

PO, PEO, PSO and CO
of
(Mechanical Engineering)





SANT BABA BHAG SINGH UNIVERSITY DEPARTMENT NAME: MECHANICAL ENGINEERING

	PROGRAMME OUTCOMES (POs)
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and engg. specialization to the solution of complex engineering problems.
PO2	Problem analysis: Identify, formulate, research literature, and analyze engineering problems to arrive at substantiated conclusions using first principles of mathematics, natural, and engineering sciences.
PO3	Design/development of solutions :Design solutions for complex engineering problems and design system components, processes to meet the specifications with consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	Conduct investigations of complex problems: Use research-based knowledge including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in teams, and in multidisciplinary settings.
PO10	Communication: Communicate effectively with the engineering community and with society at large. Be able to comprehend and write effective reports documentation. Make effective presentations, and give and receive clear instructions.
PO11	Project management and finance: Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team. Manage projects in multidisciplinary environments.
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

HoD, ME

Dean, UIET

SANT BABA BHAG SINGH UNIVERSITY DEPARTMENT NAME: MECHANICAL ENGINEERING

	PROGRAMME SPECIFIC OUTCOMES (PSOs)
PSO1	Graduates of the program will identify, analyze and solve engineering problems related to product design, thermal engineering and manufacturing systems by acquiring knowledge in Engineering mathematics, science and Engineering fundamentals.
PSO2	Gradutaes will provide solutions to the real life multidisciplinary engineering problems using engineering knowledge, critical thinking, creativity and utilizing modern techniques and computing skills.
PSO3	Developing managerial skills by engaging in Planning, including methods design, process plan, process automation, and quality assurance systems to work effectively in a team and in a society by following ethical, societal, cultural, environmental, health, safety and legal practices.
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HoD, ME

Dean, UIET

CO-PO Mapping DEPARTMENT NAME: MECHANICAL ENGINEERING

Programme Name: UG

Course Name: Workshop/Manufacturing Practices

Course Code:

ME105

Course Year/Semester: 1/1

A.Y.: 2021-22

CO, No.	CO's	PO's	PSO's
CO1	Understanding different manufacturing techniques and their relative advantages/ disadvantages with respect to different applications with selection of a suitable technique for meeting a specific	PO5, PO1, PO12	PSO1
	fabrication need		
CO2	Acquire a minimum practical skill with respect to the different manufacturing methods and develop the confidence to design & fabricate small components for their project work.	PO5, PO1, PO12	PSO1,PSO2,PSO3
CO3	Introduction to different manufacturing methods in different fields of engineering	PO1, PO2	PSO1,PSO2
	Practical exposure to different fabrication techniques and Creation of simple components using	PO5, PO9, PO12	PSO1,PSO2,PSO3
CO4	different materials.		

Programme Name: UG

Course Name: Engineering Graphics & Design

Course Code:

ME101

Course Year/Semester: 1/2

A.Y.: 2021-22

60 N	CO's	PO's	PSO's
CO. No.	Introduction to engineering design and its place in society and engineering communication	PO1,	PSO1
201	Exposure to the visual aspects and engineering graphics of engineering design standard	PO1, PO5, PO10	PSO1,PSO2
	Exposure to the visual aspects and engineering graphics of engineering design statuture Exposure to solid modelling	PO1, PO5, PO10	PSO1,PSO2
		PO5, PO9, PO12	PSO1,PSO2
CO4	Exposure to computer-aided geometric design and creating working drawings	105,105,1012	1.001,000

Programme Name: UG

Course Name: Engineering Mechanics

Course Code:

ME221

Course Year/Semester: 2/3

A.Y.: 2021-22

66 V	201	PO's	PSO's
CO. No.	CO's Determine resultants in plane force systems	PO1, PO2	PSO1
CO1 CO2	Identify and quantify all forces associated with a static framework	PO1, PO2, PO4	PSO1
	Draw Shear Force Diagram and Bending Moment Diagram in various kinds of beams subjected to different	PO1, PO2, PO4	PSO1
CO3	kinds of loads	101,102,101	1.55.

Programme Name: UG

Course Name: Thermodynamics

Course Year/Semester: 2/3

Course Code:

ME223

A.Y.: 2021-22

O. No.	CO's	PO's	PSO's
O. No.	Students can evaluate changes in thermodynamic properties of substances	PO1, PO2	PSO1
	The students will be able to evaluate the performance of energy conversion devices	PO1, PO2, PO3, PO4	PSO1
CO2	The students will be able to differentiate between high grade and low-grade energies	PO1, PO2, PO4	PSO1

Programme Name: UG

Course Name: Machine Drawing

Course Code:

ME225

Course Year/Semester: 2/3

A.Y.: 2021-22

CO. No.	CO's	PO's	PSO's
CO. No.	Draw the machine elements including keys, couplings, cotters, riveted, bolted, and welded joints	PO1	PSO1
	Understand the representation of materials used in machine drawing.	PO1, PO10, PO12	PSO1
CO2	Construct an assembly drawing using part drawings of machine components	PO1, PO3, PO10	PSO1

Programme Name: UG

Course Name: Applied Thermodynamics Course Year/Semester: 2/4

Course Code: A.Y.: 2021-22 ME220

CO. No.	CO's	PO's	PSO's
CO. No.	Understanding of various practical power cycles and heat pump cycles.	PO1, PO2	PSO1
CO2	Analyze energy conversion in various thermal devices such as combustors, air coolers, nozzles, diffusers,	PO1, PO2, PO3, PO4	PSO1
	steam turbines and reciprocating compressors	PO1, PO2, PO4	PSO1
CO3	Understand phenomena occurring in high speed compressible flows	1	

Programme Name: UG

CO. No.

CO1

CO2

CO₃

Course Year/Sem Fluid Mechanics and Fluid machines

Course Code:

ME222

Course Year/Semester: 2/3

A.Y.: 2021-22

PSO's PSO₁ PO1, PO2, PO4 Mathematically analyze simple flow situations PO1, PO2, PO3, PO4 PSO₁ Formulate and solve one dimensional compressible fluid flow problems PO1, PO2, PO4 PSO1 Able to evaluate the performance of pumps and turbines

Programme Name: UG

Course Name: Strength of Materials

Course Code: A.Y.: 2021-22 ME224

Course Year/Semester: 2/4

CO. No.		PO's	PSO's
CO1	Students should be able to recognise various types loads applied on machine components of simple	PO1, PO2	PSO1
CO2	Understand the nature of internal stresses that will develop within the components	PO1, PO2, PO3, PO4	PSO1
CO3	Able to evaluate the strains and deformation that will result due to the elastic stresses developed within the	PO1, PO2, PO4	PSO1
.03	materials for simple types of loading.		

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Course Name: Materials Engineering

Course Year/Semester: 2/4

Course Code:

ME226

A.Y.: 2021-22

		PO's	PSO's	
CO. No.	CO's	PO1	PSO1	,
CO1	Identify crystal structures for various materials and understand the defects in such structures	PO1, PO12	PSO1	
CO2	Understand how to tailor material properties of ferrous and non-renous anoys	PO1, PO7, PO12	PSO1	
CO3	Quantify mechanical integrity and failure in materials			

Programme Name: UG

Course Name: Instrumentation and control

Course Year/Semester: 2/4

Course Code:

ME228

A.Y.: 2021-22

		PO's	PSO's
CO. No.	CO's	PO1	PSO1
COL	Understand the measurement of various quantities using instruments, Understand accuracy & range	PO1, PO12	PSO1
CO2	Techniques for controlling devices automatically	PO1, PO7, PO12	PSO1
CO3	Calibrate gauges and measuring instruments		

Programme Name: UG

Course Name: Universal Human Values: Understanding harmony

Course Code:

SSC007

Course Year/Semester: 2/4

A.Y.: 2021-22

		PO's	PSO's
CO. No.	CO's	PO7, PO8	PSO3
001	To become more aware of themselves, and their surroundings (family, society, nature)	PO9, PO10, PO12	PSO3
CO2	More responsible in life, and in handling problems with sustainable solutions.	PO12	PSO3
CO3	keeping human relationships and human nature in mind.		

Programme Name: UG

Course Name: Environmental Sciences

Course Code: A.Y.: 2021-22 EVS002

Course Year/Semester: 2/4

		PO's	PSO's
CO. No.	CO's	PO2,PO7	PSO3
	Measure environmental variables and interpret results.	PO4, PO12	PSO2,PSO3
	E-placed regional and global environmental topics related to resource use and management.	PO7, PO12	PSO2,PSO3
CO3 .	Propose solutions to environmental problems related to resource use and management		

Programme Name: UG

Course Name: Heat Transfer

Course Year/Semester: 3/5

Course Code:

ME321

A.Y.: 2021-22

		PO's	PSO's
O. No.	CO's	PO1, PO2	PSO1
201	Formulate and analyze a heat transfer problem involving any of the three modes of heat transfer Obtain exact solutions for the temperature variation using analytical methods where possible or employ	PO1, PO2, PO3, PO4	PSO1
()7	approximate methods or empirical correlations to evaluate the rate of heat transfer Design devices such as heat exchangers and also estimate the insulation needed to reduce heat losses where		PSO1
203	Design devices such as near exchangers and also estimate at a necessary.		

Programme Name: UG

Course Name: Solid Mechanics

Course Year/Semester: 3/5

Course Code: A.Y.: 2021-22 ME323

PSO's PSO₁ PO1, PO2 CO. No. CO's Understand the deformation behaviour of solids under different PO1, PO2, PO3, PO4 PSO₁ Types of loading and obtain mathematical solutions for plane stress and strain in simple geometries CO₁ PO1, PO2, PO4 PSO₁ CO₂ Analyze problems related to thick and thin cylinders

Programme Name: UG

CO₃

Course Name: Maufacturing Processes

Course Year/Semester: 3/5

Course Code:

ME325

A.Y.: 2021-22

		PO's	PSO's
CO. No.	CO's	PO1	PSO1
001	Understand the different conventional methods employed for making different products	PO1, PO12	PSO1,PSO2
CO2	Unconventional manufacturing methods employed for making different products	PO6, PO7, PO12	PSO1
CO3	Analyse different processes and their applications		

Programme Name: UG

Course Name: Kinematics and Theory of machines

Course Year/Semester: 3/5

Course Code: A.Y.: 2021-22 **ME327**

PSO's PSO₁ PO1, PO2 CO's CO, No. Design various types of linkage mechanisms PO1, PO2, PO3, PO4 PSO1 CO₁ PSO₁ PO1, PO2, PO4 Obtaining specific motion CO2 Analyse them for optimal functioning

Programme Name: UG

Course Name: Human Values and professional ethics

Course Year/Semester: 3/5

Course Code: A.Y.: 2021-22 SSC006

Country		PO's	PSO's
CO. No.	CO's	PO7, PO8	PSO3
Married Co.	1: and problems in engineering: find the solution to those problems.	PO9, PO10, PO12	PSO3
001	t C Carriaged othics codes of ethics and roles, concept of safety, risk assessment	PO7, PO12	PSO3
CO3	Gain exposure to Environment Ethics & computer ethics; know their responsibilities and rights	The second of th	

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Course Name: Constitution of India

Course Year/Semester: 3/5

Course Code: A.Y.: 2021-22 LAW005

	CO's	PO's	PSO's
CO. No.	COS	PO6	PSO3
CO1	To understand and explain concepts in constitutional law.	PO7, PO9, PO10	PSO3
CO2	Identify and discuss in depth the sources of constitution.	PO6. PO12	PSO3
CO3	To understand how the governance system is working in the country.	PO6, PO12	PSO3
CO4	To understand the relations between Centre and State including legislative, executive and financial	100,1012	1505
	Understand the distinction between various constitutional organs and their relations with each other and	2010	PSO3
CO5	concept of separation of power	PO12	

Programme Name: UG

Course Name: Mechanical Engineering Laboratory -I (Thermal)

Course Year/Semester: 3/5

Course Code: A.Y.: 2021-22 ME329

		PO's	PSO's
CO. No.	CO's	PO1, PO2, PO12	PSO1,PSO2
	Measure various properties of fluids	PO4, PO9	PSO1,PSO2
	Characterize the performance of fluid/thermal machinery	PO1.PO2	PSO1,PSO2
CO3	Measurement of Thermal conductivity of various elements		

Programme Name: UG

Course Name: Project-I Course Year/Semester: 3/5

Course Code:

ME331

A.Y.: 2021-22

PO1, PO2 PSO1,PSO2 Awareness of the tools, materials and testing for specific applications. PSO1,PSO2 PO3, PO4, PO5 Analyse the problem and solve both experimentally CO2 PO5, PO9, PO11, PO12 PSO1,PSO2 Effective utilization of computer aided software for precision work.

