



**Tulsiramji Gaikwad-Patil College of Engineering and Technology**  
Wardha Road, Nagpur-441108  
**NAAC Accredited with A+ Grade**  
**(An Autonomous Institute Affiliated to RTM Nagpur University, Nagpur)**







**Program: B.Tech. Mechanical Engineering**

## **Second Year -Fourth Semester- Course Outcomes (NEP-2020)**

### **BME32401: Mechanics of Materials**

	<b>Course Outcomes</b>
<b>BME32401.1</b>	<b>Apply</b> the concepts of simple stresses and strains, and their relationships based on the principles of linear elasticity, to analyze material behavior under different types of loading.
<b>BME32401.2</b>	<b>Apply</b> shear force and bending moment diagrams to a beam and analyze the resulting bending and shear stresses.
<b>BME32401.3</b>	<b>Analyze</b> the deflection of beams using Macaulay's method and estimate the strain energy and impact loading in mechanical elements.
<b>BME32401.4</b>	<b>Analyze</b> the torsional behavior of a circular shaft.
<b>BME32401.5</b>	<b>Analyze</b> the Strength criterion for design of Column & Struts.

			
Chairperson	Dean Academics	Vice Principal	Principal



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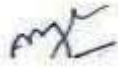

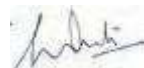


Program: B.Tech. Mechanical Engineering

## Second Year -Fourth Semester- Course Outcomes (NEP-2020)

### BME32402: Fluids Mechanics and Hydraulic Machines

	Course Outcomes
<b>BME32402.1</b>	<b>Classify</b> fluid properties, types of flow & flow measuring devices, pressure and pressure measuring devices.
<b>BME32402.2</b>	<b>Apply</b> the Principle of Bernoulli's equation to the various fluid flow measuring devices and Elaborate behavior of fluid in motion condition.
<b>BME32402.3</b>	<b>Apply</b> Darcy Weisbach and Chezy's Equation to determine different losses of fluid flow through pipes.
<b>BME32402.4</b>	<b>Analyze</b> design characteristics of hydraulic machines i.e. turbines (impulse and reaction).
<b>BME32402.5</b>	<b>Analyze</b> the principles of operation, classification, constructional components, performance characteristics, and design aspects of centrifugal and reciprocating pumps.

			
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## Second Year -Fourth Semester- Course Outcomes (NEP-2020)

### BME32403: Engineering Thermodynamics

	Course Outcomes
<b>BME32403.1</b>	<b>Define</b> the basic concepts of thermodynamics, represent different thermodynamic processes on P-V and T-s plots and analyze them using gas laws and compute associated heat and work interactions.
<b>BME32403.2</b>	<b>Explain</b> First Law of thermodynamics and apply it to non-flow and flow processes.
<b>BME32403.3</b>	<b>Explain</b> Second Law of thermodynamics and entropy; analyze the performance of heat pump, heat engine and refrigerator.
<b>BME32403.4</b>	<b>Describe</b> the formation of steam, its characteristics and determine properties of steam using steam tables and Mollier chart.
<b>BME32403.5</b>	<b>Represent</b> various air standard cycles and vapour power cycles such as Carnot, Otto, Diesel, and Rankine cycles on P-v and T-s plots.

			
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## Second Year -Fourth Semester- Course Outcomes (NEP-2020)

### BME32406: Basics of CNC Programming

	Course Outcomes
<b>BME 32406.1</b>	<b>Identify</b> different metal removal processes.
<b>BME 32406.2</b>	<b>Explain</b> application and advantage of CNC machines and technology.
<b>BME 32406.3</b>	<b>Demonstrate</b> the controls of different CNC machines.
<b>BME 32406.4</b>	<b>Explain</b> the construction and working principle of CNC system.
<b>BME 324056.5</b>	<b>Identify</b> different axes, machine zero, home position of CNC turning machine.

			
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**Second Year -Fourth Semester- Course Outcomes (NEP-2020)**

**BME32405:Fluids Mechanics and Hydraulic Machines Lab**

	<b>Course Outcomes</b>
<b>BME32405.1</b>	<b>Demonstrate</b> the concept of Buoyancy and Metacentric Height.
<b>BME32405.2</b>	<b>Demonstrate</b> the application of Bernoulli's Theorem.
<b>BME32405.3</b>	<b>Estimate</b> various losses of energy in pipe.
<b>BME32405.4</b>	<b>Evaluate</b> performance characteristics of Impulse and Reaction turbine.
<b>BME32405.5</b>	<b>Evaluate</b> performance characteristics of various types of pumps.

			
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## Second Year -Fourth Semester- Course Outcomes (NEP-2020)

### BEC32306: Basic Electronics and Communication

	Course Outcomes
<b>BEC32306.1</b>	<b>Examine</b> the fundamentals behavior of diode in rectifiers, filter circuits.
<b>BEC32306.2</b>	<b>Illustrate</b> I/O characteristics of CE, CB, CC bipolar junction transistor.
<b>BEC32306.4</b>	<b>Infer</b> the basic fundamentals of communication system.

			
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## Second Year -Fourth Semester- Course Outcomes (NEP-2020)

### BSH32403: Human Values for Professional Society

	Course Outcomes
<b>BSH32403.1</b>	<b>Define and explain</b> the importance of value education in life.
<b>BSH32403.2</b>	<b>Understand and explain</b> the significance of harmony in family and society.
<b>BSH32403.3</b>	<b>Apply</b> ethics in personal and professional life and benefits the organization but also contributes to broader societal well-being.

			
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**Second Year -Fourth Semester- Course Outcomes (NEP-2020)**

**BSH32404: Leadership and Team Dynamics**

	<b>Course Outcomes</b>
<b>BSH32404.1</b>	<b>Explain</b> how global leadership skills contribute to leadership effectiveness.
<b>BSH32404.2</b>	<b>Understand</b> the leader's role in team-based organizations.
<b>BSH32404.3</b>	<b>Classify</b> the potential contribution of outdoor training to the development of team leadership.

			
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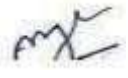




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**Second Year -Fourth Semester- Course Outcomes (NEP-2020)**

**BMEXX10:Automobile Engineering (Open Elective II )**

	<b>Course Outcomes</b>
<b>BMEXX10.1</b>	Identify the components and layout of automobile.
<b>BMEXX10.2</b>	Analyze the mechanics of transmission system.
<b>BMEXX10.3</b>	Compute the importance of suspension and braking system.

			
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## Second Year -Fourth Semester- Course Outcomes (NEP-2020)

### BME32410: ADVANCE MANUFACTURING TECHNOLOGY

	Course Outcomes
<b>BME32410.1</b>	<b>Interpret</b> the importance of nontraditional machining processes
<b>BME32410.2</b>	<b>Illustrate</b> the concept of Electro-Chemical Machining, Electrochemical Grinding, Electric Discharge Machining
<b>BME32410.3</b>	<b>Discuss</b> about Unconventional welding techniques such as Inert Gas MIG & TIG

			
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