



**ZEAL EDUCATION SOCIETY'S
ZEAL COLLEGE OF ENGINEERING AND RESEARCH
NARHE | PUNE -41 | INDIA**



GRADUATE EXIT SURVEY

A. STUDENT DETAILS

Passout Year : 2024

Name : Aishwari Shreyas Mulhankar

Div: A

Roll Number: B611003

Please rate the following on a scale of 5 to 1 with 5 - Excellent, 4 - Very Good, 3 - Good, 2 - Satisfactory, 1 - Below Satisfactory.

B. FEEDBACK ON PO's & PSO's

	Learning Outcome	Rating
PO 1	I am able to apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.	4
PO 2	I am able to identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	4
PO 3	I am able to design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.	4
PO 4	I am able to use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.	4
PO 5	I am able to 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.	4
PO 6	I am able to apply contextual knowledge to provide engineering solutions for societal, health, safety, legal and cultural issues	5
PO 7	I understood the impact of the professional engineering solutions in societal and environmental contexts, and able to demonstrate the knowledge of, and need for sustainable development.	4
PO 8	I have understood professional/ethical principles and responsibilities of the engineering practice	5
PO 9	I am able to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	5
PO 10	I am able to communicate technical report effectively in written/verbal form	4
PO 11	I am able to demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	4
PO 12	I am able to 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.	4
PSO 1	I am able to Identify, formulate and analyse real-life mechanical engineering problems by applying the principles of thermal, design, manufacturing, interdisciplinary and allied engineering.	4
PSO 2	I am able to select and apply appropriate materials, metallurgical processes, measurement techniques, feedback control systems, hydraulic and pneumatic control systems to develop appropriate solutions to mechanical engineering problems.	4
PSO 3	I am able to select and apply appropriate manufacturing technologies and tools, and develop competencies for working in manufacturing and allied industries.	4
PSO 4	I have acquired knowledge, skills, and hands-on experiences to work professionally in mechanical and related systems	5

C. Suggestions for Improvement if any



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Record No.: ZCOER-ACAD/R/38C

Revision: 00

Date:01/04/2021

Feedback on Infrastructure and Facilities

Name of Student:
Department: Mechanical Engineering

Roll No. :
Academic Year: 2022-23

We at ZCOER, Pune always strive hard to impart value added technological education through pursuit of academic excellence, research and entrepreneurial attitude. In this regard, your opinion plays a vital role in evaluating attainment of our objectives and to plan for further improvement. Please spare your time to furnish your honest opinion by answering below questionnaire.

1. **Class Rooms and laboratories**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
 2. **Library and Reading Room**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
 3. **Wi-Fi and Internet Facility**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
 4. **Training and Placement Center**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
 5. **Lukshya Study Center for Competitive Examinations**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
 6. **Washroom & Drinking water**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
 7. **Canteen**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
 8. **Gymnasium**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
 9. **Gymkhana and play-ground**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
 10. **Cultural center (Music, Dance, Recording studio)**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
 11. **Transportation**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
 12. **Hostel**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
 13. **Medical and Counseling**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
 14. **Safety and security**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
 15. **Suggestions if any**
-



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COURSE EXIT SURVEY

Academic Year :- 2023-24

SEM - I

Name of Student :

ROLL NO -

Class and Branch of Student : BE MECHANICAL

DIV -

Kindly provide genuine response for the following question which will be helpful for the continuous quality improvement of course

Note : Evaluation attribute =

5. Strongly agree 4. Moderately Agree 3. Slightly agree 2. Neutral 1. Strongly disagree

Subject	CES QN	Questions	Evaluation
HVAC	1	I am able to analyse the various types of air-craft refrigeration systems and able to explain the properties, applications of different refrigerants and its environmental issues.	4
	2	I am able to analyse the multi pressure refrigeration systems used for refrigeration applications.	4
	3	I am able to describe different types of components used in VCRS and its safety controls and also able to explain transcritical and ejector refrigeration systems	4
	4	I am able to estimate the cooling load for air conditioning systems as per given design conditions and indoor air quality	4
	5	I am able to design air distribution system with consideration of ventilation and infiltration.	4
	6	I am able to explain the types and working principle of desiccants, heat pump and thermal storage systems.	4
	7	Any suggestions for the improvement of course curriculum	
DOM	1	I am able to calculate the magnitude and position of balancing mass for static and dynamic balancing of rotating and reciprocating	4
	2	I am able to analyze the gyroscopic couple or effect for stabilization of Ship, Airplane and Four wheeler vehicles.	4
	3	I am able to estimate natural frequency for single degree of freedom un-damped and damped free vibratory systems.	4
	4	I am able to determine response of forced vibration due to harmonic excitation, base excitation and excitation due to unbalanced forces.	4
	5	I am able to estimate natural frequencies and mode shapes for two degree of freedom un-damped free longitudinal and torsional vibratory systems.	4
	6	I am able to use appropriate vibration noise & measuring instruments and vibration control methods for industrial/real-life applications	4
	7	Any suggestions for the improvement of course curriculum	
TURBO	1	I am able to apply impulse moment principle for various applications and INVESTIGATE performance characteristics of hydraulic turbines.	4
	2	I am able to determine the performance parameters of impulse and reaction steam turbine along with discussion of nozzles, governing mechanism & losses.	3
	3	I am able to MEASURE performance parameters of single & multistage centrifugal pumps along with discussion of cavitation and selection.	3
	4	I am able to EXPLAIN performance parameters of centrifugal compressor along with discussion of theoretical aspects of axial compressor.	4
	5	Any suggestions for the improvement of course curriculum	
IE	1	I am able to EVALUATE the productivity and IMPLEMENT various productivity improvement techniques.	4
	2	I am able to APPLY work study techniques and i have UNDERSTAND its importance for better productivity	5
	3	I am able to DEMONSTRATE the ability to SELECT plant location, appropriate layout and material handling equipment	5
	4	I am able to USE of Production planning and control tools for effective planning, scheduling and managing the shop floor control	4
	5	I am able to PLAN inventory requirements and EXERCISE effective control on manufacturing requirements.	4
	6	I am able to APPLY Ergonomics and legislation for human comfort at work place and UNDERSTANDS the role of value engineering in improving productivity	4
	7	Any suggestions for the improvement of course curriculum	