Programme Name: UG

Course Name: Manufacturing Technology

Course Code: A.Y.: 2021-22 ME320

Course Year/Semester: 3/6

		PO's	PSO's
CO. No.	Tooling needed for manufacturing, the dimensional accuracy and tolerances of products,	PO1	PSO1
CO1		PO1, PO12	PSO1
CO2	Assembly of different components	PO6, PO7, PO12	PSO1
CO3	Application of optimization methods in manufacturing		

Programme Name: UG

Course Name: Design of Machine Elements

Course Year/Semester: 3/6

Course Code: A.Y.: 2021-22 ME322

PSO's CO. No. Students will get an overview of the Design methodologies employed for the design of various machine PSO1,PSO2 PO1, PO2 COI components. PSO1,PSO2 PO1, PO2, PO3, PO4 CO2 Providing Failure Analysis of Design components. PO1, PO2, PO4 PSO1,PSO2 Analysis of transmission and fasteners CO₃

Programme Name: UG

Course Name: Gender, Culture, and Developement

Course Year/Semester: 3/6

Course Code:

SSC008

A.Y.: 2021-22

CO. No.	CO's	PO's	PSO's
	Mapping and analyzing perspectives, issues and debates in the field of	PO6	PSO1,PSO2
COI	development from gender perspectives,		
CO2	Examining through a gender lens, the inter-linkages between cultural practices,	PO8	PSO1,PSO2
CO2	social processes and development approaches,		
202	Understanding feminisms in global and local contexts and mapping feminist	PO8, PO12	PSO1,PSO2
CO3	interventions in knowledge,		

Programme Name: UG

Course Name: Mechanical Engineering Laboratory II - Design

Course Year/Semester: 3/6

Course Code: A.Y.: 2021-22 ME324

		PO's	PSO's
CO. No.	CO's	PO1, PO2, PO12	PSO1,PSO2
CO1	Understand the measurement of mechanical properties of materials	PO4, PO9	PSO1,PSO2
CO2	Characterize the dynamic behaviour of mechanical systems	PO1,PO2	PSO1.PSO2
CO3	Performing analysis of different components	101,102	1.55.7.

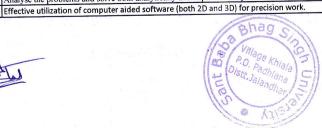
Programme Name: UG

Course Code: A.Y.: 2021-22 ME326

Course Name: Project-II Course Year/Semester: 3/6

		PO's	PSO's
O. No.	CO's Fabricating a product with awareness of the tools, materials and testing for specific applications.	PO1, PO2	PSO1,PSO2
01	Fabricating a product with awareness of the tools, materials and testing for specific approximately	PO3, PO4, PO5	PSO1,PSO2
:02	Analyse the problems and solve both analytically and experimentally	PO5, PO9, PO11, PO12	PSO1,PSO2
O3	Effective utilization of computer aided software (both 2D and 3D) for precision work.	131,131,131,	-,1





Course Name: Automobile Engineering

Course Year/Semester: 2/3

Course Code:

ME328

6

A.Y.: 2021-22

CO. No.	CO's	PO's	PSO's
COI	Undertanding the function of each automobile component	PO1, PO12	PSO1
CO2	Ability to understand the overall vehicle performance.	PO1, PO12	PSO1,PSO2
CO3	Students will understand the application of various conventional and alternative energy sources	PO6, PO7, PO12	PSO1,PSO2

Programme Name: UG

Course Name: Composite Materials

Course Year/Semester: 3/6

Course Code:

ME330

A.Y.: 2021-22

CO. No.	CO's	PO's	PSO's
CO1	Overview of the mechanical behaviour of composite materials	PO1, PO12	PSO1
CO2	Gaining knowledge about application of composite materials	PO1, PO12	PSO1
CO3	Understanding of Failure analysis of laminated plates	PO3, PO6, PO12	PSO1

Programme Name: UG

Course Name: Internal Combustion Engines

Course Code:

ME332

Course Year/Semester: 3/6

A.Y.: 2021-22

CO. No.	CO's	PO's	PSO's
COI	Understanding of basics of IC engines	PO1, PO12	PSO1
CO2	Understanding of different parameters influence the operational characteristics of IC Engines	PO1, PO12	PSO1
	Understanding of Measurement and Testing procesures for IC Engine	PO2, PO6, PO12	PSO1

Programme Name: UG

Course Name: Energy Conservation and Management

Course Code:

ME334

Course Year/Semester: 3/6

A.Y.: 2021-22

CO. No.	CO's	PO's	PSO's
CO1	Performing energy auditing for the energy consumption of industries.	PO2 ,PO7	PSO1,PSO2
CO2	Quantify the energy conservation opportunities in different thermal and electrical systems	PO2, PO7, PO12	PSO1,PSO2
CO3	Understand the need for energy audit and examine the economic evaluation of energy conservation solutions	PO7, PO12	PSO1,PSO2,PSO3
CO3	adopted		

Programme Name: UG

Course Name: Process Planning and Cost Estimation

Course Code:

ME336

Course Year/Semester: 3/6

A.Y.: 2021-22

CO. No.	CO's	PO's	PSO's
CO. No.	Utilize the concepts of process planning and cost estimation for various products	PO1, PO11, PO2	PSO1,PSO3
CO2	Cost estimation of various products	PO2, PO11, PO12	PSO1,PSO2,PSO3
CO3	Calculation fo machining time	PO2,PO3, PO11, PO12	PSO1,PSO2,PSO3

Programme Name: UG

Course Name: Mechanical Vibrations

Course Year/Semester: 3/6

Course Code: A.Y.: 2021-22 ME338

CO. No.	CO's	PO's	PSO's
CO1	Understand the causes and effects of vibration in mechanical systems.	PO1, PO2	PSO1
CO2	Develop schematic models for physical systems and formulate governing equations of motion.	PO1, PO2, PO3, PO4	PSO1,PSO2
CO3	Understand the role of damping, stiffness and inertia in mechanical systems	PO1, PO2, PO4	PSO1,PSO2

Programme Name: UG

Course Name: Industrial Automation and Robotics

Course Year/Semester: 4/7

Course Code: A.Y.: 2021-22

ME421

CO. No.	CO's	PO's	PSO's
CO1	Enumerate principles, strategies and advantages of industrial automation	PO1, PO2	PSO1,PSO3
CO2	Differentiate types of robots and robot grippers.	PO1, PO3	PSO1,PSO3
CO3	Understand the basic components of robots.	PO1, PO12	PSO1,PSO3

Programme Name: UG

Course Name: Mechanical Engineering Laboratory III - Manufacturing

Course Year/Semester: 4/7

Course Code: A.Y.: 2021-22 ME423

CO. No.	CO's	PO's	PSO's
COI	perform some advanced manufacturing operations	PO1, PO2, PO12	PSO1,PSO2
	Able to evaluate the accuracy & tolerance of components produced.	PO4, PO9	PSO1,PSO2
CO3	Understanding the surface measurements and bore diameter	PO1,PO2	PSO1

Programme Name: UG Course Name: Project-III

Course Code:

ME425

Course Year/Semester: 4/7

A.Y.: 2021-22

CO. No.	CO's	PO's	PSO's
CO1	Awareness of the tools, materials and testing for specific applications.	PO1, PO2	PSO1,PSO2,PSO3
CO2	Analyse the problem and solve both analytically and experimentally	PO3, PO4, PO5	PSO1,PSO2,PSO3
CO3	Implementing knowledge of CAD/CAM and analysis software.	PO5, PO9, PO11, PO12	PSO2
CO4	Organizing Time Management of time, Material Material and Manpower Management	PO11, PO12	PSO2, PSO3



Course Name: Refrigeration and Air Conditioning

Course Year/Semester: 4/7

Course Code: A.Y.: 2021-22 ME427

CO. No.	CO's	PO's	PSO's
CO. No.	Understand the principles and applications of refrigeration systems.	PO1, PO2	PSO1
	Understand the principles and applications of refrigeration system and identify methods for performance improvement.	PO1, PO2, PO3, PO4	PSO1
CO2 CO3	Analyze air-conditioning processes using the principles of psychometric.	PO1, PO2, PO4	PSO1,PSO2

Programme Name: UG

Course Name: Gas Dynamics and Jet Propulsion

Course Year/Semester: 4/7

Course Code:

ME429

A.Y.: 2021-22

	PO's	PSO's
CO. No. CO's	PO1, PO2, PO3, PO4	PSO1
Apply gas dynamics principles to jet	PO4, PO5	PSO1,PSO2
Analyse the space propulsion systems Apply governing equations to compressible flow through constant area duct with heat transfer.	PO1, PO2, PO3, PO5, PO12	PSO1

Programme Name: UG

Course Name: Computational Fluid dynamics

Course Year/Semester: 4/7

Course Code:

ME431

A.Y.: 2021-22

co v	CO's	PO's	PSO's
CO. No. CO1	Develop mathematical models for flow phenomena.	PO1, PO2	PSO1
CO2	Analyze mathematical and computational methods for fluid flow and heat transfer simulations.	PO1, PO2, PO3, PO4	PSO1,PSO2
CO3	Solve computational problems related to fluid flows and heat transfer	PO1, PO2, PO4	PSO1,PSO2

Programme Name: UG

Course Name: Advanced Manufacturing Processes Course Year/Semester: 4/7

Course Code:

ME433

A.Y.: 2021-22

	COL	PO's	PSO's
CO. No. CO1	CO's Understand abrasive and electrical discharge machining processes	PO1, PO2	PSO1
CO2	Understand forming process for thin sections	PO1, PO2, PO3, PO4	PSO1,PSO2
703	Understand the principles and applications of friction stir welding processes	PO1, PO2, PO4	PSO1,PSO2

Programme Name: UG

Course Name: Computer Aided Design

Course Year/Semester: 4/7

Course Code: A.Y.: 2021-22

ME435

00 N	CO.	PO's	PSO's
CO. No.	Effectively use computer and CAD software for modelling mechanical components	PO1, PO2, PO5	PSO1,PSO2
CO1	Construct the drawings and give proper dimensioning	PO1, PO2, PO3, PO4, PO5	PSO2
202	Understand the CAD standards	PO1, PO2, PO4, PO5, PO12	PSO1,PSO2

Programme Name: UG

Course Name: Microprocessors in Automation

Course Year/Semester: 4/7

Course Code:

ME437

A.Y.: 2021-22

CO N. COL	PO's	PSO's	
CO. No.	Use of microprocessors for automation.	PO1, PO2, PO5	PSO1,PSO2,PSO3
201	Understand the analog to Digital Coverter	PO1, PO2, PO3, PO5	PSO1
CO2 CO3	Basic understanding of signals	PO1, PO3, PO12	PSO1

Programme Name: UG Course Name: Project IV Course Year/Semester: 4/8

Course Code: A.Y.: 2021-22 ME432

COL	PO's	PSO's
	PO1, PO2, PO12	PSO1,PSO2,PSO3
	PO1, PO2, PO9	PSO1,PSO2,PSO3
	PO1, PO2, PO5, PO12	PSO2
	PO2, PO5, PO11, PO12	PSO2,PSO3
	Awareness of the tools, materials and testing for specific applications. Analyse the problem and solve both analytically and experimentally Implementing knowledge of CAD/CAM and analysis software. Organizing Time Management of time, Material and Manpower Management.	Awareness of the tools, materials and testing for specific applications. Analyse the problem and solve both analytically and experimentally Implementing knowledge of CAD/CAM and analysis software. PO1, PO2, PO1 PO1, PO2, PO9 PO1, PO2, PO5, PO12

Programme Name: UG

Course Name: Non Destructive Evaluation and Testing

Course Code:

ME420

Course Year/Semester: 4/8

A.Y.: 2021-22

CO. No.	CO's	PO's	PSO's
CO1	List and define different defects that occur in welding shown through Non-Destructive	PO1, PO2, PO5	PSO1
	Examination/Destructive Testing Identify the types of equipment used for each Non-Destructive and Destructive Examination.	PO1, PO2, PO3, PO5	PSO1
CO2	Understanding specific Code, Standard, or Specification related to each testing method.	PO1, PO3, PO5, PO12	PSO1,PSO3

Programme Name: UG

Course Name: Condition Monitoring of Rotating Machines

Course Code: A.Y.: 2021-22 ME422

Course Year/Semester: 4/8

	00	PO's	PSO's
CO. No.	CO's	PO1, PO2	PSO1
	Dynamic masses and their application.	PO1, PO2, PO3, PO4	PSO1
02	Understand Different signal processing methods	PO1, PO2, PO3, PO4	PSO1
O3	Monitoring condition of mechanical components	1 2 1, 2 2 1, 2 2 1, 2	



Course Name: Mechatronic Systems

Course Year/Semester: 4/8

Course Code:

ME424

A.Y.: 2021-22

		PO's	PSO's
CO. No.	CO's	PO1, PO2	PSO1
CO1	Overview of mechatronics applications	PO1, PO2, PO3, PO5	PSO1
CO2	Use of micro-sensors and microprocessors.	PO1, PO2, PO4	PSO1
CO3	Capable to develop simple control systems and study the system response.	101,102,101	

Programme Name: UG

Course Name: Finite Element Analysis

Course Year/Semester: 4/8

Course Code:

ME426

A.Y.: 2021-22

		PO's	PSO's
CO. No.	CO's	PO1, PO2	PSO1
	formulation of Finite element methods	PO1, PO2, PO3, PO4	PSO1,PSO2
CO2	Application to simple structural and thermal problems	PO1, PO2, PO4	PSO1
CO2	Understand global local and natural coordinates	101,102,10	

Programme Name: UG

Course Name: Power Plant Engineering

Course Year/Semester: 4/8

Course Code:

ME428

A.Y.: 2021-22

		PO's	PSO's
CO. No.	CO's	PO1, PO2	PSO1
	Understand the principles of operation for different power plants	PO1, PO2, PO3, PO11	PSO1
002	Understanding the Economics of thermal power plants	PO1, PO2, PO4	PSO1,PSO2
202	Determine performance of power plants based on load variations.	101,102,101	

