Ballari Institute of Technology & Management, Ballari

Department of Mechanical Engineering

INSTITUTE VISION AND MISSION

VISION

We will be a Top Notch Educational Institution that Provides best of breed Educational Services by leveraging technology and delivered by best in class People in line with the Globalized world.

MISSION

To empower the Students with Technical & Managerial Skills, professional ethics & values, and an appreciation of Human Creativity & Innovation for an inquisitive mind.

DEPARTMENT VISION AND MISSION

VISION:

To have the ability to anticipate and effectively respond to changes in the field of Mechanical Engineering, to be perceived as being one of the best department known for its dedicated services for students satisfaction and to provide world class training to students for better society.

MISSION:

To become a centre of excellence of International standards, to educate Mechanical Engineering graduate to stay competitive at the cutting edge of technology with strong ethics and instill learning for achievements to benefit mankind.

Programme Educational Objectives (PEOs)

1. To make graduates self sustained by exploring to engineering problems with innovative ideas to tackle real-time issues.
2. To make graduates aware of the significance of competence in core engineering concepts, to adopt good ethical and leadership qualities.
3. To inculcate the graduates to pursue lifelong learning processes.

Programme Outcomes(POs)

a. The graduates will demonstrate the knowledge of Mathematics, Basic Sciences and Engineering.
b. The graduates will develop an ability to identify, formulate and solve engineering problems.
c. The graduates will be able to design, conduct experiments, analyze and interpret the data.
d. The graduates will exhibit skills to use modern engineering tools, software, and equipment to address the technical problems.
e. The graduates will show the understanding of the engineering solutions on the society and will be aware of contemporary issues.
f. The graduates will exhibit the knowledge of professional and ethical responsibilities.
g. The graduates will be able to communicate effectively both in verbal and written form.
h. The graduates will gain confidence for self improvement and lifelong learning.
i. The graduates will develop an instinct to investigate complex technical tasks.
j. The graduate is exposed to pros and cons of advanced technology towards environment and sustainability.
k. The graduate is capable of working both individually and as well in a team.
l. The graduates will acquire managerial skill to address economy and projects.

IV Semester course outcomes contribute to the POs

Course Title & Course Code	Course Outcomes	Mapping of Course outcomes with Programme outcomes

Engineering. Mathematics- IV 10MAT41	At the end of the course: • Students will be able to apply numerical techniques to solve initial value problems. • Students will be able to apply C-R equations to verify analytic function. • Students will be able to demonstrate the complex analysis skills to develop the conformal mappings and BLT. • Students will be able to apply the theorems to evaluate the integrals over a given curve using Cauchy′s integral formula and residue theorem. • Students will be able to apply curve fitting to the raw data in to the curve of best fit, and the definition of probability to solve many application problems. • Students will be able to apply binomial and Poisson distributions for trails of repeated nature. • Students will be able to apply test the goodness of fit and test the hypothesis. • Students will be able to apply stochastic process in queuing theory.	a ,b, c, e, i
Mechanical Measurements & Metrology 10ME42B	At the End of the Course the Students will be able to: • Explain the objectives of metrology and different standards of measurement • Solve numerical problems on end bars and wringing of slip gauges • Explain different types of tolerances and tolerance systems • Analyze a limit system and design gauges • Explain the working principle of various types comparators and angle measuring devices • Describe the working of autocollimator and optical flats • Explain different methods used for measurement of different screw thread and gear elements • Describe a generalized measurement system and performance characteristics of measurement system • Explain different types of modifying and terminating devices • Tell the methods of force, torque and pressure measurement • Explain different methods temperature and strain measurement. • Learn independently • Apply the concepts for understanding real life problems • Develop professional responsibility and communicate effectively.	a,c,d,i
Applied Thermodynamics	At the End of the Course the Students will be able to:	a,b,d,i,

10ME43	• Define Air Fuel Ratio • Demonstrate Different air standard cycles • Improve the Efficiency of Gas Turbine • Demonstrate Jet and Rocket Propulsion • Construct T-S diagram for Reheat and Regenerative cycles and there performance • Draw the P-V diagram for single stage and multi stage compressor • Analyze the COP, capacity, and power required for Variable compression Variable Absorption Refrigeration • Draw the psychometric charts • Test the IC Engines	
Kinematics of Machines 10ME44	At the End of the Course the Students will be able to: • Apply the various mechanisms which are suitable to the applications. • Determine the angular velocity & angular acceleration of links using graphical method • Apply the Kennedy's theorem to the various mechanisms. • Determine the linear & angular velocity using ICM. • Apply the Klein's construction to single slider crank mechanism. • Apply the law of gearing for designing the gears. • Solve the problems of gear trains. • Determine the velocity ratio of epicyclical gear trains by algebraic and tabular methods. • Solve the problems of cam profiles.	a,b,d,i
Manufacturing process – II 10ME45	At the End of the Course the Students will be able to: • Indentify the different types of mechanical machines and tools • How to increase the tool life • Analyze and apply the various metal forming process • Apply the use of different types of machines in tool life • Analyze non traditional mechanizing process • Participate and succeed in competitive examinations	a,d,e,j
Fluid Mechanics 10ME46B	At the End of the Course the Students will be able to: • Explain various properties of Fluids with units. • Evaluate the hydro static forces, total pressure and centre of pressure on submerged surfaces. • Determine the loss of energy between sections 1 and 2 using Bernoulli's equation for real fluids. • Solve the problems on loss of head due to friction in a pipe flow using Darcy-equation. • Apply the concepts of Hagen Poiseuille formula to determine: i) drop of pressure for a given	a, b,d,i

	length of a pipe L, ii) shear stress at the pipe wall. • Explain Lift and Drag, boundary layer concept as applied to the flow past immersed bodies.	
Mechanical Measurements & Metrology Lab 10ME47B	At the End of the Course the Students will be able to: • Explain the calibration procedure for pressure gauge, thermocouple, LVDT, load cell and micrometer. • Outline the procedure for finding the modulus of elasticity of a mild steel specimen using strain gauges. • Demonstrate the use of profile projector/tool maker's microscope for measurement of screw thread elements. • Explain the method of angle measurement using sine bar/sine center/bevel protractor. • Describe alignment measurement using autocollimator. • Explain the procedure for measurement of cutting forces using drill too and lathe tool dynamometers. • Describe the procedure for measurement of screw thread parameters using 2 wire/3 wire methods. • Explain the procedure for measurement of surface roughness using mechanical comparator/Tally surf. • Describe the gear elements measurement using gear tooth vernier/micrometer. • Explain the measurement of flatness using optical flats. • Communicate better and learn independently	a,b,c,d,i
Machine Shop 10ME48B	At the End of the Course the Students will be able to: • Develop the model independently by using lathe. • List different parts of lathe • Develop the model. • Independently by using shaping. • List different parts of shaping Difference between shaping • Planning.	a,c,d,e,h