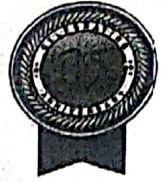
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PDD	1	I am able to follow product development process for various products to meet customer needs.	4
	2	I am able to use market survey for finalizing products specification as per customer need	4
	3	I am able to shortlist optimum idea or concept for product development from the idea or concept generated by using various tools.	4
	4	I am able to apply GD & T for the manufacturing of designed product.	5
	5	I am able to do the Verification and Validation of the product design and development by using various design and simulation software and tools	4
	6	I am able to select the tools and technique required for the product development for robust design	5
	7	Any suggestions for the improvement of course curriculum	
OR	1	I am able to evaluate various situations of Games theory and Decision techniques and apply them to solve them in real life for decision making.	
	2	I am able to select an appropriate model for queuing situations and sequencing situations and find the optimal solutions using models for different situations.	
	3	I am able to formulate various management problems and solve them using Linear programming using graphical method and simplex method.	
	4	I am able to formulate variety of problems such as transportation, assignment, travelling salesman and SOLVE these problems using linear programming approach.	
	5	I am able to plan optimum project schedule for network models arising from a wide range of applications for replacement situations find optimal solutions using appropriate models for the situation.	
	6	I am able to apply concepts of simulation and Dynamic programming	
	7	Any suggestions for the improvement of course curriculum	
DAL	1	I am able to UNDERSTAND the basics data Analytics using Statistics & Probability	4
	2	I am able to APPLY inferential statistical techniques to data for data analysis	4
	3	I am able to explore the data analysis techniques using various tool	4
	4	I am able to apply data science concept to solve real life problem	4
	5	I am able to select advanced techniques for data analysis	4
	6	Any suggestions for the improvement of course curriculum.	4
PROJECT STAGE-I	1	I am able to implement suitable methodology to solve the societal Problems pertaining to the mechanical engineering by utilizing the knowledge gained during the curriculum	4
	2	I am able to Create the sustainable, economic and environmental friendly solution to the considered problem and analyze the same by effective utilization of relevant tools and techniques."	5
	3	I am able to develop managerial skills and work as a team for obtaining the solution of mechanical or Interdisciplinary engineering related problems within stipulated time, following morality and ethics	4
	4	I am able to CONCEPTUALIZE a novel idea / technique into a product and DEMONSTRATE the final product for Functionality, Designability, and Manufacturability	4
	5	Any suggestions for the improvement of course curriculum	
AUDIT COURSE - VII	1	I learn the principle of stress management	4
	2	I am able to identify & Learn Massive Open Online Courses (MOOCs)	5
	3	I am able to understand about forms of IP and its rules and responsibilities	5
	4	I am aware about various government policies for Entrepreneurship	5
	5	Any suggestions for the improvement of course curriculum	4
SUGGESTION	1	Do you want to make any comment on Outcome Based Education?	
	2	Any other Suggestions for the improvement in the course Curriculum	
If any suggesstion in curriculum			



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COURSE EXIT SURVEY

Academic Year :- 2023-24

SEM - II

Name of Student :

ROLL NO -

Class and Branch of Student : BE MECHANICAL

DIV -

Kindly provide genuine response for the following question which will be helpful for the continuous quality improvement of course

Note : Evaluation attribute =

5. Strongly agree 4. Moderately Agree 3. Slightly agree 2. Neutral 1. Strongly disagree

Subject	CES QN	Questions	Evaluation
CIM	1	I am able to EXPLAIN CIM and factory automation	4
	2	I am able to UNDERSTAND the integration of hardware and software elements for CIM	4
	3	I am able to APPLY CNC program for appropriate manufacturing techniques	4
	4	I am able to ANALYZE processes planning, quality and MRP integrated with computers	4
	5	I am able to INTERPRET flexible, cellular manufacturing and group technology.	4
	6	I am able to ANALYZE the effect of IOT, Industry-4.0 and cloud base manufacturing.	4
	7	Any suggestions for the improvement of course curriculum	4
EE	1	I am able to explain the power generation scenario, the layout components of thermal power plant	4
	2	I am able to analyze the performance of steam condensers, cooling tower system and recognize an environmental impact and method of control	4
	3	I am able to explain the layout, component details of diesel engine plant, hydel and nuclear energy systems	4
	4	I am able to analyze the gas and improved power cycles	4
	5	I am able to explain the basic principles of energy management, storage and economics of power generation.	4
	6	I am able to explain the fundamentals of renewable energy systems	4
	7	Any suggestions for the improvement of course curriculum	
ELECTIVE-V (402050A)	1	I am able to understand the important of quality and quality tools in various fields	4
	2	I am able to form the control chart and solve the problems on it also able to solve process capability problem	4
	3	I am able to understand the concept of reliability	4
	4	I am able to evaluate System reliability	4
	5	I am able to understand various failure modes and create fault tree diagram.	4
	6	I am able to knows the concept of reliability centered maintenance and apply reliability tests	4
	7	Any suggestions for the improvement of course curriculum	
ELECTIVE-V (402050B)	1	I am able to explain need of energy and energy management	4
	2	I am able to carry energy audit	4
	3	I am able to understand Energy conservation opportunities	4
	4	I am able to determine the performance of Thermal Utilities	4
	5	I am able to analyze performance of Electrical Utilities	4
	6	I am able to suggest the performance improvement opportunities	4
	7	Any suggestions for the improvement of course curriculum	



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ELECTIVE-VI 402051B)	1	I am able to DESCRIBE the basic fundamentals, needs and scopes of renewable energy systems	4
	2	I am able to EXPLAIN performance aspects of flat and concentric solar collectors along with application	3
	3	I am able to DESIGN solar photovoltaic system for residential applications	4
	4	I am able to DESIGN AND ANALYSIS of wind energy conversion system	4
	5	I am able to APPLY Installation practices of Wind and Solar Photovoltaic Systems for grid connection.	4
	6	I am able to DETERMINE performance parameters of bio-energy conversion systems	4
	7	Any suggestions for the improvement of course curriculum	-
ELECTIVE-VI402051E)	1	I am able to UNDERSTAND the basics related to e-vehicle	
	2	I am able to CLASSIFY the different hybrid vehicles	
	3	I am able to IDENTIFY and EVALUATE the Prime Movers, Energy Storage and Controllers	
	4	I am able to DISCOVER and CATAGORIZE the Electric Vehicle Configuration with respect to Propulsion, Power distribution and Drive-Train Topologies	
	5	I am able to DEVELOP body frame with appropriate suspension system and TESTING of for e-Vehicles	
	6	I am able to CLASSIFY and EVALUATE Battery Charging techniques and managemen	
	7	Any suggestions for the improvement of course curriculum	
MSAA	1	I am able to DEVELOP an understanding of the Systems Engineering Process and the range of factors that influence the product need, problem-specific information collection, Problem Definition, Task Specification	4
	2	I am able to ILLUSTRATE the concepts and USE the developed skill-set of use of computational tools (FEA, CFD, MBD, FSI, CAE) to automate the complete product development process	4
	3	I am able to EVALUATE the knowledge of new developments and innovations in technological system	4
	4	I am able to APPRAISE how technologies have transformed people's lives and can be used to SOLVE challenges associated with climate change, efficient energy use, security, health	4
	5	I am able to PRIORITIZE the concept of quality and standards, including systems reliability, safety & fitness for the intended purpose	4
	6	I am able to INVENT yourself to face the challenges of future technologies and their associated Problems.	4
	7	Any suggestions for the improvement of course curriculum	
PROJECT STAGE-III	1	I am able to implement suitable methodology to solve the societal Problems pertaining to the mechanical engineering by utilizing the knowledge gained during the curriculum	4
	2	I am able to Create the sustainable, economic and environmental friendly solution to the considered problem and analyze the same by effective utilization of relevant tools and techniques.	4
	3	I am able to develop managerial skills and work as a team for obtaining the solution of mechanical or Interdisciplinary engineering related problems within stipulated time, following morality and ethics	4
	4	I am able to CONCEPTUALIZE a novel idea / technique into a product and DEMONSTRATE the final product for Functionality, Designability, and Manufacturability	4
	5	Any suggestions for the improvement of course curriculum	
AUDIT COURSE-VII	1	I am able to Apply the concept of operations management in manufacturing and service sector	4
	2	I am able to develop production schedules and plan resources (material and machine) required for production	4
	3	I am able to Design maintenance schedules in manufacturing units	4
	4	I am able to Apply the concepts of purchase, stores and inventory management and analyze and evaluate material requirement decisions	4
	5	I am able to Analyze performance related to productivity and will be able to conduct basic industrial engineering study on men and machines	4
	6	I am able to Analyze and evaluate various facility alternatives and their capacity decisions, develop a balanced line of production & scheduling and sequencing techniques in operation environments	4
	7	Any suggestions for the improvement of course curriculum	
SUGGESTION N	1	Do you want to make any comment on Outcome Based Education?	
	2	Any other Suggestions for the improvement in the course Curriculum	
If any sugesstion in curriculum			