Programme Name: UG

Course Name: Principles of Management

Course Year/Semester: 4/8

Course Code:

ME430

A.Y.: 2021-22

		PO's	PSO's
CO. No.	CO's	PO4, PO10	PSO3
CO1	Understanding of management functions in an organization	PO09, PO10, PO11	PSO3
CO2	Understanding Organization structure and planning	PO10, PO11, PO12	PSO3
CO2	Problems related to budgets and management	1010,1011,1	

Programme Name: UG

Course Name: Total Quality Mangement

Course Year/Semester: 3/5

Course Code:

ME371

A.Y.: 2021-22

		PO's	PSO's
CO. No.	CO's	PO4, PO05, PO10	PSO2,PSO3
CO1	Able to use the tools and techniques of TQM in manufacturing and service sectors.		
	Identify the key aspects of the quality improvement cycle and to select and use appropriate	PO02, PO10, PO11	PSO2,PSO3
CO2	tools and techniques for controlling, improving and measuring quality.		
	Critically analyse the strategic issues in quality management, including current issues and	PO10, PO11, PO12	PSO3
CO3	developments, and to devise and evaluate quality implementation plans		

Programme Name: UG

Course Name: Environmental Pollution and Abatement

Course Year/Semester: 3/6

Course Code:

ME372

A.Y.: 2021-22

		PO's	PSO's
CO. No.	CO's	PO3, PO6, PO7	PSO2,PSO3
CO1	Quantify and analyze the pollution load.	PO7, PO9	PSO2,PSO3
CO2	Analyze/design of suitable treatment for wastewater	PO5, PO7, PO12	PSO2,PSO3
202	Model the atmospheric dispersion of air pollutants	105,107,1012	

Programme Name: UG

Course Name: Industrial Engineering Management

Course Year/Semester: 3/5

Course Code: A.Y.: 2021-22 ME373

CO. No. PO1, PO2 PSO1,PSO3 Student shall be able to describe basic concepts and theories within the area of industrial management CO1 PO2, PO4, PO5 PSO3 Student shall be able to present organization analysis. PSO2,PSO3 CO₂ PO5, PO11, PO12

Programme Name: UG

Course Name: Management Information System

Student shall also be able to use simple project planning technique

Course Code: A.Y.: 2021-22 **ME374**

Course Year/Semester: 3/6

		PO's	PSO's
CO. No.	CO's	PO1, PO3	PSO2,PSO3
CO1	Relate the basic concepts and technologies used in the field of management information systems.	PO3	PSO2,PSO3
CO2	Compare the processes of developing and implementing information systems.	PO7, PO8, PO10, PO12	PSO2,PSO3
CO3	Outline the role of the ethical, social, and security issues of information systems.	1	

Programme Name: UG

Course Name: Material Management

Course Code: A.Y.: 2021-22 ME375

Course Year/Semester: 3/5

~~	CO's	PO's
CO. No.	COS	
CO1	Develop an ability to perform the role of a materials manager in an organization.	
CO2	Manage the activities of materials manager like purchasing, inventory analysis, storage etc.in a scientific	
	manner.	PO
CO3	Shall be able to improve due date performance through use of MRP techniques within capacity constraints	

PSO1,PSO3 PO2, PO1 PSO2,PSO3 PO5, PO11 PSO2,PSO3 PO3, PO11, PO12



Course Name: Maintenance and Reliability Engineering

Course Year/Semester: 3/6

Course Code:

ME376

A.Y.: 2021-22

	$\mathbf{p}_{\mathbf{q}}$)'s	PSO's
CO. No.	Understand the maintenance function and its objectives and know how to prepare report about the	PO1, PO3	PSO3
CO1	- interpreted function		PSO3
CO2	Gain the necessary knowledge about the types of maintenance and know how to use them when design		
703	maintenance systems. Gain the necessary knowledge about failure distributions and apply failure analysis techniques	PO5, PO12	PSO3

Programme Name: UG

Course Name: Operations Management

Course Year/Semester: 4/7

Course Code:

ME471

A.Y.: 2021-22

0 1 1 1 1 1 1 1 1		PO's	PSO's
CO. No.	CO's	PO1, PO3	PSO3
CO1	Apply knowledge of fundamental concepts of operations management.	PO4, PO5	PSO3
CO2	Apply knowledge of approaches to operational performance improvement.	PO5, PO12	PSO2,PSO3
CO3	Apply decision-support tools to business decision making.		

Programme Name: UG

Course Name: Industrial Safety and Environment

Course Year/Semester: 4/8

Course Code: A.Y.: 2021-22 ME472

		PO's	PSO's
CO. No.	CO's	PO2, PO7	PSO3
CO1	Enumerate the importance of industrial safety.	PO7, PO8	PSO3
CO2	Indicate unsafe acts and conditions causing accidents.	PO5, PO4, PO12	PSO3
202	Outline accident investigation and analysis		

Programme Name: UG

Course Name: Production Planning and Control

Course Year/Semester: 4/7

Course Code:

ME473

A.Y.: 2021-22

	P	O's	PSO's
CO. No.	CO's	PO2, PO4, PO7	PSO1,PSO3
CO1	Understand the role Production Planning and control activities in Manufacturing and Services.	POE POR POR	PSO2.PSO3
CO2	Understand and perform various Inventory Management techniques and apply in real manufacturing	PO7, PO8, PO9	F302,F303
	scenario.	PO11, PO10, PO12	PSO2,PSO3
CO3	Demonstrate various Scheduling procedures		

Programme Name: UG

Course Name: Group Technology and Flexible Manufacturing systems

Course Year/Semester: 4/8

Course Code: A.Y.: 2021-22 ME474

PO's CO's CO. No. PSO₂ PO2, PO3 Apply the concepts of PPC and GT to the development of FMS CO1 PO4, PO5 PSO2,PSO3 Discuss the planning and scheduling methods used in manufacturing systems. CO2 PSO2,PSO3 PO5, PO9 Identify various workstations, system support equipment. CO3 PO5, PO12 PSO₃ Identify hardware and software components of FMS. CO₄

Programme Name: UG

Course Name: Smart Materials and Devices

Course Year/Semester: 4/7

Course Code:

ME475

A.Y.: 2021-22

8		PO's	PSO's
CO. No.	CO's	PO2, PO4	PSO1,PSO2
CO1	Understand the behavior and applicability of various smart materials.	PO4, PO11	PSO1,PSO2
CO2	Design and conduct experiments, analyze and interpret data related to smart materials and devices.	PO3, PO11, PO12	PSO1,PSO2
CO3	Design a system, component, or process based on smart materials to meet desired needs.		-

Programme Name: UG

Course Name: Work Study and Ergonomics Engineering

Course Year/Semester: 4/8

Course Code: A.Y.: 2021-22 ME476

no priling		PO's	PSO's
CO. No.	CO's	PO2, PO3, PO4	PSO2,PSO3
	develop a case for productivity improvement in any manufacturing or service industry scenario. independently conduct a method study in any organization with the objective of improving a process,	PO5, PO11	PSO2,PSO3
CO2	waterial mayament system or design of a work place	PO3, PO5, PO11, PO12	PSO2,PSO3
CO3	develop time standards for operations, identify production bottlenecks and improvise operations		

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CO-PO Matrix

NAME: MECHANICAL ENGINEERING

Programme Name: UG

Course Name:

Workshop/Manufacturing Practices

Course Code:

ME105

Course Name:	Workshop/Manufacturing Practices								A.Y.: 2	021-22			
Course Year/Semester:		Programme Outcomes (PO's)											
CO. No.	CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	Understanding different manufacturing techniques and their relative advantages/ disadvantages with respect to different applications with selection of a suitable technique for meeting a specific fabrication need					3				1			2
CO2	Acquire a minimum practical skill with respect to the different manufacturing methods and develop the confidence to design & fabricate small components for their project work.					2				1			3
CO3	Introduction to different manufacturing methods in different fields of engineering	3										-	2
CO4	Practical exposure to different fabrication techniques and Creation of simple components using different materials.					1				1.67			2.25
	Average	3						1,		1.07			

Programme Name: UG

Course Name:

Engineering Graphics & Design

Course Code:

ME101

A.Y.: 2021-22

Course Year/Semester: 1/2 Programm								nme Outcomes (PO's)							
CO. No.	CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	POII	PO12		
CO1	Introduction to engineering design and its place in society and engineering communication	3				1		-	-		3				
CO2	Exposure to the visual aspects and engineering graphics of engineering design standard	$\frac{2}{1}$	-		_	1 3					2				
CO3	Exposure to solid modelling	-	-			3				1			2		
CO4	Exposure to computer-aided geometric design and creating working drawings	2	-	-		2.33	-			1	2.5		2		
	Average	1 4				1									

Programme Name: UG

Course Name:

Engineering Mechanics

Course Code:

ME221

A.Y.: 2021-22

	Programme Outcomes (PO's)												
CO's	POI	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	
Determine resultants in plane force systems	2	3								-	_		
Identify and quantify all forces associated with a static framework	1	2		2									
	2	2	1.65 (888)	3			100			61			
	1.67	2 33	-	2.5			100						
	Determine resultants in plane force systems Identify and quantify all forces associated with a static framework	Determine resultants in plane force systems Identify and quantify all forces associated with a static framework Draw Shear Force Diagram and Bending Moment Diagram in various kinds of beams subjected to different kinds of loads	Determine resultants in plane force systems Identify and quantify all forces associated with a static framework Draw Shear Force Diagram and Bending Moment Diagram in various kinds of beams subjected to different kinds of loads 1 2 3 2 2 2 1 67 2 33	Determine resultants in plane force systems Identify and quantify all forces associated with a static framework Draw Shear Force Diagram and Bending Moment Diagram in various kinds of beams subjected to different kinds of loads 1 2 2 2 1 67 2 33	Determine resultants in plane force systems Identify and quantify all forces associated with a static framework Draw Shear Force Diagram and Bending Moment Diagram in various kinds of beams subjected to different kinds of loads POI POZ PO3 PO4 2 3 2 3 2 2 2 3 2 2 3 2 2 3 3 2 2 3 3 3 2 3	Determine resultants in plane force systems Identify and quantify all forces associated with a static framework Draw Shear Force Diagram and Bending Moment Diagram in various kinds of beams subjected to different kinds of loads POS	CO's POI PO2 PO3 PO4 PO5 PO6 Determine resultants in plane force systems Identify and quantify all forces associated with a static framework Draw Shear Force Diagram and Bending Moment Diagram in various kinds of beams subjected to different kinds of loads 1 2 2 3 3 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3	Determine resultants in plane force systems Identify and quantify all forces associated with a static framework Draw Shear Force Diagram and Bending Moment Diagram in various kinds of beams subjected to different kinds of loads 167 233 25 25	Determine resultants in plane force systems Identify and quantify all forces associated with a static framework Draw Shear Force Diagram and Bending Moment Diagram in various kinds of beams subjected to different kinds of loads Draw Shear Force Diagram and Bending Moment Diagram in various kinds of beams subjected to different kinds of loads	Determine resultants in plane force systems Identify and quantify all forces associated with a static framework Draw Shear Force Diagram and Bending Moment Diagram in various kinds of beams subjected to different kinds of loads Draw Shear Force Diagram and Bending Moment Diagram in various kinds of beams subjected to different kinds of loads	Determine resultants in plane force systems Identify and quantify all forces associated with a static framework Draw Shear Force Diagram and Bending Moment Diagram in various kinds of beams subjected to different kinds of loads POI PO2 PO3 PO4 PO5 PO6 PO7 PO8 PO9 PO10 2 3 3 2 2 3 3 2 2 3 3 3 3 3 3 3 3 3 3	Determine resultants in plane force systems Identify and quantify all forces associated with a static framework Draw Shear Force Diagram and Bending Moment Diagram in various kinds of beams subjected to different kinds of loads POI PO2 PO3 PO4 PO5 PO6 PO7 PO8 PO9 PO10 PO11 To a subjected to different kinds of loads POI PO2 PO3 PO4 PO5 PO6 PO7 PO8 PO9 PO10 PO11 To a subjected to different kinds of loads	

Programme Name: UG

Course Name: Thermodynamics

Course Code:

ME223

A.Y.: 2021-22

Course Year/Semester		Programme Outcomes (PO's) PO1 PO2 PO3 PO4 PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO1													
CO, No.	CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		
001	Students can evaluate changes in thermodynamic properties of substances		2								-				
COI	The students will be able to evaluate the performance of energy conversion devices		2	3	3										
CO2	The students will be able to differentiate between high grade and low-grade energies	3	2		3										
CO3	The students will be able to differentiate between mgn grade and low grade one get	1.67	2	3	3										

Programme Name: UG

Machine Drawing

Course Code:

ME225

Course Name:	Machine Drawing							wasia M	A.Y.: 2	2021-22			
Course Year/Semester: 2/3		Programme Outcomes (PO's)											
CO. No.	CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	Draw the machine elements including keys, couplings, cotters, riveted, bolted, and welded joints	3							Page 1		3		2
CO2	Understand the representation of materials used in machine drawing.	2		3							2		
CO3	Construct an assembly drawing using part drawings of machine components Average	2.33		3							2.5		2

Programme Name: UG

Course Name:

