment,	L3
	management organization structure and its	
	relationship.	
2	Analyse the management thoughts, marketing	L4
	strategy, product development, its evolution and	
	functions.	
3	Utilize techniques of personal management,	L3
	recruitment, workers participation in management,	
	techniques in material management.	
4	Calculate factors of estimation, machining time,	L5
	fabrication cost, forging cost and foundry cost.	
5	Determine costing techniques, components of cost,	L4
	subnormal losses, waste, scrap.	
6	Prepare balance sheet, financing of business, depreciation	L5
	analysis.	

## **Course: Energy Conversion-II**

## Course Code: (7ME04)

At the end of Energy conversion-II Course the student will be able:

Co.	Course Outcomes	Level of Learning
No		(As per Bloom's
		Taxonomy )
1	Classify reciprocating air compressors	L-2
2	Analyse performance of rotary air compressors	L-4
3	Apply basic concepts of refrigeration to solve simple	L-3
	numerical on VCRS	
4	Solve the problems on psychometry using	L-3
	psychometric charts	
5	Describe working of open and closed cycle gas turbines	L-2
6	Compare the working of electric and hybrid vehicles with	L-4
	conventional vehicles	



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## Course: Energy Conversion-II-Lab

Course Code: (7ME07)

At the end of Energy conversion-II -Lab Course the student will be able:

Co.	Lab Outcomes	Level of Learning
NO		(As per Bloom's Taxonomy)
1	Evaluate the performance of reciprocating and rotary compressors experimentally	L-5
2	Analyse working of rotodynamic machines	L-4
3	Evaluate the performance of refrigeration and air	L-5
	conditioning systems experimentally	

## **Course: Automobile Engineering**

## Course Code: (7ME05)

At the end of Automation Engineering Course the student will be able:

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Classify the various engine Parts	L3
2	Describe the lubrication cooling and fuel supply system.	L2
3	Illustrate the ignition system and starting system	L2
4	Describe transmission system, differential and suspension system	L2
5	Illustrate braking system and power steering	L2
6	Illustrate electric and hybrid vehicles	L2

## **Course: Automobile Engineering**

Course Code: (7ME08)

At the end of Automation Engineering Course the student will be able:

Co. No	Lab Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Know the types of automobile & its part function	L2
2	Know the fuel feed ,cooling system	L4
3	Know electric systems in vehicles	L2





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## Course: TECHNICAL SEMINAR AND PROJECT Course Code: (7ME09)

At the end of TECHNICAL SEMINAR Course the student will be able:

Co. No	Lab Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Collect information on novel and latest development in core and allied area of the subject	L3
2	Encourage the process of independent thinking and working together in a group.	L4
3	Implement innovative ideas for social benefit	L5



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## **Department of Mechanical Engineering**

B.E. 8<sup>th</sup> Sem

## **Course: Operation Research Techniques**

Course Code: (8ME01)

At the end of Operation Research Techniques Course the student will be able:

Co.	Course Outcomes	Level of Learning
INU		Taxonomy )
1	Formulate real life optimization problems and solve them by using Linear Programming methods.	L4
2	Solve transportation and assignment problems to optimize the cost.	L3
3	Apply network models (PERT & CPM) in project management to optimize the cost and time of a project.	L3
4	Optimize the time in queues by waiting line models	L5
5	Apply replacement policy for items whose efficiency deteriorates with time.	L3
6	Formulate decision problem into mathematical model and solve by using dynamic Programming.	L4

## **Course: IC Engine**

## Course Code: (8ME02)

At the end of IC Engine Course, the student will be able:

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Illustrate engine cycles, IC engine working and performance	L2
2	Describe fuel types additives properties and fuel injection systems	L2
3	Explain combustion in SI engine and various combustion chamber	L2
4	Explain combustion in CI engine and combustion chamber for CI engine	L2
5	Evaluate the engine performance	L5
6	Examine the emissions from IC engine and their effect on human health.	L4



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## **Course: IC Engine-Lab**

Course Code: (8ME05)

At the end of IC Engine Course-Lab, the student will be able:

Co. No	Lab Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Evaluate the performance of single cylinder SI & CI engine and multicylinder engine	L5
2	Demonstrate the working of Bosh type single Plunger pump Fuel injection & nozzle	L2
3	Analyse the Exhaust gas emission from SI Engine	L4

## **Course: Production Planning and Control**

## Course Code: (8ME03)

Level of Learning **Course Outcomes** Co. (As per Bloom's No Taxonomy) 1 Explain the importance of production planning and L2 control, its functions. 2 Calculate sales forecast using various forecasting L4 methods. 3 Plan production batch size and production order for L3 maximum profit. 4 Determine machine operator interface time and L3 machine output. 5 Analyse and control inventory in various cases for L4 cost reduction. Explain various aspects of dynamic modelling and 6 L2 material requirement planning.

At the end of Production Planning and Control Course Student will be able to;

## Course: Refrigeration and Air-conditioning

## Course Code: (8ME04)

At the end of Refrigeration and Air-conditioning Course the student will be able:

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy )
1	Evaluate the effect of operating conditions on the performance of VCR system.	L4
2	Predict the performance of various multi stage pressure systems	L4
3	Describe the working and applications of different components and controls of refrigeration systems.	L2



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4	Determine psychrometric properties of moist air using chart.	L3
5	Compare various types of air-conditioning systems and air- distribution systems	L2
6	Estimate cooling load for designing air-conditioning system.	L5

#### **Course: Refrigeration and Air-conditioning -lab**

#### Course Code: (8ME06)

At the end of Refrigeration and Air-conditioning-lab Course the student will be able:

Co. No	Lab Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Evaluate performance of vapour compression refrigeration systems.	L-5
2	Evaluate the performance of air conditioning systems.	L-5
3	Analyse controls used in refrigeration and air conditioning systems.	L-4

## **Course: PROJECT**

## Course Code: (8ME07)

## At the end of PROJECT Course the student will be able:

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Apply creative process techniques in synthesizing information, problem-solving and critical thinking to demonstrate a sound technical knowledge of their selected project topic.	L3
2	Develop engineering solution to complex problems by following scientific method.	L5
3	Carry out cost and benefit analysis of the project understand through various cost models.	L4
4	Demonstrate skills professional attitude and ability to work in team.	L5
5	Apply ethical principles and norms of engineering practice.	L3