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COURSE EXIT SURVEY

Academic Year :- 2022-23

SEM - I

Name of Student : Aiwalke Shreyas M.

ROLL NO -

Class and Branch of Student : TE MECHANICAL

DIV - A

Kindly provide genuine response for the following question which will be helpful for the continuous quality improvement of course

Note : Evaluation attribute =

5. Strongly agree 4. Moderately Agree 3. Slightly agree 2. Neutral 1. Strongly disagree

Subject	CES QN	Questions	Evaluation
NSM	1	I am able to solve system of equations using direct and iterative numerical methods.	
	2	I am able to estimate solutions for differential equations using numerical techniques.	
	3	I am able to develop solution for engineering applications with numerical integration	
	4	I can design and create models using a curve fitting and regression analysis	
	5	I can apply statistical technique for quantitative data analysis	
	6	I can demonstrate the data using the concepts of probability and linear algebra.	
	7	Any suggestions for the improvement of course curriculum	
HMT	1	I am able to analyze & apply the modes of heat transfer equations for one dimensional thermal system.	
	2	I am able to design a thermal system considering fins, thermal insulation and & Transient heat conduction	
	3	I learned principles of convection, condensation & boiling and evaluate the heat transfer rate in natural and forced convection	
	4	I am able to analyze heat transfer by radiation.	
	5	I am able to analyze the rate of mass transfer using Fick's Law of Diffusion and Explain mass diffusion in different coordinate systems	
	6	I am able to design heat transfer equipments and analyze it's performance	
	7	Any suggestions for the improvement of course curriculum	
DOM	1	I am able to design and analyze the cotter and knuckle Joints, levers and components subjected to eccentric loading	
	2	I am able to design shafts, keys and couplings under static loading conditions	
	3	I am able to analyze different stresses in power screws and apply those in the procedure to design screw jack.	
	4	I am able to evaluate dimensions of machine components under fluctuating loads	
	5	I am able to evaluate and interpret the stress developed on the different type of welded and threaded joints	
	6	I am able to apply the design and development procedure for different types of springs	
	7	Any suggestions for the improvement of course curriculum	
MTRX	1	I am able to define key elements of mechatronics, principle of sensor and its characteristics	
	2	I am able to use concept of signal processing and make use of interfacing systems such as ADC, DAC, Digital I/O.	
	3	I can determine the transfer function by using block diagram reduction technique	
	4	I can evaluate poles and zero, frequency domain parameter for mathematical modeling for mechanical system	
	5	I am able to apply the concept of different controller modes to an industrial application.	
	6	I can develop the ladder programming for industrial application.	
	7	Any suggestions for the improvement of course curriculum	



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		Identification of surface defects and their remedies
ELECTIVE-I (302045 A)	1	I am able to analyze the effect of friction in metal forming deep drawing and identification of surface defects and their remedies in deep drawing operations
	2	I can classify various special forming processes and its applications.
	3	I am able to analyze and identify the weldability of various materials
	4	I am able to analyze and identify different solid state welding processes and its applications
	5	I can identify the suitable advanced welding process for various applications.
	6	I can identify the role of sustainable manufacturing in manufacturing industry
	7	Any suggestions for the improvement of course curriculum
ELECTIVE-I (302045 B)	1	I am able to apply the theory of metal cutting for effective machining.
	2	I can explain the gear and thread manufacturing processes.
	3	I can explain the working of different machining processes.
	4	I can explain and design Jigs and Fixtures for different components
	5	I am able to apply process planning fundamentals to production processes
	6	I am able to apply CNC Program for various machining processes.
	7	Any suggestions for the improvement of course curriculum
DML	1	I can develop components using conventional machines, CNC machines and Additive Manufacturing Techniques
	2	I am able to analyze cutting tool parameters for machining assigned job
	3	I can demonstrate simulation of manufacturing process using Digital Manufacturing Tools
	4	I am able to select and design jigs and fixtures for a given component
	5	I can demonstrate different parameters for CNC retrofitting and reconditioning
	6	Any suggestions for the improvement of course curriculum
SKILL DEV	1	I am able to apply and demonstrate procedure of assembly & disassembly of various machines.
	2	I am able to design and develop working/model of machine parts or any new product
	3	I am able to evaluate fault with diagnosis on the machines, machine tools and home appliances.
	4	I am able to identify and demonstrate the various activities performed in an industry such as maintenance, design of components, material selection.
	5	Any suggestions for the improvement of course curriculum
AUDIT COURSE-V	1	I understood Entrepreneurship, intellectual property and relation between them
	2	I understood concept of innovation and its types
	3	I learned the rules, rights and responsibilities of holder of Patent, Copyright and Trademark
	4	I am aware about features, functions, rules and regulations of industrial design
	5	I am able to understand about forms of IP and its rules and responsibilities
	6	I am aware about various government policies for Entrepreneurship
	7	Any suggestions for the improvement of course curriculum
SUGGESTION	1	Do you want to make any comment on Outcome Based Education?
	2	Any other Suggestions for the improvement in the course Curriculum
If any suggestion in curriculum		



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COURSE EXIT SURVEY

Academic Year :- 2022-23

SEM - II

Name of Student : Aiwale Shreyas Mahavi

ROLL NO -

Class and Branch of Student : TE MECHANICAL

DIV -

Kindly provide genuine response for the following question which will be helpful for the continuous quality improvement of course