Applied Thermodynamics

Course Code: A.Y.: 2021-22

ME220

Course Year/Semester: 2/		Programme Outcomes (PO's) PO1 PO2 PO3 PO4 PO5 PO6 PO7 PO8 PO9 PO10 PO1												
CO. No.	CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	POL	
201	Understanding of various practical power cycles and heat pump cycles.	2	3									-		
CO1	Analyze energy conversion in various thermal devices such as combustors, air coolers, nozzles,	2	2	2	3									
CO2	diffusers, steam turbines and reciprocating compressors		-		-	_		+						
CO3	Understand phenomena occurring in high speed compressible flows	3	2 22	-	2.5		-	+						
	Average	2.33	2.33		1 2.3									

Programme Name: UG

Fluid Mechanics and Fluid machines

Course Code:

ME222

Course Name:

A.Y.: 2021-22

Course Year/Semester:					Pr	ogram	me O	utcom	es (PC)'s)			
CO. No.	CO's	POI	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	POII	PO12
	Let 1 1 1 1 inval - Sequestrations		2		3								
CO1	Mathematically analyze simple flow situations		2	3	3								
CO2	Formulate and solve one dimensional compressible fluid flow problems		1		1 3								
CO3	Able to evaluate the performance of pumps and turbines	-	-	2	2			-					
	Average	1	2	3	1 3								

Programme Name: UG

Course Name:

Strength of Materials

Course Code:

ME224

Course Name:	Strength of Materials								A.Y.: 2	021-22	<u>:</u>		
Course Year/Semester:	2/4				Pr	ogran	ime O	utcom	es (PC)'s)			
CO. No.	CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	POII	PO12
COI	recognise various types loads applied on machine components of simple geometry	1	2								-		
CO2	Understand the nature of internal stresses that will develop within the components	-	1 2	- 2						11/1	18		
CO3	Able to evaluate the strains and deformation that will result due to the elastic stresses developed within the materials for simple types of loading.		1 2		3					VA.			-
	Average \	11	2	2	3		L					-	1



Course Name: Materials Engineering

Course Year/Semester: 2/4

Course Code: ME226 A.Y.: 2021-22

CO. No.	CO's				Pr	ogram	ıme O	utcom	es (PC)'s)			
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	Identify crystal structures for various materials and understand the defects in such structures	3	3,10										
CO2	Understand how to tailor material properties of ferrous and non-ferrous alloys	2		-									2
CO3	Quantify mechanical integrity and failure in materials	2						3					2
	Average	2.33						3		11			2

Programme Name: UG

Course Name: Instrumentation and control Course Code: A.Y.: 2021-22

ME228

Course rear/semester	: 2/4						Stelland		73. 1 2	.021-22			
CO. No.	CO's	DO1	DO1	PO3	DO4	DO:	BO)	3	₽∧ø	PΩG	POJA	POLL	POLI
CONTRACTOR OF THE PARTY OF THE	THE REPORT OF THE PROPERTY OF THE PROPERTY AND ADDRESS OF THE PROPERTY OF THE	RUI	FUZ	ros	FU4	rus	FUU	FU/	FUG	FU2	TOTO	IUII	LUIV
COI	Understand the measurement of various quantities using instruments, Understand accuracy &												
COI	range	2			G								
CO2	Techniques for controlling devices automatically	2											2
CO3	Calibrate gauges and measuring instruments	2						3					2
	Average	2						3					2

Programme Name: UG

Course Name: Universal Human Values: Understanding harmony Course Code:

SSC007

Course Year/Semester:	2/4								A.Y.: 2			bbevo	<i>'</i>
CO. No.	CO's				Pr	ogram	me O	utcom	es (PC)'s)			
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	To become more aware of themselves, and their surroundings (family, society, nature)				4	- 20		2	3				
CO2	CO2: More responsible in life, and in handling problems with sustainable solutions.				70.0					2	2		1
CO3 .	keeping human relationships and human nature in mind.		177		- 12	-27							2
	Average							2	3	2	2		1.5

Programme Name: UG

Course Name: **Environmental Sciences** Course Code:

EVS002

Course Year/Semester: 2/4 A.Y.: 2021-22 Programme Outcomes (PO's) CO. No. CO's PO1 PO2 PO3 PO4 PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 CO1 Measure environmental variables and interpret results. Evaluate local, regional, and global environmental topics related to resource use and CO2 management. CO3 Propose solutions to environmental problems related to resource use and management Average

Programme Name: UG

Heat Transfer Course Name:

Course Code:

ME321

Course Year/Semester:	3/5								A.Y.: 2	021-22			
CO. No.	CO's				Pr	ogram	ime O	utcom	es (PC)'s)			
		PO1	PO2	PO ₃	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
COI	Formulate and analyze a heat transfer problem involving any of the three modes of heat transfer	2	3										
CO2	Obtain exact solutions for the temperature variation using analytical methods where possible or employ approximate methods or empirical correlations to evaluate the rate of heat transfer	1	3	2	3								
CO3	Design devices such as heat exchangers and also estimate the insulation needed to reduce heat losses where necessary.	2	2		3								
	Average	1.67	2.67	2	3				10				

Programme Name: UG

Course Name: Solid Mechanics

Course Code: A.Y.: 2021-22

ME323

Course Year/Semester:	: 3/5								A.1.	4021-22			
CO, No.	CO.2				Pr	ogran	ime O	utcom	es (PC)'s)			
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
cd	Understand the deformation behaviour of solids under different conditions	2	2									200	
CO2	Types of loading and obtain mathematical solutions for plane stress and strain in simple geometries	1	3	2	2								
CO3	Analyze problems related to thick and thin cylinders	1	2		3								
	Average	1.33	2.33	2	2.5			7					

Programme Name: UG

Course Name: Maufacturing Processes

Course Code:

ME325

Course Year/Semester:	: 3/5							N. V	A.Y.:	2021-22			
CO. No.	CO's				Pr	ogran	ime O	utcom	es (PC)'s)			
C0		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	POII	PO12
CO1	Understand the different conventional methods employed for making different products	3											
CO2	Unconventional manufacturing methods employed for making different products	3											3
CO3	Analyse different processes and their applications						2	1					2
	Average	3					2	1				13	2.5

Programme Name: UG

Course Name: Kinematics and Theory of machines Course Code:

ME327

Course Year/Semester: 3/5	respectively. The first the elementary of the second and the element of the second and the second and the second and								A.Y.:	2021-22			
CO. No.	CO's					ogram							
SEE WARRIES		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	POII	PO12
CO1	Design various types of linkage mechanisms	1	2									, i	
CO2	Obtaining specific motion	2	2	3	1								
CO3	Analyse them for optimal functioning	1	2		3								
	Average	1.33	2	3	2								



Programme Name: UG Course Code: SSC006 Human Values and professional ethics Course Name: A.Y.: 2021-22 Course Year/Semester: 3/5 Programme Outcomes (PO's) CO. No. CO's PO4 PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 PO2 PO3 PO1 Learn the moral issues and problems in engineering; find the solution to those problems. Learn the need for professional ethics, codes of ethics and roles, concept of safety, risk assessment Gain exposure to Environment Ethics & computer ethics, know their responsibilities and rights CO₃ Average Programme Name: UG Course Code: LAW005 Constitution of India Course Name: A.Y.: 2021-22 Course Year/Semester: 3/5 Programme Outcomes (PO's) CO's CO. No. PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 PO2 PO3 PO4 PO1 ##### To understand and explain concepts in constitutional law CO1 Identify and discuss in depth the sources of constitution. CO₂ To understand how the governance system is working in the country. To understand the relations between Centre and State including legislative, executive and financial CO4 Understand the distinction between various constitutional organs and their relations with each other and concept of separation of power CO5 1.67 Average Programme Name: UG Course Code: ME329 Mechanical Engineering Laboratory -I (Thermal) Course Name: Course Year/Semester: 3/5 Programme Outcomes (PO's) CO's CO. No. PO10 PO11 PO12 PO5 PO6 PO7 PO8 PO1 PO2 PO3 PO4 PO9 Measure various properties of fluids COL Characterize the performance of fluid/thermal machinery CO₂ Measurement of Thermal conductivity of various elements CO₃ Programme Name: UG Course Code: ME331 Course Name: Project-I 4.Y.: 2021-22 Year/Semester: 3/5 Programme Outcomes (PO's) CO's CO. No. PO10 PO11 PO12 PO5 PO6 PO7 PO8 POI PO2 PO3 PO4 PO9 Awareness of the tools, materials and testing for specific applications. COL Analyse the problem and solve both experimentally CO₂ Effective utilization of computer aided software for precision work. CO₃ 3 2 Average Programme Name: UG ME320 Course Code: Course Name: Manufacturing Technology Course Year/Semester: 3/6 Programme Outcomes (PO's) CO's CO. No. PO2 PO3 PO4 PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 Tooling needed for manufacturing, the dimensional accuracy and tolerances of products, Assembly of different components Application of optimization methods in manufacturing CO₃ Average Programme Name: UG ME322 Course Code: Course Name: **Design of Machine Elements** A.Y.: 2021-22 Course Year/Semester: 3/6 Programme Outcomes (PO's) CO's CO. No. PO4 \PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 PO1 PO2 PO₃ Students will get an overview of the Design methodologies employed for the design of various COL machine components CO₂ Providing Failure Analysis of Design components. CO3 Analysis of transmission and fasteners Average Programme Name: UG SSC008 Course Code: Gender, Culture, and Developement Course Name: A.Y.: 2021-22 Course Year/Semester: 3/6 Programme Outcomes (PO's) CO's CO. No. PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 PO2 PO₃ PO₄ PO1 Mapping and analyzing perspectives, issues and debates in the field of COL development from gender perspectives, Examining through a gender lens, the inter-linkages between cultural practices, 3 CO₂ social processes and development approaches, Understanding feminisms in global and local contexts and mapping feminist 3 CO₃ interventions in knowledge, Average Programme Name: UG ME324 Course Code: Mechanical Engineering Laboratory II - Design Course Name: A.Y.: 2021-22 Course Year/Semester: 3/6 Programme Outcomes (PO's) CO's CO. No. PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 PO2 PO₃ PO4 PO1 Understand the measurement of mechanical properties of materials COI Characterize the dynamic behaviour of mechanical systems CO2 Performing analysis of different components Average Programme Name: UG Course Code: ME326 Project-II Course Name: A.Y.: 2021-22 Course Year/Semester: 3/6 Programme Outcomes (PO's) CO's CO. No. PO5 PO7 PO8 PO9 PO10 PO11 PO12 PO6 PO1 PO2 PO3 PO4 Fabricating a product with awareness of the tools, materials and testing for specific applications.

A Sur

CO₂

CO₃

Analyse the problems and solve both analytically and experimentally

Average

Effective utilization of computer aided software (both 2D and 3D) for precision work.

1219

Programme Name: UG ME328 Course Code: **Automobile Engineering** Course Name: A.Y.: 2021-22 Course Year/Semester: 3/6 Programme Outcomes (PO's) CO's PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 CO. No. PO4 PO1 PO2 PO3 Undertanding the function of each automobile component CO1 Ability to understand the overall vehicle performance. CO2 Students will understand the application of various conventional and alternative energy sources CO3 3 Average Programme Name: UG ME330 Course Code: Composite Materials Course Name: A.Y.: 2021-22 Course Year/Semester: 3/6 Programme Outcomes (PO's) PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 CO. No. PO4 PO2 PO₃ POI Overview of the mechanical behaviour of composite materials CO₁ Gaining knowledge about application of composite materials CO₂ Understanding of Failure analysis of laminated plates 1.67 CO3 Average ME332 Course Code: Programme Name: UG Internal Combustion Engines Course Name: A.Y.: 2021-22 Course Year/Semester: 3/6 Programme Outcomes (PO's) CO's PO8 PO9 PO10 PO11 PO12 CO. No. PO5 PO6 PO7 PO2 PO3 PO1 Understanding of basics of IC engines CO1 Understanding of different parameters influence the operational characteristics of IC Engines Understanding of Measurement and Testing procesures for IC Engine CO3 Average Programme Name: UG ME334 Course Code: **Energy Conservation and Management** Course Name: A V . 2021-22 Course Year/Semester: 3/6 Programme Outcomes (PO's) CO's PO10 PO11 PO12 PO5 PO6 PO7 PO8 PO9 CO. No PO1 PO2 PO₃ Performing energy auditing for the energy consumption of industries COI Quantify the energy conservation opportunities in different thermal and electrical systems Understand the need for energy audit and examine the economic evaluation of energy CO₃ conservation solutions adopted Average ME336 Programme Name: UG Course Code: Process Planning and Cost Estimation Course Name: A.Y.: 2021-22 Course Year/Semester: 3/6 Programme Outcomes (PO's) CO's PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 CO. No. PO4 PO1 PO2 PO3 Utilize the concepts of process planning and cost estimation for various products Cost estimation of various products CO₂ Calculation fo machining time CO₃ 1.67 Average Programme Name: UG Course Code: ME338 Mechanical Vibrations A.Y.: 2021-22 Course Name: Course Year/Semester: 3/6 Programme Outcomes (PO's) CO's PO4 PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 CO. No. PO2 PO3 PO1 Understand the causes and effects of vibration in mechanical systems. COI Develop schematic models for physical systems and formulate governing equations of motion CO₂ Understand the role of damping, stiffness and inertia in mechanical systems CO3 Average ME421 nme Name: UG Course Code: Industrial Automation and Robotics A.Y.: 2021-22 Course Name: Course Year/Semester: 4/7 Programme Outcomes (PO's) PO10 PO11 PO12 CO. No. PO4 PO5 PO6 PO7 PO8 PO9 PO1 PO2 PO3 Enumerate principles, strategies and advantages of industrial automation COI Differentiate types of robots and robot grippers. CO₂ Understand the basic components of robots. CO₃ 3 Average ME423 Programme Name: UG Course Code:

	Mechanical Engineering Laboratory III - Manufacturing								A.Y.: 2	021-22			
Course Year/Semester: 4/					Pr	ogram	me O	utcom	es (PC)'s)			
CO. No.	CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Control of the last of the las	1 1 Continuo aparations	2	2				AT .						
CO1	perform some advanced manufacturing operations				2					2			
CO2	Able to evaluate the accuracy & tolerance of components produced.	-	2						-				
CO3	Understanding the surface measurements and bore diameter	3 5	2		2		-			2			3
1000	Average	2.5	1 2		1 2								

Programme Name: UG Course Name:	Project-III								Course A.Y.: 2	Code:		ME42	5
Course Year/Semester:	4/7				Pr	ogram	ıme O	utcom	es (PC)'s)			
CO. No.	CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	Awareness of the tools, materials and testing for specific applications.	3	2	2	2	3							
CO2	Analyse the problem and solve both analytically and experimentally	-	-		-	3				2		2	3
CO3	Implementing knowledge of CAD/CAM and analysis software.	_										2	1
CO4	Organizing Time Management of time, Material Material and Manpower Management.			2	2	3				2		2	2



Average

Course Name:

Refrigeration and Air Conditioning

Course Code: A.Y.: 2021-22 ME427

CO, No.	CO's				Pr	ogram	me O	utcom	es (PC)'s)			
CO. No.		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	POII	PO12
CO1	Understand the principles and applications of refrigeration systems.	2	3										
CO2	Understand vapour compression refrigeration system and identify methods for performance	imj :	3 2	2	2	-							
CO3	Analyze air-conditioning processes using the principles of psychometric.		1 2	20	3								
	Average	2	2.33	2	2.5								

Programme Name: UG

Gas Dynamics and Jet Propulsion Course Name:

Course Code: ME429

A.Y.: 2021-22

CO N	CO's				Pr	ogram	ime O	utcom	es (PC)'s)			
CO. No.		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	Apply gas dynamics principles to jet and	- 1	3	2	2								
CO2	Analyse the space propulsion systems				3	2							
CO3	Apply governing equations to compressible flow through constant area duct with heat transfer.	1	2	3		2							
	Average			2.5	2.5	2							

Programme Name: UG

Course Name:

Computational Fluid dynamics

Course Code: A.Y.: 2021-22

ME431

Course Year/Semester:	e Year/Semester: 4/7								11.1	7021 21			The state of the last
CO. No.	CO's				Pr	ogram	me O	utcom	es (PC)'s)			
CO. No.		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	POH	PO12
CO1	Develop mathematical models for flow phenomena.	I	2	100		es 5							-
CO2	Analyze mathematical and computational methods for fluid flow and heat transfer simulations.		2 3	1	2	15							$\overline{}$
CO3	Solve computational problems related to fluid flows and heat transfer	-	2	11 21 11	3			1.					
	Average				2.5								

Programme Name: UG

Course Name:

Advanced Manufacturing Processes

Course Code:

ME433

A.Y.: 2021-22

Course Year/Semester:	se Year/Semester: 4/7								A.Y.: 2	2021-22	;		
C Const	CO's				Pr	ogram	me O	utcom	es (PC	D's)			
CO. No.		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	POII	PO12
CO1	Understand abrasive and electrical discharge machining processes	3	2		-								
CO2	Understand forming process for thin sections	3	2	1	1								
CO3	Understand the principles and applications of friction stir welding processes	3	1		1	1 1 1	n gyel						
	Average			1	1	8 8 91 1			L			لــنــا	

Programme Name: UG

Course Name:

Computer Aided Design

Course Code:

ME435

A.Y.: 2021-22

Course Year/Semester: 4/7 Programme Outcomes (PO's) CO's CO. No. PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 PO1 PO2 PO₃ PO4 Effectively use computer and CAD software for modelling mechanical components CO1 CO₂ Construct the drawings and give proper dimensioning Understand the CAD standards CO3 Average

Programme Name: UG

Course Name:

Microprocessors in Automation

Course Code: A.Y.: 2021-22 ME437

Course Year/Semester: 4/7 Programme Outcomes (PO's) CO's CO. No. PO7 PO4 PO5 PO6 PO8 PO9 PO10 PO11 PO12 PO1 PO2 PO3 COI Use of microprocessors for automation. Understand the analog to Digital Coverter CO2 CO3 Basic understanding of signals 2.33 Average

mme Name: UG

Course Name:

Project IV

Course Code: A.Y.: 2021-22

ME432

Course Year/Semester: 4/8 Programme Outcomes (PO's) CO's CO. No. PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 POI PO2 PO₃ PO4 CO1 CO2 Awareness of the tools, materials and testing for specific applications. Analyse the problem and solve both analytically and experimentally Implementing knowledge of CAD/CAM and analysis software. CO₃ Organizing Time Management of time, Material and Manpower Management. CO4 3 2.5 1.67 Average

Programme Name: UG

Course Name:

Non Destructive Evaluation and Testing

Course Code:

ME420

Course Year/Semester:	4/8								A.Y.: 7	021-22			
CO V	CO's				Pr	ogram	me O	utcom	es (PC)'s)			
CO. No.		POI	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
COI	List and define different defects that occur in welding shown through Non-Destructive Examination/Destructive Testing	3	2			1				Augus			
CO2	Identify the types of equipment used for each Non-Destructive and Destructive Examination.	3	2	1		1							
CO3	Understanding specific Code, Standard, or Specification related to each testing method.			1		2							2
Average	Average					1.33				40			2

Programme Name: UG

Course Name: **Condition Monitoring of Rotating Machines** Course Code:

ME422

Course Year/Semester	urse Year/Semester: 4/8								A.I.i	021-22			
and the second	CO's				Pr	ogram	ime O	utcom	es (PC)'s)			
CO. No.	co,	PO1	PO	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	Dynamic masses and their application.	3	2										
CO2	Understand Different signal processing methods	3	2	1	1								\vdash
CO3	Monitoring condition of mechanical components		Ц	2 2	3								\vdash
	Average	2.33	2	1.5	2			i como como		St. 1			



Course Code: ME424 Programme Name: UG A.Y.: 2021-22 Course Name: Mechatronic Systems Course Year/Semester: 4/8 Programme Outcomes (PO's) PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 CO's PO2 PO3 CO. No. PO1 Overview of mechatronics applications COL Use of micro-sensors and microprocessors. CO₂ Capable to develop simple control systems and study the system response CO₃ 1.67 2.67 Course Code: ME426 Programme Name: UG A.Y.: 2021-22 Finite Element Analysis Course Name: Programme Outcomes (PO's) Course Year/Semester: 4/8 PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 CO. No. PO4 PO3 POL PO2 Formulation of Finite element methods CO1 Application to simple structural and thermal problems Understand global, local, and natural coordinates CO₃ Average ME428 Course Code: Programme Name: UG A.Y.: 2021-22 **Power Plant Engineering** Course Name: Course Year/Semester: 4/8 Programme Outcomes (PO's) CO's PO10 PO11 PO4 PO5 PO6 PO7 PO8 PO9 CO. No. PO1 PO2 PO3 Understand the principles of operation for different power plants COI Understanding the Economics of thermal power plants Determine performance of power plants based on load variations CO₃ Average ME430 Course Code: Programme Name: UG Principles of Management A.Y.: 2021-22 Course Name: Course Year/Semester: 4/8 Programme Outcomes (PO's) CO's PO12 PO10 PO11 CO. No. PO5 PO6 PO7 PO8 PO9 PO2 PO3 PO4 POI Understanding of management functions in an organization COI Understanding Organization structure and planning CO2 2.67 Problems related to budgets and management CO₃ Average ME371 Course Code: Programme Name: UG A.Y.: 2021-22 **Total Quality Mangement** Course Name: Course Year/Semester: 3/5 Programme Outcomes (PO's) CO's PO10 PO11 PO12 CO. No. PO4 PO5 PO6 PO7 PO8 PO9 PO2 PO3 Able to use the tools and techniques of TQM in manufacturing and service sectors COL Identify the key aspects of the quality improvement cycle and to select and use appropriate tools and techniques for controlling, improving and measuring quality. CO₂ Critically analyse the strategic issues in quality management, including current issues and developments, and to devise and evaluate quality implementation plans 2 CO₃ Average ME372 Course Code: Programme Name: UG Environmental Pollution and Abatement Course Name: Course Year/Semester: 3/6 Programme Outcomes (PO's) CO's PO10 PO11 PO12 PO5 PO6 PO7 PO8 PO9 PO2 PO3 PO4 Quantify and analyze the pollution load. CO1 Analyze/design of suitable treatment for wastewater CO2 Model the atmospheric dispersion of air pollutants Average ME373 Course Code: Programme Name: UG A.Y.: 2021-22 **Industrial Engineering Management** Course Name: Course Year/Semester: 3/5 Programme Outcomes (PO's) CO's PO10 PO11 PO12 CO, No. PO5 PO6 PO7 PO8 PO9 PO4 PO2 PO₃ POI Describe basic concepts and theories within the area of industrial management COL Student shall be able to present organization analysis Student shall also be able to use simple project planning technique CO₃ ME374 Course Code: Programme Name: UG A.Y.: 2021-22 Management Information System Course Name: Programme Outcomes (PO's) Course Year/Semester: 3/6 CO's PO10 PO11 PO12 PO8 PO9 CO. No. PO5 PO6 PO7 PO2 PO3 PO1 Relate the basic concepts and technologies used in the field of management information COL Compare the processes of developing and implementing information systems. CO₂ Outline the role of the ethical, social, and security issues of information systems 2 3 Bhag **ME375** Course Code: Programme Name: UG A.Y.: 2021-22 Course Name: Material Management Programme Outcomes (PO's) Course Year/Semester: 3/5

CO's PO7 PO8 PO9 PO10 PO11 PO12 CO. No. PO5 PO6 PO₃ PO2 PO1 Develop an ability to perform the role of a materials manager in an organization Manage the activities of materials manager like purchasing, inventory analysis, storage etc.in COL CO2 Shall be able to improve due date performance through use of MRP techniques within capacity constraints 2.5 CO₃ Average

Programme Name: UG Course Name:	Operations Management			
Course Year/Semester: 4	V/7			Progra
CO No.		CO's	-a. pa. pa.	

					$J_{\mathbf{H}}^{\mathbf{H}}$ and	110 0		es (re				
CO. No.	POI	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Apply knowledge of fundamental concepts of operations management.	1		2			-						
CO1 Apply knowledge of fundamental concepts of spectational performance improvement. CO2 Apply knowledge of approaches to operational performance improvement.				2	5							2
CO2 Apply knowledge of approaches to operational performance CO3 Apply decision-support tools to business decision making.					2				-			2
CO3 Apply decision-support tools to dustiless decision materials. Average	1		2	2	2.5						1.0	

Name IIC		Course Code:	ME472
Programme Name: UG Course Name:	Industrial Safety and Environment	A.Y.: 2021-22	
Course Name.	ACCOUNT OF THE PERSON OF THE P	(DOLY	

Course Year/Semester: 4	8				Pro	ogram	me O	utcom	es (PO	(s)			
CO. No.	CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	POII	PO12
4.4	是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个		2				21	3					$\overline{}$
CO1	Enumerate the importance of industrial safety.						2 -	2	2				
CO2	Indicate unsafe acts and conditions causing accidents.			0.00	2	2						- 1	- 1
CO3	Outline accident investigation and analysis	-	2		2	2		2.5	2				1
COS	Average												

Programme Name: UG	Production Planning and Control	Course Code: A.Y.: 2021-22	ME473
Course Time			
Course Year/Semester: 4/	1	Programme Outcomes (PO's)	

Course Year/Semester: 4/7	CO's				Pro	ogram	me O	utcom	es (PC)'s)			
CO. No.	Line Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	POII	PO12
A CONTRACTOR OF THE PARTY OF TH	1 striction in Manufacturing and Services.		3		2	9 1		1				9 1	
01	Understand the role Production Planning and control activities in Manufacturing and Services.									•			
	Understand and perform various Inventory Management techniques and apply in real						1	2	1	4			
O2	manufacturing scenario.						- V				2	3	
CO3	Demonstrate various Scheduling procedures		3	- K	2			1.5	1	2	2	3	1
	Average	100											

Programme Name: UG	en est	Course Code: M	1E474
Course Name:	Group Technology and Flexible Manufacturing systems	A.Y.: 2021-22	513, 1

Course Name:	Group Technology and							-		NAME OF TAXABLE PARTY.	Section 18		
Course Year/Semester:					Pr	ogram	me Ot	utcom	es (PC	's)			
CO. No.	CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	POII	PO12
	STORE		2	1							-		-
CO1	Apply the concepts of PPC and GT to the development of FMS.				2	2							
CO2	Discuss the planning and scheduling methods used in manufacturing systems.					2				1	-	-	
CO3	Identify various workstations, system support equipment.	-	-			3					\vdash		
003	Identify hardware and software components of FMS.				2	2 33				1			1