Note : Evaluation attribute =

5. Strongly agree 4. Moderately Agree 3. Slightly agree 2. Neutral 1. Strongly disagree

Subject	CES QN	Questions	Evaluation
AIML	1	I can demonstrate fundamentals of artificial intelligence and machine learning.	
	2	I am able to apply feature extraction and selection techniques	
	3	I am able to apply machine learning algorithms for classification and regression problems	
	4	I can develop a machine learning model	
	5	I understood the concepts of reinforced and deep learning	
	6	I can simulate machine learning model in mechanical engineering problems	
	7	Any suggestions for the improvement of course curriculum	
CAE	1	I am able to find shape function in finite element formulation	
	2	I am able to apply meshing for FEA	
	3	I am able to apply Material properties & boundary condition to solve 1D & 2D problem	
	4	I am able to apply numerical methods for different type of analysis	
	5	I am able to solve non-linear and dynamic analysis	
	6	I am able to generate result from any analysis software	
	7	Any suggestions for the improvement of course curriculum	
DOTS	1	I am able to design spur & helical gear for industrial applications	
	2	I am able to design bevel & worm gear for industrial applications	
	3	I am able to select & design rolling, sliding contact bearing	
	4	I am able to design clutches and brakes for automotive and industrial machinery sector	
	5	I am able to design of M/C tool gear box for different applications	
	6	I understood modes of operation, degree of hybridization and allied terms associated with hybrid electric vehicles	
	7	Any suggestions for the improvement of course curriculum	
ELECTIVE-II (302052A)	1	I understood different composites materials	
	2	I understood types of polymer matrix composites and its fabrication processes	
	3	I understood types of metal matrix composites & its fabrication processes and evaluate effect of reinforcement	
	4	I am able to estimate geometrical aspects and evaluate mechanical properties of composites	
	5	I can select appropriate testing and inspection method for composite materials.	
	6	I can select composites materials for various application	
	7	Any suggestions for the improvement of course curriculum	



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ELECTIVE-II (302050 B)	1	I am able to demonstrate Surface Engineering, wear mechanism and principle of surface degradation	
	2	I am able to analyze and select corrosion prevention methods	
	3	I am able to demonstrate the role of surface engineering to modify/improve the materials surface properties	
	4	I am able to select the suitable surface heat treatments techniques to improve the surface properties	
	5	I am able to apply the suitable surface coating technique to modify surface properties	
	6	I am able to analyze and evaluate coating defects and remedies and examine the surface morphology of materials	
	7	Any suggestions for the improvement of course curriculum	
ML	1	I am able to evaluate errors in measuring instruments and reduce uncertainty in the measurement	
	2	I can analyze strain measurement parameters by taking modulus of elasticity in consideration to acknowledge its usage in failure detection and force variations	
	3	I am able to examine surface morphology	
	4	I am able to measure the dimensional accuracy using Comparator and limit gauges and appraise their usage in actual measurement or comparison with standards set to reduce measurement lead time	
	5	I am able to perform Testing of Flow rate, speed and temperature measurements and their effect on performance in machines and mechanisms like hydraulic or pneumatic trainers, lathe machine etc. to increase repeatability and	
	6	I am aware of opportunities of entrepreneurship/business in various sectors of metrology	
	7	Any suggestions for the improvement of course curriculum	
FP&CL	1	I understood working principle of components used in hydraulic and pneumatic systems	
	2	I am able to identify various applications of hydraulic and pneumatic systems	
	3	I am able to select an appropriate component required for hydraulic and pneumatic systems using manufactures' catalogues	
	4	I can simulate & analyse various hydraulic and pneumatic systems for industrial/mobile applications	
	5	I am able to a hydraulic and pneumatic system for the industrial applications	
	6	I am able to design & demonstrate various IoT, PLC based controlling system using hydraulics and pneumatics	
	7	Any suggestions for the improvement of course curriculum	
INTERNSHIP & MINI PROJECT	1	I understood company organizational structure, products, services, processes, departments, customers, vendors etc.	
	2	I am able to apply theoretical knowledge and concepts to solve assignments given by company mentor	
	3	I am able to identify, formulate and analyze existing engineering problems in industry related to design, manufacturing, procurement, quality, maintenance, research, new product development etc	
	4	I am able to find solutions for assigned engineering problems considering health, safety, legal and environmental standards/requirements	
	5	I understood and can demonstrate effective verbal/written communication, listening and documentation skills.	
	6	I can demonstrate individual responsibility, participation in teams and management of multiple assignments/projects	
	7	I can develop and demonstrate professional work habits, attitudes, ethics and behavior	
	8	Any suggestions for the improvement of course curriculum	
AUDIT COURSE-VI	1	I understood Management Information system, Database management system, and Strategic Enterprise System	
	2	I understood different Operational Support Systems and able to analyze IT strategy & balanced score card	
	3	I understood Mobile, E-Commerce and latest Emerging Technologies	
	4	I learned Knowledge Management System, various Social, ethical and security Issues in MIS	
	5	Any suggestions for the improvement of course curriculum	
SUGGESTIO N	1	Do you want to make any comment on Outcome Based Education?	
	2	Any other Suggestions for the improvement in the course Curriculum	
If any suggesstion in curriculum			



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COURSE EXIT SURVEY

Academic Year :- 2021-22

SEM -I

Name of Student : Aiwale Shreyas M.

ROLL NO -

Class and Branch of Student : SE MECHANICAL

DIV -

Kindly provide genuine response for the following question which will be helpful for the continuous quality improvement of course

Note : Evaluation attribute =

5. Strongly agree 4. Moderately Agree 3. Slightly agree 2. Neutral 1. Strongly disagree

Subject	CES ON	Questions	Evaluation
SM	1	I am able to Explain types of loads, Stress-strain diagram for ductile and brittle materials and Determine stresses and strains	
	2	I am able to Draw Shear force and bending moment diagram for transverse loading and supports.	
	3	I am able to Compute the bending stresses, shear stresses and slope & deflection on a beam	
	4	I am able to Explain Torsion on circular shafts, Thin-Walled Tubes and Calculate torsional shear stress in shaft and buckling of columns	
	5	I am able to Apply the concept of principal stresses and theories of failure to determine stresses on a 2-D element.	
	6	I am able to Apply the concepts of SFD & BMD, torsion and principal stresses to solve combined loading application based problems	
	7	Any suggestions for the improvement of course curriculum	
SMD	1	I understood fundamentals of 3D Modeling, CAD system, Model viewing in Product Lifecycle management	
	2	I am able to apply the knowledge of Curves & Surfaces to create complex solid geometry and create reverse Engineering of surface/solid modeling using Point Cloud Data	
	3	I am able to create & analyze solid models and assemblies using modeling technique by applying design principles	
	4	I am able to apply geometric transformations to simple 2D objects	
	5	I am able to apply CAD model data for CAD based engineering applications viz. production drawings, 3D printing, FEA, CFD, MBD, CAE, CAM	
	6	I am able to apply PMI & MBD approach for communication	
	7	Any suggestions for the improvement of course curriculum	
ET	1	I can describe fundamentals of Thermodynamics and apply first law of thermodynamics to flow and non-flow process.	
	2	I am able to apply the gas laws for thermodynamic processes and Evaluate the system performance by Second Law of Thermodynamics	
	3	I am able to apply entropy, available and non available energy for an Open and Closed System	
	4	I can determine the properties of steam and their effect on performance of vapour power cycle.	
	5	I am able to analyse the fuel combustion process and products of combustion.	
	6	I am able to evaluate the performance parameters of Steam generators and ANALYZE the Boiler Draught parameters	
	7	Any suggestions for the improvement of course curriculum	



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EMM	1	I am able to compare crystal structures, Estimate lattice parameters & Material Properties and Describe the Deformation of Materials	
	2	I am able to analyze mechanical properties using destructive and non-destructive testing of materials and Examine surface morphology using Microscopic and Macroscopy Techniques	
	3	I am able to examine Solid solutions, Estimate Solidification parameters and Describe Phase Diagrams and Iron-Carbon Diagram	
	4	I am able to describe austenite transformation in steel and Apply heat treatment processes and Surface Hardening methods to different materials	
	5	I am able to describe Ferrous Materials and Establish it's Microstructure and property relationship	
	6	I am able to describe and select appropriate Non-Ferrous Materials & recent material for industrial applications, Establish it's microstructure and property relationship	
	7	Any suggestions for the improvement of course curriculum	
EEE	1	I am able to apply programming concepts and understood role of Microprocessor and Microcontroller in embedded systems.	
	2	I can develop interfacing of different types of sensors and other hardware devices with Atmega328 based Arduino Board	
	3	I understood the operation of DC motor, its speed control methods and braking	
	4	I can distinguish between types of three phase induction motor and its characteristic features	
	5	I can explain emerging technology of Electric Vehicle (EV) and its modular subsystems	
	6	I can choose energy storage devices and electrical drives for EVs	
	7	Any suggestions for the improvement of course curriculum	
GD&TL	1	I can select appropriate IS and ASME standards for drawing	
	2	I can create, read and analyze the industrial drawings of the parts and assembly with appropriate tolerances, fits, Surface finish and Welding symbols	
	3	I can select an appropriate manufacturing process using DFM, DFA, etc.	
	4	Any suggestions for the improvement of course curriculum	
AUDIT COURSE III	1	I understood importance of soft skills required for retaining career growth.	
	2	I Understood and able to develop effective communication required in professional environment	
	3	I can demonstrate presentation, interview and group discussion skills	
	4	Any suggestions for the improvement of course curriculum	
SUGGESTION	1	Do you want to make any comment on Outcome Based Education?	
	2	Any other Suggestions for the improvement in the course Curriculum	
If any suggesstion in curriculum			



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COURSE EXIT SURVEY

Academic Year :- 2022-23

SEM -II

Name of Student : Aiwale, Shreyas, M.

ROLL NO -

Class and Branch of Student : SE MECHANICAL

DIV -

Kindly provide genuine response for the following question which will be helpful for the continuous quality improvement of course

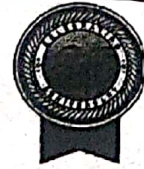
Note : Evaluation attribute =

5. Strongly agree 4. Moderately Agree 3. Slightly agree 2. Neutral 1. Strongly disagree

Subject	CES ON	Questions	Evaluation
EM-III	1	I am able to apply the knowledge of higher order linear differential equations to model and analyze the mass spring systems.	
	2	I understood the concepts of Laplace transform and Fourier transform and apply it to solve the models of vibration theory, heat transfer	
	3	I am able to interpret and analyze the data using statistical tools and techniques	
	4	I am able to interpret and analyze the data using probability techniques.	
	5	I am able to apply Vector Integral Calculus to Analyze Fluid Mechanics problems	
	6	I am able to sing analyze the problems related to vibration of string and heat flow using partial differential equations	
	7	Any suggestions for the improvement of course curriculum	
KOM	1	I am able to apply kinematic analysis to simple mechanisms	
	2	I am able to analyze velocity and acceleration in mechanisms by Analytical method	
	3	I am able to analyze velocity and acceleration in mechanisms by graphical method	
	4	I am able to Synthesize a four bar mechanism with analytical and graphical methods	
	5	I am able to classify and illustrate gears and gear train	
	6	I am able to construct cam profile for given follower motion and explain transfer Mechanisms in Automation Systems	
	7	Any suggestions for the improvement of course curriculum	
AT	1	I am able to determine COP of refrigeration system and analyze psychrometric processes.	
	2	I am able to describe the basics of engine terminology, air standard, fuel air and actual cycles.	
	3	I am able to describe the factors affecting the combustion performance of SI and CI engines and discuss the factors affecting knocking and detonation.	
	4	I am able to analyze the performance parameters for Engine and Describe the effect of engine emissions on environment and various emission control methods.	
	5	I am able to describe the Engine systems and alternative fuels	
	6	I am able to explain the construction and working reciprocating and rotary air compressors and Evaluate the performance of reciprocating compressors.	
	7	Any suggestions for the improvement of course curriculum	
FM	1	I am able to calculate various properties of fluid	
	2	I am able to apply the laws of fluid statics for the surfaces immersed in the fluid and understand the concept of buoyancy	
	3	I am able to categorize types of fluid flow and Evaluate terms associated in fluid kinematics	
	4	I am able to apply principles of fluid dynamics for flow measurement	
	5	I am able to estimate major and minor losses in internal flows and determine boundary layer formation over an external surface	
	6	I am able to construct mathematical correlation considering dimensionless parameters and Estimate the performance of prototype using model laws	
	7	Any suggestions for the improvement of course curriculum	



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MP	1	I am able to design and analyze casting processes and describe its defect	
	2	I am able to explain metal forming processes and evaluate load required for rolling	
	3	I am able to demonstrate press working operations and apply the basic principles to design dies and tools for forming and shearing operations	
	4	I am able to explain different welding processes and Evaluate welding parameters	
	5	I am able to compare thermoplastics and thermosetting and Explain polymer processing techniques	
	6	I am able to categorize composites and describe the composite manufacturing processes	
	7	Any suggestions for the improvement of course curriculum	
PROJECT BASED LEARNING-II	1	I am able to identify the real-world problem (possibly of interdisciplinary nature) through a rigorous literature survey and formulate / set relevant aims and objectives	
	2	I am able to analyze the results and arrive at valid conclusions	
	3	I can provide suitable solution based on the fundamentals of mechanical engineering by possibly integration of previously acquired knowledge	
	4	I can contribute to society through proposed solutions by strictly following professional ethics and safety measures	
	5	I can use technology in proposed work and demonstrate learning in oral and written form	
	6	I am able to develop ability to work as an individual and as a team member.	
	7	Any suggestions for the improvement of course curriculum	
MACHINE SHOP	1	I am able to Illustrate casting and/or metal forming processes in industry	
	2	I am able to perform TIG/ MIG/ Resistance/Gas welding technique	
	3	I am able to make Fibre-reinforced Composites by hand lay-up process or spray lay-up techniques	
	4	I can create plastic component using manufacturing process	
	5	I am able to apply grinding process for surface machining	
	6	I am able to demonstrate indexing mechanism and creat a spur gear using milling machine	
	7	Any suggestions for the improvement of course curriculum	
AUDIT COURSE IV	1	I understood business/professional/personal/Corporate Ethics	
	2	I can apply business/professional/personal/Corporate EthicS	
	3	I understood Patents, Copy-rights, Intellectual Property rights, Trade Marks, and Ethical Value System	
	4	Any suggestions for the improvement of course curriculum	
SUGGESTION	1	Do you want to make any comment on Outcome Based Education?	
	2	Any other Suggestions for the improvement in the course Curriculum	
If any sugesstion in curriculum			



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GRADUATE EXIT SURVEY

A. STUDENT DETAILS

Passout Year : 2024

Name : Ketan Keshav Ambede.