Programme Name: UG Course Name:	Smart Materials and Devices						Course Code: A.Y.: 2021-22	ME475	
CO3 CO4	Identify hardware and software components of FMS. Average			2	2.33		1		1
CO2	Appy the concepts of 1 certain Discuss the planning and scheduling methods used in manufacturing systems. Identify various workstations, system support equipment.			100	2	-			1
CO1	Apply the concepts of PPC and GT to the development of FMS.	 2	1	2	2				

Course Year/Semester: 4	7				Pro	ogram	me O	utcom	es (PC)'s)			
CO. No.	CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	POL
CO1	Understand the behavior and applicability of various smart materials. Design and conduct experiments, analyze and interpret data related to smart materials and		2		1	1.00						2	
gen .			-									2	
d	Design a system, component, or process based on smart materials to meet desired needs. Average		2	3	2							2	1_1

Design a system, component, or process based on small materials. Average		2	3	2								
Work Study and Ergonomics Engineering											ME476	
				Pr	ogram	me O	utcom	es (PC)'s)			
CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
develop a case for productivity improvement in any manufacturing or service industry scenario.		2	3	1								
	Average Work Study and Ergonomics Engineering CO's	Average Work Study and Ergonomics Engineering	Average Work Study and Ergonomics Engineering CO's PO1 PO2	Average Work Study and Ergonomics Engineering CO's PO1 PO2 PO3	Average Work Study and Ergonomics Engineering CO's PO1 PO2 PO3 PO4	Average Work Study and Ergonomics Engineering Program PO1 PO2 PO3 PO4 PO5	Average Work Study and Ergonomics Engineering CO's POI PO2 PO3 PO4 PO5 PO6	Average Work Study and Ergonomics Engineering Programme Outcom PO1 PO2 PO3 PO4 PO5 PO6 PO7	Average Course	Course Code: Ay:: 2021-22	Average Course Code: A.Y.: 2021-22	Average Course Code: ME476

Course Year/Semester. 4/6	CO's				Pr	ogram	me O	utcom	SS (FC	(5)			
CO. No.	COS CONTRACTOR OF THE PROPERTY	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	develop a case for productivity improvement in any manufacturing or service industry scenario.		2	3	1								
	independently conduct a method study in any organization with the objective of improving a process, material movement system or design of a work place					2						1	
CO3	develop time standards for operations, identify production bottlenecks and improvise operations			3		1						1	1
	Average	<u></u>	2	3	1 1	1.5	l	1					

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CO-PSO Matrix NAME: MECHANICAL ENGINEERING

Programme Name: UG

Workshop/Manufacturing Practices Course Name:

Course Code: ME105 A.Y.: 2021-22

Course Year/Semester	r: 1/1	Programme	Specific Outcor	nes (PSO's)
CO. No.	CO's	PSO1	PSO2	PSO3
001	Understanding different manufacturing techniques and their relative advantages/ disadvantages with respect to different applications with selection of a suitable technique for meeting a specific	2		
002	Acquire a minimum practical skill with respect to the different manufacturing methods and develop the confidence to design & fabricate small components for their project work.	1	2	2
		2	1	
O3	Introduction to different manufacturing methods in different fields of engineering			1
04	Practical exposure to different fabrication techniques and Creation of simple components using	1	2	
O4	different materials.	1.5	1.67	1.5
	Average			

Engineering Graphics & Design Course Name:

Course Code: ME101

A.Y.: 2021-22

Course Year/Semester	: 1/2	Programme	Specific Outcom	nes (PSO's)
CO. No.	CO's	PSO1	PSO2	PSO3
	Introduction to engineering design and its place in society and engineering communication	2		
COI	Introduction to engineering design and its place in society and engineering design standard	2	1	
CO2	Exposure to the visual aspects and engineering graphics of engineering design standard	2	1	
CO3	Exposure to solid modelling	2	2	
CO4	Exposure to computer-aided geometric design and creating working drawings	2	1.33	
	Average			

Course Name:

Engineering Mechanics

Course Code: ME221

A.Y.: 2021-22

Course Year/Semester	: 2/3		Specific Outcor	nes (PSO's)
CO. No.	CO's	PSO1	PSO2	PSO3
		3		
01	Determine resultants in plane force systems	3		3 %
002	Identify and quantify all forces associated with a static framework Draw Shear Force Diagram and Bending Moment Diagram in various kinds of beams subjected to different	2		
CO3	kinds of loads	3		
	Average	3		

Course Name:

Thermodynamics

Course Code: ME223

A.Y.: 2021-22

Course Year/Semester		Programme	Specific Outco	omes (PSO's
CO. No.	CO's	PSO1	PSO2	PSO3
Section 1	in the standard of substances	3		
CO1	Evaluate changes in thermodynamic properties of substances	3		
CO2	Evaluate the performance of energy conversion devices	2		
CO3	Differentiate between high grade and low-grade energies	2.67	may a mighton	ac. > 80 ps. 4
003	Average	2.07		11 11 11 11 11 11

Course Name:

Machine Drawing

Course Code: ME225

A.Y.: 2021-22

Course Year/Semester: 2/3 Programme Specific Outcomes (PSO's) CO's PSO2 CO. No. PSO1 Draw the machine elements including keys, couplings, cotters, riveted, bolted, and welded joints Understand the representation of materials used in machine drawing. CO2 Construct an assembly drawing using part drawings of machine components CO₃ 2.33 Average

Course Name:

Applied Thermodynamics

Course Code: ME220

A.Y.: 2021-22

ourse Year/Semester		Programme !	Specific Outco	omes (PSO
CO. No.	CO's	PSO1	PSO2	PSO3
Figure 1	1 and heat summ cycles	2	11 12	
01	Understanding of various practical power cycles and heat pump cycles. Analyze energy conversion in various thermal devices such as combustors, air coolers, nozzles, diffusers,	3	-	
02	steam turbines and reciprocating compressors	2		
03	Understand phenomena occurring in high speed compressible flows Average	2.33		

Course Name:

Fluid Mechanics and Fluid machines

Course Code: ME222

A.Y.: 2021-22

Course Year/Semeste		Programme	Specific Outco	omes (PSO's
CO. No.	CO's	PSO1	PSO2	PSO3
	1 1 0 situations	3		
CO1	Mathematically analyze simple flow situations	3		
CO2	Formulate and solve one dimensional compressible fluid flow problems	3		
CO3	Able to evaluate the performance of pumps and turbines	3		
COS	Average			

Course Name:

Strength of Materials

Course Code: ME224

A.Y.: 2021-22

Course Year/Semester		Programme '	Specific Outco	omes (PSO's)
CO. No.	CO's	PSO1	PSO2	PSO3
	the state of circular geometry	2		
CO1	Recognise various types loads applied on machine components of simple geometry	3		
CO2	Understand the nature of internal stresses that will develop within the components Evaluate the strains and deformation that will result due to the elastic stresses developed within the	2		
001		3		
CO3	materials for simple types of loading.	2.67		
	Average			





Course Name:

Materials Engineering

Course Code: ME226

A.Y.: 2021-22 Course Year/Semester: 2/4 Programme Specific Outcomes (PSO's) CO's CO. No. PSO2 PSO1 Identify crystal structures for various materials and understand the defects in such structures Understand how to tailor material properties of ferrous and non-ferrous alloys CO2 Quantify mechanical integrity and failure in materials CO3 2 33 Average

Instrumentation and control Course Name:

Course Code: ME228 A V . 2021-22

Course Year/Semester:	2/4		A. 1 2021 22	
		Programme Specific Outcom		omes (PSO's)
CO. No.	CO's	PSO1		PSO3
CO1	Understand the measurement of various quantities using instruments, Understand accuracy & range	2		7
000	Techniques for controlling devices automatically	3		
CO2	Calibrate gauges and measuring instruments	2		
COS	Calibrate gauges and measuring instruments	2.33		

Universal Human Values: Understanding harmony Course Name:

Course Code: SSC007

A.Y.: 2021-22

Course Year/Semester	: 2/4				
		Programme Specific Outcomes (PSO's)			
CO. No.	CO's	PSO1	PSO2	PSO3	
	dia			3	
COI	Creating awareness of themselves, and their surroundings (family, society, nature)			2	
CO2	More responsible in life, and in handling problems with sustainable solutions.				
	keeping human relationships and human nature in mind.			2	
CO3				2.33	

Course Name:

Environmental Sciences

Course Code: EVS002

A.Y.: 2021-22

Course Year/Semester: 2/4 Programme Specific Outcomes (PSO's) CO's CO. No. PSO3 PSO1 PSO2 CO1 CO2 CO3 Measure environmental variables and interpret results. Evaluate local, regional, and global environmental topics related to resource use and management. Propose solutions to environmental problems related to resource use and management 1.5

Course Name:

Heat Transfer

Course Code: ME321

A.Y.: 2021-22

Course Year/Seme	CO's	Programme Sp	Specific Outco	pecific Outcomes (PSO's)	
CO. No.		PSO1	PSO2 PSO	PSO3	
CO1	Formulate and analyze a heat transfer problem involving any of the three modes of heat transfer	3			
CO2	Obtain exact solutions for the temperature variation using analytical methods where possible or employ	N			
CO3	Design devices such as heat exchangers and also estimate the insulation needed to reduce heat losses where necessary.	3			
	Average	3			

Course Name:

Solid Mechanics

Course Code: ME323

Course Year/Semester	r: 3/5		A.1.; 2021-22			
	The second secon		Programme Specific Outcomes (PSC			
CO, No.		PSO1 PSO2	PSO3			
CO1	Understand the deformation behaviour of solids under different	2				
CO2	Types of loading and obtain mathematical solutions for plane stress and strain in simple geometries	2				
	Analyze problems related to thick and thin cylinders	3				
CO3	Analyze problems related to thick and thin cylinders Average	2.33				

Course Name:

Maufacturing Processes

Course Code: ME325

A.Y.: 2021-22

Course Year/Semeste	er: 3/5	and the second state of the second		
Course Team Seames	The State of State of the Control of the State of the Sta	Programme Specific Outcom		omes (PSO's)
CO. No.	CO's	PSO1	PSO2	PSO3
CO1	Understand the different conventional methods employed for making different products	2		
CO1	Unconventional manufacturing methods employed for making different products	3	11	
	Analyse different processes and their applications	2		
CO3	Analyse different processes and their approaches	2.33	1	

Course Name:

Kinematics and Theory of machines

Course Code: ME327

A.Y.: 2021-22

Course Year/Semester: 3/5		Programme S	mes (PSO's)	
CO. No.	CO's	PSO1	PSO2	PSO3
COI	Design various types of linkage mechanisms	3		
CO2	Obtaining specific motion	2		
CO3	Analyse them for optimal functioning	2.67		
	Average	2.07		

Course Name:

Human Values and professional ethics

Course Code: SSC006

A V · 2021-22

Course Year/Semester		Programme	omes (PSO's)	
CO. No.	CO's	PSO1	PSO2	PSO3
	Learn the moral issues and problems in engineering; find the solution to those problems.			3
CO1	Learn the moral issues and problems in engineering, and the solution to those problems.			3
CO2	Learn the need for professional ethics, codes of ethics and roles, concept of safety, risk assessment.			3
CO3	Gain exposure to Environment Ethics & computer ethics; know their responsibilities and rights			3
	Average			



Course Name:

Constitution of India

Course Code: LAW005 A.Y.: 2021-22

Course Year/Semester	Course Year/Semester: 3/5		A.Y.: 2021-22			
CO. No.	co's	Programme Specific Outcome		omes (PSO's)		
CO. 140.		PSO1 PSO2	PSO3			
CO1	To understand and explain concepts in constitutional law.			3		
CO2	Identify and discuss in depth the sources of constitution.			3		
CO3	To understand how the governance system is working in the country.			3		
CO4	To understand the relations between Centre and State including legislative, executive and financial			3		
CO5	Understand the distinction between various constitutional organs and their relations with each other and	concept of separatio	n of power	3		
	Average			3		

Course Name:

Mechanical Engineering Laboratory -I (Thermal)

Course Code: ME329

A.Y.: 2021-22

Course Tear/Se		Programme	Programme Specific Outcomes (PS	
CO. No.		PSO1		PSO3
CO1	Measure various properties of fluids	2	3	
CO2	Characterize the performance of fluid/thermal machinery	2	3	
CO3	Measurement of Thermal conductivity of various elements	2	3	
	Average	2	3	

Course Name:

Project-I

Course Code: ME331

Course Tear/Sei	ourse rear/semester: 5/5		1010 2021 22				
CO, No.		Programme	Specific Outco	omes (PSO's)			
CO.110			PSO2	PSO3			
CO1	Awareness of the tools, materials and testing for specific applications.	2	3				
CO2	Analyse the problem and solve both experimentally	2	3				
CO3	Effective utilization of computer aided software for precision work.	2	3	9			
	Average	2	3				

Course Name: Manufacturing Technology se Year/Semester: 3/6 Course Name:

Course Code: ME320

A.Y.: 2021-22

Course Tear/Semester				
CO. No.	CO's	Programme Specific Outcomes		omes (PSO's)
CO. No.		PSO1 PSO2	PSO3	
CO1	Tooling needed for manufacturing, the dimensional accuracy and tolerances of products,	2		2 9
CO2	Assembly of different components	2		
CO3	Application of optimization methods in manufacturing	2		
	Average	2		5 1 9

Course Name:

Design of Machine Elements

Course Code: ME322

A.Y.: 2021-22

Course rear/Semeste	ourse rear/semester: 5/0					
CO. No.	CO,²	Programme	Specific Outc	omes (PSO's)		
CO. NO.		PS01		PSO3		
CO1	Design methodologies employed for the design of various machine components.	3	1			
CO2	Providing Failure Analysis of Design components.	3	2			
CO3	Analysis of transmission and fasteners	3	1			
	Average	3	1.33			

Course Name:

Gender, Culture, and Developement

Course Code: SSC008

A.Y.: 2021-22

Course Year/Semester: 3/6			A.Y.: 2021-22			
CO. No.		Programme PSOI	Specific Outo	comes (PSO's) PSO3		
CO1	Mapping and analyzing perspectives, issues and debates in the field of development from gender perspectives,	3	1			
CO2	Examining through a gender lens, the inter-linkages between cultural practices, social processes and development approaches,	2	1			
CO3	Understanding feminisms in global and local contexts and mapping feminist interventions in knowledge,	3	1			
	Average	2.67	1			

Course Name: Mechanical Engineering Laboratory II - Design

Course Code: ME324

Course Year/Sem	ester: 3/6		71.11. 2021 22	
CO. No.	CO's	Programme	Programme Specific Outco	omes (PSO's)
CO. 140.		PSO1	PSO2	PSO3
CO1	Understand the measurement of mechanical properties of materials	2	3	
CO2	Characterize the dynamic behaviour of mechanical systems	2	3	81, 31
CO3	Performing analysis of different components	2	3	
	Average	2	3	

Course Name:

: Project-II

Course Code: ME326

Course Year/Ser	nester: 3/6		A.I ZOZI-ZZ	
CO. No.	CO's	Programme Specific Outco		omes (PSO's)
CO. 110		PSO1	PSO2	PSO3
CO1	Fabricating a product with awareness of the tools, materials and testing for specific applications.	2	3	
CO2	Analyse the problems and solve both analytically and experimentally	2	3	
CO3	Effective utilization of computer aided software (both 2D and 3D) for precision work.	2	3	
	Average	2	3	

Course Name:

Automobile Engineering

Course Code: ME328 A.Y.: 2021-22

Course Year/Seme		Programme Specific Outcor	omes (PSO's	
CO. No.	CO's	PSO1	PSO2	PSO3
201	Undertanding the function of each automobile component	1		
201	Ability to understand the overall vehicle performance.	2	1	
CO2	Ability to understand the overall vehicle performance.	3	1	
CO3	Understand the application of various conventional and alternative energy sources		1	
	Average	2	1	

Composite Materials Course Name:

Course Code: ME330 A.Y.: 2021-22

Gaining knowledge about application of composite materials	Programme	Specific Outco	omes (PSO's)	
CO. No.	CO's	PSO1	PSO2	PSO3
	le : Cd sheried behaviour of composite materials	1		
CO1	Overview of the mechanical behaviour of composite materials	2		
CO2	Gaining knowledge about application of composite materials	2		
CO3	Understanding of Failure analysis of laminated plates	1.67		
	Average	A14.		

Internal Combustion Engines Course Name:

Course Code: ME332

Course Name:			A.Y.: 2021-22			
Course Year/Semester:	CO's	Programme PSO1	Specific Outco PSO2	omes (PSO's) PSO3		
		2	1 12			
CO1	Understanding of basics of IC engines	2				
CO2	Understanding of different parameters influence the operational characteristics of IC Engines	2				
CO3	Understanding of Measurement and Testing procesures for IC Engine Average	2				

Course Name:

Energy Conservation and Management

Course Code: ME334 A.Y.: 2021-22

Course Year/Semester:	COL		Programme Specific Outcomes (P		
CO. No.	cos	PSO1	PSO2	PSO3	
	the first engineering of industries	2	1		
)1	Performing energy auditing for the energy consumption of industries.	2	1		
)2	Quantify the energy conservation opportunities in different thermal and electrical systems Understand the need for energy audit and examine the economic evaluation of energy conservation	2	1	1	
03	solutions adopted	2	1	1	
	Average		1		

Course Name:

Process Planning and Cost Estimation

Course Code: ME336

A.Y.: 2021-22

Course Year/Semester		Programme Specific Outcom		
CO, No.	CO'\$	PSO1	PSO2	PSO3
	Constitution of the Consti	2	3.10	2
201	Utilize the concepts of process planning and cost estimation for various products	2	2	2
O2	Cost estimation of various products	1	2	2
203	Calculation fo machining time	1.67	2	2
	Average	1.07		

Course Name:

Mechanical Vibrations

Course Code: ME338 A.Y.: 2021-22

- * '6	21/		74.11. 2021 22	STREET,
Course Year/Semes		Programme	Specific Outco	omes (PSO's)
CO. No.	CO's	PSO1	PSO2	PSO3
	C. The single machanical systems	2		
CO1	Understand the causes and effects of vibration in mechanical systems.	3	1	
CO2	Develop schematic models for physical systems and formulate governing equations of motion.	3	2	
CO3	Understand the role of damping, stiffness and inertia in mechanical systems	2.67	1.5	
	Average	2.07		

Course Name:

Industrial Automation and Robotics

Course Code: ME421 A.Y.: 2021-22

Course Manie.	muuse m		A. I .: 2021-22	
Course Year/Semeste		Programme	Specific Outc	omes (PSO's)
CO, No.	CO's	PSO1	PSO2	PSO3
	: 1.1 of industrial automation	3		1
CO1	Enumerate principles, strategies and advantages of industrial automation	3		1
CO2	Differentiate types of robots and robot grippers.	3		1
CO3	Understand the basic components of robots.	2		1
003	Average			

Course Name:

Mechanical Engineering Laboratory III - Manufacturing

Course Code: ME423

A.Y.: 2021-22

Course Year/Semester		Programme :	Specific Outco	omes (PSO's
CO. No.	CO's	PSO1	PSO2	PSO3
		2	1	
CO1	Perform advanced manufacturing operations	2	1	
CO2	Able to evaluate the accuracy & tolerance of components produced.	3		
CO3	Understanding the surface measurements and bore diameter	2.33	1	
	Average	2.33		

Course Name:

Project-III

Course Code: ME425 A.Y.: 2021-22

Course Year/Semester: 4	4/7	Programme	Specific Outco	omes (PSO's
CO. No.	CO's	PSO1	PSO2	PSO3
		1	1	1
01	Awareness of the tools, materials and testing for specific applications.	2	3	1
02	Analyse the problem and solve both analytically and experimentally		3	
0.2	Implementing knowledge of CAD/CAM and analysis software.		3	3
04	Organizing Time Management of time, Material Material and Manpower Management.	15	2.5	1.67
	Average	1.5		

Course Name

Refrigeration and Air Conditioning

Course Code: ME427 A.Y.: 2021-22

Course Name:	Religication and the		A.Y.: 2021-22	
Course Year/Semester:		Programme	Specific Outco	omes (PSO's)
CO. No.	CO's	PSO1	PSO2	PSO3
	- C. Giovation systems	2		
CO1	Understand the principles and applications of refrigeration systems.	2		
CO2	II Inderstand vapour compression reingeration system and identity meta-	3	1	
CO3	Analyze air-conditioning processes using the principles of psychometric. Average	2.33	1	



Course Name: Gas Dynamics and Jet Propulsion

Course Code: ME429 A.Y.: 2021-22

Course Tear/Semest	CI. 4//		120 100	
CO. No.	co's	Programme	omes (PSO's)	
£0.110.		PSO1	PSO2	PSO3
CO1	Apply gas dynamics principles to jet and	2		
CO2	Analyse the space propulsion systems	3	1	
CO3	Apply governing equations to compressible flow through constant area duct with heat transfer.	2		
	Average	2.33	ĺ	

Computational Fluid dynamics Course Name:

Course Code: ME431

A.Y.: 2021-22

Course rear/semeste	er: 4//				
CO, No.	CO's	Programme Specific Outcomes (PSO's)			
Co. No.		PSO1	PSO2	PSO3	
CO1	Develop mathematical models for flow phenomena.	2			
CO2	Analyze mathematical and computational methods for fluid flow and heat transfer simulations.	3	2		
CO3	Solve computational problems related to fluid flows and heat transfer	3	2		
	Average	2.67	2		

Course Name: **Advanced Manufacturing Processes** Course Code: ME433

Course Year/Semeste	Course Year/Semester: 4/7		A,Y.: 2021-22				
CO, No.	CO's	Programme	Specific Outco	omes (PSO's)			
CO. No.		PSO1	PSO2	PSO3			
CO1	Understand abrasive and electrical discharge machining processes	2					
CO2	Understand forming process for thin sections	2					
CO3	Understand the principles and applications of friction stir welding processes	2					
	Average	2					

Computer Aided Design Course Name:

Course Code: ME435

Course Year/Semester	r: 4/7		A.Y.: 2021-22	
CO. No.	CO's	Programme Specific Outc		omes (PSO's) PSO3
CO1	Effectively use computer and CAD software for modelling mechanical components	1	3	
CO2	Construct the drawings and give proper dimensioning		3	
CO3	Understand the CAD standards	2	3	Ų.
	Average	1.5	- 3	

Microprocessors in Automation Course Name:

Course Code: ME437 A.Y.: 2021-22

Course Year/Semeste	97: 4//		711711 2021 22	
CO. No.	CO's	Programme	omes (PSO's)	
CO. 110.		PSO1	PSO2	PSO3
CO1	Use of microprocessors for automation.	2	1	1
CO2	Understand the analog to Digital Coverter	2		
CO3	Basic understanding of signals	2		
	Average	2	1	1

Course Name:

Project IV

Course Code: ME432

Course Year/Semeste	rse Year/Semester: 4/8		A.Y.: 2021-22			
CO. No.	co's	Programme	Programme Specific Outcom			
		PSO1	PSO2 PS	PSO3		
CO1	Awareness of the tools, materials and testing for specific applications.	1	1	1		
CO2	Analyse the problem and solve both analytically and experimentally	2	3	1		
CO3	Implementing knowledge of CAD/CAM and analysis software.		3			
CO4	Organizing Time Management of time, Material and Manpower Management.		3	3		
	Average	1.5	2.5	1.67		

Course Name: Non Destructive Evaluation and Testing Course Code: ME420

A.Y.: 2021-22

Course Year/Semester	: 4/8			
CO. No.	CO's	Programme Specific Outcomes (P.		
CO. No.		PSO1	PSO2	PSO3
CO1	List and define different defects that occur in welding shown through Non-Destructive Examination/Destructive Testing	2	1 30	
CO2	Identify the types of equipment used for each Non-Destructive and Destructive Examination.	2		
CO3	Go to specific Code, Standard, or Specification related to each testing method.	2		2
Average		2		2

Condition Monitoring of Rotating Machines Course Name:

Course Code: ME422

A.Y.: 2021-22

Course Year/Semester:	4/8			
CO. No.	CO's	Programme	Specific Outco	omes (PSO's)
CO. 140.		PSOI	PSO2	PSO3
CO1	Dynamic masses and their application.	2		
CO2	Understand Different signal processing methods	2		
CO3	Monitoring condition of mechanical components	2		
	Average	2		

Mechatronic Systems Course Name:

Course Code: ME424 A.Y.: 2021-22

Course Year/Semeste	er; 4/8			
CO, No.	CO's	Programme	Specific Outco	mes (PSO's)
CO. No.		PSO1	PSO2	PSO3
COL	Overview of mechatronics applications	2		
CO1	Overview of mechatronics applications	2		
CO2	Use of micro-sensors and microprocessors.	2		
CO3	Capable to develop simple control systems and study the system response.	3		
COS	Average	2.33		
	The state of the s			



Course Name:

Finite Element Analysis

Course Code: ME426 A.Y.: 2021-22

Course Year/Semester: 4/8 Programme Specific Outcomes (PSO's) CO's CO. No. PSO3 PSO2 PSOI Formulation of Finite element methods CO1 Application to simple structural and thermal problems
Understand global, local, and natural coordinates CO2 CO3 2.67

Power Plant Engineering Course Name:

Course Code: ME428 A.Y.: 2021-22

Course Year/Semest	er: 4/8		A.Y.: 2021-22	
CO, No.	CO's	Programme S	pecific Outco	mes (PSO's)
CO. No.		PSO1	PSO2	PSO3
CO1	Understand the principles of operation for different power plants	2		
CO2	Understanding the Economics of thermal power plants	2		
CO3	Determine performance of power plants based on load variations.	3	1	
-	Average	2.33	1	

Principles of Management Course Name:

Course Code: ME430

A.Y.: 2021-22

Course Year/Seme	CO's	Programme S	Programme Specific Outcomes (PS			
CO. 110.			PSO2	PSO3		
Name and Address of the Owner, which the	Training Comment Constitutes in an organization			3		
COI	Understanding of management functions in an organization			3		
CO2	Understanding Organization structure and planning	,	 	3		
CO3	Problems related to budgets and management			2		
	Average		1.0] ,		

Total Quality Mangement Course Name:

Course Code: ME371 A.Y.: 2021-22

Course Year/Semeste	er: 3/5		A.1 2021-22	
CO. No.	co's	Programme S	specific Outcom PSO2	mes (PSO's) PSO3
CO1	Able to use the tools and techniques of TQM in manufacturing and service sectors.		2	3
CO2	Identify the key aspects of the quality improvement cycle and to select and use appropriate tools and techniques for controlling, improving and measuring quality.		2	3
	Critically analyse the strategic issues in quality management, including current issues and		l	3
CO3	developments, and to devise and evaluate quality implementation plans Average		2	3