Div: A

Roll Number: B611004

Please rate the following on a scale of 5 to 1 with 5 - Excellent, 4 - Very Good, 3 - Good, 2 - Satisfactory, 1- Below Satisfactory.

B. FEEDBACK ON PO's & PSO's

	Learning Outcome	Rating
PO 1	I am able to apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.	5
PO 2	I am able to identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	5
PO 3	I am able to design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.	4
PO 4	I am able to use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.	4
PO 5	I am able to 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.	5
PO 6	I am able to apply contextual knowledge to provide engineering solutions for societal, health, safety, legal and cultural issues	5
PO 7	I understood the impact of the professional engineering solutions in societal and environmental contexts, and able to demonstrate the knowledge of, and need for sustainable development.	4
PO 8	I have understood professional/ethical principles and responsibilities of the engineering practice	5
PO 9	I am able to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	4
PO 10	I am able to communicate technical report effectively in written/verbal form	5
PO 11	I am able to demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	5
PO 12	I am able to 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.	5
PSO 1	I am able to Identify, formulate and analyse real-life mechanical engineering problems by applying the principles of thermal, design, manufacturing, interdisciplinary and allied engineering.	5
PSO 2	I am able to select and apply appropriate materials, metallurgical processes, measurement techniques, feedback control systems, hydraulic and pneumatic control systems to develop appropriate solutions to mechanical engineering problems.	5
PSO 3	I am able to select and apply appropriate manufacturing technologies and tools, and develop competencies for working in manufacturing and allied industries.	4
PSO 4	I have acquired knowledge, skills, and hands-on experiences to work professionally in mechanical and related systems	5

C. Suggestions for Improvement if any : No suggestions.



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Record No.: ZCOER-ACAD/R/38C

Revision: 00

Date: 01/04/2021

Feedback on Infrastructure and Facilities

Name of Student:
Department: Mechanical Engineering

Roll No. :
Academic Year: 2022-23

We at ZCOER, Pune always strive hard to impart value added technological education through pursuit of academic excellence, research and entrepreneurial attitude. In this regard, your opinion plays a vital role in evaluating attainment of our objectives and to plan for further improvement. Please spare your time to furnish your honest opinion by answering below questionnaire.

1. **Class Rooms and laboratories**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
2. **Library and Reading Room**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
3. **Wi-Fi and Internet Facility**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
4. **Training and Placement Center**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
5. **Lukshya Study Center for Competitive Examinations**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
6. **Washroom & Drinking water**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
7. **Canteen**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
8. **Gymnasium**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
9. **Gymkhana and play-ground**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
10. **Cultural center (Music, Dance, Recording studio)**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
11. **Transportation**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
12. **Hostel**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
13. **Medical and Counseling**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
14. **Safety and security**
Exceeds Expectations/ Meets Expectations/ Needs Improvement/ Unacceptable
15. **Suggestions if any : No Suggestion**



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COURSE EXIT SURVEY

Academic Year :- 2023-24

SEM - I

Name of Student : Ketan Keshav Ambede

ROLL NO - B611004

Class and Branch of Student : BE MECHANICAL

DIV - A

Kindly provide genuine response for the following question which will be helpful for the continuous quality improvement of course

Note : Evaluation attribute =

5. Strongly agree 4. Moderately Agree 3. Slightly agree 2. Neutral 1. Strongly disagree

Subject	CES QN	Questions	Evaluation
HVAC	1	I am able to analyse the various types of air-craft refrigeration systems and able to explain the properties, applications of different refrigerants and its environmental issues.	5
	2	I am able to analyse the multi pressure refrigeration systems used for refrigeration applications.	4
	3	I am able to describe different types of components used in VCRS and its safety controls and also able to explain transcritical and ejector refrigeration systems	5
	4	I am able to estimate the cooling load for air conditioning systems as per given design conditions and indoor air quality	4
	5	I am able to design air distribution system with consideration of ventilation and infiltration.	5
	6	I am able to explain the types and working principle of desiccants, heat pump and thermal storage systems.	5
	7	Any suggestions for the improvement of course curriculum	No
DOM	1	I am able to calculate the magnitude and position of balancing mass for static and dynamic balancing of rotating and reciprocating	5
	2	I am able to analyze the gyroscopic couple or effect for stabilization of Ship, Airplane and Four wheeler vehicles.	5
	3	I am able to estimate natural frequency for single degree of freedom un-damped and damped free vibratory systems.	5
	4	I am able to determine response of forced vibration due to harmonic excitation, base excitation and excitation due to unbalanced forces.	5
	5	I am able to estimate natural frequencies and mode shapes for two degree of freedom un-damped free longitudinal and torsional vibratory systems.	5
	6	I am able to use appropriate vibration noise & measuring instruments and vibration control methods for industrial/real-life applications	5
	7	Any suggestions for the improvement of course curriculum	No
TURBO	1	I am able to apply impulse moment principle for various applications and INVESTIGATE performance characteristics of hydraulic turbines.	5
	2	I am able to determine the performance parameters of impulse and reaction steam turbine along with discussion of nozzles, governing mechanism & losses.	4
	3	I am able to MEASURE performance parameters of single & multistage centrifugal pumps along with discussion of cavitation and selection.	4
	4	I am able to EXPLAIN performance parameters of centrifugal compressor along with discussion of theoretical aspects of axial compressor.	4
	5	Any suggestions for the improvement of course curriculum	No
IE	1	I am able to EVALUATE the productivity and IMPLEMENT various productivity improvement techniques.	5
	2	I am able to APPLY work study techniques and i have UNDERSTAND its importance for better productivity	5
	3	I am able to DEMONSTRATE the ability to SELECT plant location, appropriate layout and material handling equipment	5
	4	I am able to USE of Production planning and control tools for effective planning, scheduling and managing the shop floor control	5
	5	I am able to PLAN inventory requirements and EXERCISE effective control on manufacturing requirements.	4
	6	I am able to APPLY Ergonomics and legislation for human comfort at work place and UNDERSTANDS the role of value engineering in improving productivity	4
	7	Any suggestions for the improvement of course curriculum	No.



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PDD	1	I am able to follow product development process for various products to meet customer needs.	5
	2	I am able to use market survey for finalizing products specification as per customer need	5
	3	I am able to shortlist optimum idea or concept for product development from the idea or concept generated by using various tools.	5
	4	I am able to apply GD & T for the manufacturing of designed product.	5
	5	I am able to do the Verification and Validation of the product design and development by using various design and simulation software and tools	5
	6	I am able to select the tools and technique required for the product development for robust design	4
	7	Any suggestions for the improvement of course curriculum	No
OR	1	I am able to evaluate various situations of Games theory and Decision techniques and apply them to solve them in real life for decision making.	5
	2	I am able to select an appropriate model for queuing situations and sequencing situations and find the optimal solutions using models for different situations.	-
	3	I am able to formulate various management problems and solve them using Linear programming using graphical method and simplex method.	-
	4	I am able to formulate variety of problems such as transportation, assignment, travelling salesman and SOLVE these problems using linear programming approach.	-
	5	I am able to plan optimum project schedule for network models arising from a wide range of applications for replacement situations find optimal solutions using appropriate models for the situation.	-
	6	I am able to apply concepts of simulation and Dynamic programming	-
	7	Any suggestions for the improvement of course curriculum	No
DAL	1	I am able to UNDERSTAND the basics data Analytics using Statistics & Probability	5
	2	I am able to APPLY inferential statistical techniques to data for data analysis	5
	3	I am able to explore the data analysis techniques using various tool	5
	4	I am able to apply data science concept to solve real life problem	4
	5	I am able to select advanced techniques for data analysis	5
	6	Any suggestions for the improvement of course curriculum	No
PROJECT STAGE-I	1	I am able to implement suitable methodology to solve the societal Problems pertaining to the mechanical engineering by utilizing the knowledge gained during the curriculum	5
	2	I am able to Create the sustainable, economic and environmental friendly solution to the considered problem and analyze the same by effective utilization of relevant tools and techniques."	5
	3	I am able to develop managerial skills and work as a team for obtaining the solution of mechanical or Interdisciplinary engineering related problems within stipulated time, following morality and ethics	5
	4	I am able to CONCEPTUALIZE a novel idea / technique into a product and DEMONSTRATE the final product for Functionality, Designability, and Manufacturability	4
	5	Any suggestions for the improvement of course curriculum	No
AUDIT COURSE - VII	1	I learn the principle of stress management	5
	2	I am able to identify & Learn Massive Open Online Courses (MOOCs)	5
	3	I am able to understand about forms of IP and its rules and responsibilities	5
	4	I am aware about various government policies for Entrepreneurship	4
	5	Any suggestions for the improvement of course curriculum	5
SUGGESTION	1	Do you want to make any comment on Outcome Based Education?	No
	2	Any other Suggestions for the improvement in the course Curriculum	No.
If any suggestion in curriculum		No suggestion	



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COURSE EXIT SURVEY

Academic Year :- 2023-24

SEM - II

Name of Student : Ketan Kushav Ambedkar

ROLL NO - B611004

Class and Branch of Student : BE MECHANICAL

DIV - A

Kindly provide genuine response for the following question which will be helpful for the continuous quality improvement of course

Note : Evaluation attribute =

5. Strongly agree 4. Moderately Agree 3. Slightly agree 2. Neutral 1. Strongly disagree

Subject	CES QN	Questions	Evaluation
CIM	1	I am able to EXPLAIN CIM and factory automation	5
	2	I am able to UNDERSTAND the integration of hardware and software elements for CIM	5
	3	I am able to APPLY CNC program for appropriate manufacturing techniques	4
	4	I am able to ANALYZE processes planning, quality and MRP integrated with computers	4
	5	I am able to INTERPRET flexible, cellular manufacturing and group technology.	5
	6	I am able to ANALYZE the effect of IOT, Industry-4.0 and cloud base manufacturing.	5
	7	Any suggestions for the improvement of course curriculum	No
EE	1	I am able to explain the power generation scenario, the layout components of thermal power plant	5
	2	I am able to analyze the performance of steam condensers, cooling tower system and recognize an environmental impact and method of control	4
	3	I am able to explain the layout, component details of diesel engine plant, hydel and nuclear energy systems	4
	4	I am able to analyze the gas and improved power cycles	5
	5	I am able to explain the basic principles of energy management, storage and economics of power generation.	5
	6	I am able to explain the fundamentals of renewable energy systems	5
	7	Any suggestions for the improvement of course curriculum	No
ELECTIVE-V (402050A)	1	I am able to understand the important of quality and quality tools in various fields	5
	2	I am able to form the control chart and solve the problems on it also able to solve process capability problem	5
	3	I am able to understand the concept of reliability	5
	4	I am able to evaluate System reliability	5
	5	I am able to understand various failure modes and create fault tree diagram.	5
	6	I am able to knows the concept of reliability centered maintenance and apply reliability tests	5
	7	Any suggestions for the improvement of course curriculum	No
ELECTIVE-V (402050B)	1	I am able to explain need of energy and energy management	5
	2	I am able to carry energy audit	5
	3	I am able to understand Energy conservation opportunities	5
	4	I am able to determine the performance of Thermal Utilities	5
	5	I am able to analyze performance of Electrical Utilities	5
	6	I am able to suggest the performance improvement opportunities	5
	7	Any suggestions for the improvement of course curriculum	No