Course Name:

Environmental Pollution and Abatement

Course Code: ME372 A.Y.: 2021-22

Course Year/Semester	: 3/6		A.1.: 2021-22	(DCOIN)	
CO. No.	CO's	Programme Specific Outcomes (PSO)			
CO. 110.			PSO2	PSO3	
			1	3	
COI	Quantify and analyze the pollution load.		2	3	
CO2	Analyze/design of suitable treatment for wastewater			3	
CO3	Model the atmospheric dispersion of air pollutants		2		
CO3	Average		1.67	3	

Course Name:

Industrial Engineering Management

Course Code: ME373

A.Y.: 2021-22

Course Year/Semeste	r: 3/5	Programme Specific Outcomes (I				
CO. No.		PSO1	PSO2	PSO3		
The state of the s	1.1 : it is the second management	1		3		
CO1	Describing basic concepts and theories within the area of industrial management			3		
CO2	Able to present organization analysis.		1	3		
CO3	Able to use simple project planning technique			3		
	Average	1				

Course Name:

Management Information System

Course Code: ME374 A.Y.: 2021-22

Course Year/Semeste	r: 3/6		A.1.: 2021-22				
CO, No.	CO's	Programme Specific Outcomes (PSO's					
CO. No.		PSO1	PSO2	PSO3			
	Relate the basic concepts and technologies used in the field of management information systems.	100	2	3			
CO1	Relate the basic concepts and technologies used in the field of management micromatics systems.		2	2			
CO2	Compare the processes of developing and implementing information systems.		1	3			
CO3	Outline the role of the ethical, social, and security issues of information systems.		1.67	2.67			
	Average		1.07				

Course Name:

Material Management

Course Code: ME375 A.Y.: 2021-22

Course Year/Semester	r: 3/5		A.Y.: 2021-22					
CO. No.	CO's		Programme Specific Outcomes (PSO's)					
CO. No.			PSO2	PSO3				
	Develop an ability to perform the role of a materials manager in an organization.	1		3				
CO1	Develop an ability to perform the role of a materials manager in an organization extends of a scientific			2				
CO2	Manage the activities of materials manager like purchasing, inventory analysis, storage etc.in a scientific		1	3				
	manner.		1	3				
CO3	Shall be able to improve due date performance through use of MRP techniques within capacity constraints	1	i	3				
	Average	1	1					

Course Name:

Maintenance and Reliability Engineering

Course Code: ME376 A.Y.: 2021-22

Course Year/Semester	. 2/6		A.Y.: 2021-22				
CO. No.	CO's		Programme Specific Outcomes (PSO				
CO. No.		PSO1	PSO2	PSO3			
CO1	Understand the maintenance function and its objectives and know how to prepare report about the			3			
COI	maintenance function.						
000	Gain the necessary knowledge about the types of maintenance and know how to use them when design			2			
CO2	maintenance systems.			2			
CO3	Gain the necessary knowledge about failure distributions and apply failure analysis techniques			2.33			
	Average	1					

Course Name:

Operations Management

A.Y.: 2021-22 Course Year/Semester: 4/7 Programme Specific Outcomes (PSO's) CO's CO. No. PSO2 PSO1 Apply knowledge of fundamental concepts of operations management. CO1 CO2 CO3 Apply knowledge of approaches to operational performance improvement Apply decision-support tools to business decision making. Average

Course Name: Industrial Safety and Environment Course Code: ME472

Course Code: ME471

A.Y.: 2021-22

Course Year/Semester:	4/8 CO's	Programme Specific Outcomes (PSO's)				
CO. No.		PSO1	PSO2	PSO3		
				3		
COI	Enumerate the importance of industrial safety.			3		
CO2	Indicate unsafe acts and conditions causing accidents.			3		
CO3	Outline accident investigation and analysis			3		
005	Average					

Course Code: ME473 **Production Planning and Control** Course Name: A.Y.: 2021-22 Course Year/Semester: 4/7 Programme Specific Outcomes (PSO's) CO's CO, No. F PSO3 PSO1 PSO2 Understand the role Production Planning and control activities in Manufacturing and Services.

Understand and perform various Inventory Management techniques and apply in real manufacturing CO1 2 3 CO2 Demonstrate various Scheduling procedures CO3 2.33 Average

Group Technology and Flexible Manufacturing systems

Course Code: ME474 A.Y.: 2021-22

Course Year/Semeste	r: 4/8	Programme Specific Outcomes (PSO's)				
CO. No.		PSO1	PSO2	PSO3		
The second second	, CTMC		3			
CO1	Apply the concepts of PPC and GT to the development of FMS.		2	2		
CO2	Discuss the planning and scheduling methods used in manufacturing systems.	7	2	2		
CO3	Identify various workstations, system support equipment.			2		
CO4	Identify hardware and software components of FMS.		2.33	2		
	Average		4,33			

Smart Materials and Devices Course Name:

Course Code: ME475

A.Y.: 2021-22

Course Year/Semester: 4/7			Programme Specific Outcomes (PSO's)			
CO. No.		PSO1	PSO2	PSO3		
Proposition of the Party of the	Understand the behavior and applicability of various smart materials.	2	2			
CO1	Design and conduct experiments, analyze and interpret data related to smart materials and devices.	1	2			
CO2			2			
CO3	Design a system, component, or process based on smart materials to meet desired needs.	1,33	2			
	Average					

Work Study and Ergonomics Engineering Course Name:

Course Code: ME476

A.Y.: 2021-22

Course Year/Semester:	CO's	Programme Specific Outcomes (PSO's)				
CO. No.		PSO1	PSO2	PSO3		
A STATE OF THE PARTY OF	Seturing or coming industry scenario		2	3		
CO1	Develop a case for productivity improvement in any manufacturing or service industry scenario. Independently conduct a method study in any organization with the objective of improving a process,		3	2		
CO2	Independently conduct a method study in any organization with the objective of the		,			
CO2	material movement system or design of a work place		2	3		
CO3	Develop time standards for operations, identify production bottlenecks and improvise operations		2.33	2.67		
	Average					

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SANT BABA BHAG SINGH UNIVERSITY

Programme Level Course - PO Matrix of All Courses DEPARTMENT NAME: MECHANICAL ENGINEERING

Programme Name: UNDERGRADUATE

Course	P01	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12
Year												
Workshop/Manufacturing Practices/ME105	3				2				1.67	2.5		2.25
Engineering Graphics & Design/ME101	2				2.33				1	2.5		
II Year			. ,	2.5								
Engineering Mechanics/ME221	1.67	2.33		2.5			-				-	
Thermodynamics/ME223	1.67	2	3	3						2.5	-	2
Machine Drawing /ME225	2.33		3							2.5	_	
Applied Thermodynamics/ME220	2.33	2.33	2	2.5		- 1						
Fluid Mechanics and Fluid machines/ME222	1	2	3	3								
Strength of Materials/ME224	1	2	2	3					<u> </u>			
Materials Engineering/ME226	2.33						3	-				2
Instrumentation and control /ME228	2						3			_		2
Universal Human Values: Understanding harmony/SSC007	3 n						2	3	2	2		1.5
Environmental Sciences/EVS002	13	2		2			3					2
III Year		H4 18										
Heat Transfer/ME321	1.67	2.67	2	3								
Solid Mechanics/ME323	1.33	2.33	2	2.5	4.55	25.6		- 1				
Maufacturing Processes/ME325	3					2	1		*		6	2.5
Kinematics and Theory of machines/ME327	1.33	2	3	2								
Human Values and professional ethics/SSC006							3	2	3	2		2
Constitution of India/LAW005						3	3	101	2	2		1.67
Mechanical Engineering Laboratory -I (Thermal)/ME329	1.5	2.5		2					3	1		2
	1	2.5	3	2	2.5		†		3		2	1
Project-I/ME331 Manufacturing Technology/ME320	1.5		-	-		1	2					2
Manufacturing Technology/ME320	1.3	2	2	. 3					 	-		_
Design of Machine Elements/ME322	1	-	-	- 3	†	2	-	3				1
Gender, Culture, and Developement/SSC008		2		2	-		-	-	3	+		2
Mechanical Engineering Laboratory II - Design/ME324	1		1	2	2.5		l		3	1	2	3
Project-II/ME326	2	1	2	2	2.5	2	3	-	-	1	+	2.67
Automobile Engineering/ME328	3			-			- 3	-	X1 - 12	+	1,5	1.67
Composite Materials/ME330	2.5		3		-	2	-	-	-		+	1.67
Internal Combustion Engines/ME332	3	3			-	2			-			1.5
Energy Conservation and Management/ME334		2			<u> </u>		3		-	┼	 ,	2
Process Planning and Cost Estimation/ME336	1	1,67	1				ļ			-	3	 '
Mechanical Vibrations/ME338	1	2	3	2.5				-	-	-	-	+
Total Quality Mangement/ME371		2		1	2					2	2	2
Environmental Pollution and Abatement/ME372			2		2	2	3		1		ļ	2
Industrial Engineering Management/ME373	1	2		3	2						2	1
Management Information System/ME374	2		1.5				2	3		2		2
Material Management/ME375	3	2	1		2						2.5	1
Maintenance and Reliability Engineering/ME376	1	1	2		2							1
IV Year								12.55				
Industrial Automation and Robotics/ME421	3	2	2									2
Mechanical Engineering Laboratory III - Manufacturing/ME423	2.5	2		2				1	2			3
Project-III/ME425			2	2	3				2		2	2
	2	2.33	2	2.5					1			
Refrigeration and Air Conditioning/ME427 Gas Dynamics and Jet Propulsion/ME429	1	2.5	2.5	2.5	2	-		-		1		
	1.33	2.33	1	2.5	+		1	1	+	1		1
Computational Fluid dynamics/ME431			1	1	-	+	+	1		1	1	1
Advanced Manufacturing Processes/ME433	3	1.67		1	3	-	+		1	+	-	2
Computer Aided Design/ME435	2	1	1.5	+-		+		 	-	+	-	2
Microprocessors in Automation/ME437	2.33	2	1.5		1.5		-	-	2	+	3	2
Project IV/ME432	2.5	1.67	-	-	2	-		+	- 4	+	+ -	2
Non Destructive Evaluation and Testing/ME420	3	2	1	-	1.33		-	-	+	+	-	+
Condition Monitoring of Rotating Machines/ME422	2.33	2	1.5	2			-	-	100.0	+	-	-
Mechatronic Systems/ME424	1.67	2.67	2	1	1		1	-	-	+	+	+
Finite Element Analysis/ME426	2	2.33	3	2				-		4	-	+
Power Plant Engineering/ME428	2.33	2	2	3	1 1 11			1		_	2	
Principles of Management/ME430				2					2	2.67	2.5	2
Operations Management/ME471	1		2	2	2.5							2
Industrial Safety and Environment/ME472		2		2	2		2.5	2				1
Production Planning and Control/ME473		3		2	. 2		1.5	1	2	2	3	1
Group Technology and Flexible Manufacturing systems/ME474				2	2.33				1			1
Smart Materials and Devices /ME475		2	3	2						9 15 1	2	1
Smart materials and Devices (mL47)		2	3	1	1.5	1					1	1



Mechanical engineering Department

Pass percentage of students

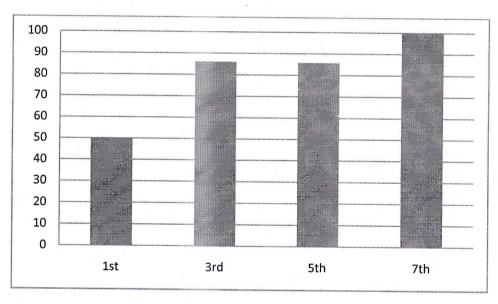
Program: UG

Course: B Tech

Session: 2020-21

(Semester 1st, 3rd, 5th, 7th)

Serial No.	Semester	No. Of students registered	No. Of students appeared	Pass percentage (%)
. 1	1 st	04	04	50
3	3 rd	22	22	86
5	5 th	21	21	85.71
7	7 th	25	25	100



Pass percentage of students of odd semester

Manpreet Singh Class Incharge of 1st semester

Class Incharge of 5th semester

Class Incharge of 3rd semester

Class Incharge of Strategy

COD(ME)



Pass percentage of students

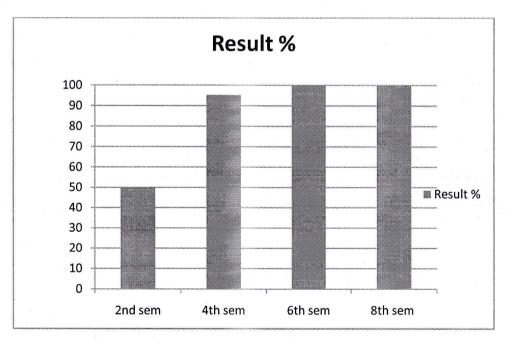
Program: UG

Course: B Tech

Session: 2020-21

(Semester 2nd, 4th, 6th, 8th)

Serial	Semester	No. Of students	No. Of students	Pass percentage
No.	9	registered	appeared	(%)
1	2 nd	04	04	50
2	4 th	21	21	95.23
3	6 th	20	20	100
4	8 th	25	25	100



Pass percentage of students of odd semester

Class Incharge of 2nd semester

Class Incharge of 4th semester

Man preet Single Class Incharge of 6th semester

Class Incharge 18th semester

COD(ME)