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ELECTIVE-VI 402051B)	1	I am able to DESCRIBE the basic fundamentals, needs and scopes of renewable energy systems	5
	2	I am able to EXPLAIN performance aspects of flat and concentric solar collectors along with application	5
	3	I am able to DESIGN solar photovoltaic system for residential applications	5
	4	I am able to DESIGN AND ANALYSIS of wind energy conversion system	5
	5	I am able to APPLY Installation practices of Wind and Solar Photovoltaic Systems for grid connection.	5
	6	I am able to DETERMINE performance parameters of bio-energy conversion systems	5
	7	Any suggestions for the improvement of course curriculum	No
ELECTIVE-VI 402051E)	1	I am able to UNDERSTAND the basics related to e-vehicle	5
	2	I am able to CLASSIFY the different hybrid vehicles	5
	3	I am able to IDENTIFY and EVALUATE the Prime Movers, Energy Storage and Controllers	5
	4	I am able to DISCOVER and CATAGORIZE the Electric Vehicle Configuration with respect to Propulsion, Power distribution and Drive-Train Topologies	5
	5	I am able to DEVELOP body frame with appropriate suspension system and TESTING of for e-Vehicles	5
	6	I am able to CLASSIFY and EVALUATE Battery Charging techniques and managemen	5
	7	Any suggestions for the improvement of course curriculum	No
MSAA	1	I am able to DEVELOP an understanding of the Systems Engineering Process and the range of factors that influence the product need, problem-specific information collection, Problem Definition, Task Specification	5
	2	I am able to ILLUSTRATE the concepts and USE the developed skill-set of use of computational tools (FEA, CFD, MBD, FSI, CAE) to automate the complete product development process	5
	3	I am able to EVALUATE the knowledge of new developments and innovations in technological system	5
	4	I am able to APPRAISE how technologies have transformed people's lives and can be used to SOLVE challenges associated with climate change, efficient energy use, security, health	5
	5	I am able to PRIORITIZE the concept of quality and standards, including systems reliability, safety & fitness for the intended purpose	5
	6	I am able to INVENT yourself to face the challenges of future technologies and their associated Problems.	5
	7	Any suggestions for the improvement of course curriculum	No
PROJECT STAGE-III	1	I am able to implement suitable methodology to solve the societal Problems pertaining to the mechanical engineering by utilizing the knowledge gained during the curriculum	5
	2	I am able to Create the sustainable, economic and environmental friendly solution to the considered problem and analyze the same by effective utilization of relevant tools and techniques.	5
	3	I am able to develop managerial skills and work as a team for obtaining the solution of mechanical or Interdisciplinary engineering related problems within stipulated time, following morality and ethics	5
	4	I am able to CONCEPTUALIZE a novel idea / technique into a product and DEMONSTRATE the final product for Functionality, Designability, and Manufacturability	5
	5	Any suggestions for the improvement of course curriculum	No
AUDIT COURSE-VII	1	I am able to Apply the concept of operations management in manufacturing and service sector	5
	2	I am able to develop production schedules and plan resources (material and machine) required for production	5
	3	I am able to Design maintenance schedules in manufacturing units	5
	4	I am able to Apply the concepts of purchase, stores and inventory management and analyze and evaluate material requirement decisions	5
	5	I am able to Analyze performance related to productivity and will be able to conduct basic industrial engineering study on men and machines	5
	6	I am able to Analyze and evaluate various facility alternatives and their capacity decisions, develop a balanced line of production & scheduling and sequencing techniques in operation environments	5
	7	Any suggestions for the improvement of course curriculum	No
SUGGESTION	1	Do you want to make any comment on Outcome Based Education?	No
	2	Any other Suggestions for the improvement in the course Curriculum	No.
If any suggesstion in curriculum	Excellent Curriculum.		



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COURSE EXIT SURVEY

Academic Year :- 2022-23

SEM - I

Name of Student : Ketan Keshav Ambede

ROLL NO - 2611004

Class and Branch of Student : TE MECHANICAL

DIV - A

Kindly provide genuine response for the following question which will be helpful for the continuous quality improvement of course

Note : Evaluation attribute =

5. Strongly agree 4. Moderately Agree 3. Slightly agree 2. Neutral 1. Strongly disagree

Subject	CES QN	Questions	Evaluation
NSM	1	I am able to solve system of equations using direct and iterative numerical methods.	
	2	I am able to estimate solutions for differential equations using numerical techniques.	
	3	I am able to develop solution for engineering applications with numerical integration	
	4	I can design and create models using a curve fitting and regression analysis	
	5	I can apply statistical technique for quantitative data analysis	
	6	I can demonstrate the data using the concepts of probability and linear algebra.	
	7	Any suggestions for the improvement of course curriculum	
HMT	1	I am able to analyze & apply the modes of heat transfer equations for one dimensional thermal system.	
	2	I am able to design a thermal system considering fins, thermal insulation and & Transient heat conduction	
	3	I learned principles of convection, condensation & boiling and evaluate the heat transfer rate in natural and forced convection	
	4	I am able to analyze heat transfer by radiation.	
	5	I am able to analyze the rate of mass transfer using Fick's Law of Diffusion and Explain mass diffusion in different coordinate systems	
	6	I am able to design heat transfer equipments and analyze it's performance	
	7	Any suggestions for the improvement of course curriculum	
DOM	1	I am able to design and analyze the cotter and knuckle Joints, levers and components subjected to eccentric loading	
	2	I am able to design shafts, keys and couplings under static loading conditions	
	3	I am able to analyze different stresses in power screws and apply those in the procedure to design screw jack.	
	4	I am able to evaluate dimensions of machine components under fluctuating loads	
	5	I am able to evaluate and interpret the stress developed on the different type of welded and threaded joints	
	6	I am able to apply the design and development procedure for different types of springs	
	7	Any suggestions for the improvement of course curriculum	
MTRX	1	I am able to define key elements of mechatronics, principle of sensor and its characteristics	
	2	I am able to use concept of signal processing and make use of interfacing systems such as ADC, DAC, Digital I/O.	
	3	I can determine the transfer function by using block diagram reduction technique	
	4	I can evaluate poles and zero, frequency domain parameter for mathematical modeling for mechanical system	
	5	I am able to apply the concept of different controller modes to an industrial application.	
	6	I can develop the ladder programming for industrial application.	
	7	Any suggestions for the improvement of course curriculum	



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ELECTIVE-I (302045-A)	1	I am able to analyze the effect of friction in metal forming deep drawing and identification of surface defects and their remedies in deep drawing operations	
	2	I can classify various special forming processes and its applications.	
	3	I am able to analyze and identify the weldability of various materials	
	4	I am able to analyze and identify different solid state welding processes and its applications	
	5	I can identify the suitable advanced welding process for various applications.	
	6	I can identify the role of sustainable manufacturing in manufacturing industry	
	7	Any suggestions for the improvement of course curriculum	
ELECTIVE-I (302045-B)	1	I am able to apply the theory of metal cutting for effective machining.	
	2	I can explain the gear and thread manufacturing processes.	
	3	I can explain the working of different machining processes.	
	4	I can explain and design Jigs and Fixtures for different components	
	5	I am able to apply process planning fundamentals to production processes	
	6	I am able to apply CNC Program for various machining processes.	
	7	Any suggestions for the improvement of course curriculum	
DML	1	I can develop components using conventional machines, CNC machines and Additive Manufacturing Techniques	
	2	I am able to analyze cutting tool parameters for machining assigned job	
	3	I can demonstrate simulation of manufacturing process using Digital Manufacturing Tools	
	4	I am able to select and design jigs and fixtures for a given component	
	5	I can demonstrate different parameters for CNC retrofitting and reconditioning	
	6	Any suggestions for the improvement of course curriculum	
SKILL DEV	1	I am able to apply and demonstrate procedure of assembly & disassembly of various machines.	
	2	I am able to design and develop working/model of machine parts or any new product	
	3	I am able to evaluate fault with diagnosis on the machines, machine tools and home appliances.	
	4	I am able to identify and demonstrate the various activities performed in an industry such as maintenance, design of components, material selection.	
	5	Any suggestions for the improvement of course curriculum	
AUDIT COURSE-V	1	I understood Entrepreneurship, intellectual property and relation between them	
	2	I understood concept of innovation and its types	
	3	I learned the rules, rights and responsibilities of holder of Patent, Copyright and Trademark	
	4	I am aware about features, functions, rules and regulations of industrial design	
	5	I am able to understand about forms of IP and its rules and responsibilities	
	6	I am aware about various government policies for Entrepreneurship	
	7	Any suggestions for the improvement of course curriculum	
SUGGESTION	1	Do you want to make any comment on Outcome Based Education?	
	2	Any other Suggestions for the improvement in the course Curriculum	
If any suggestion in curriculum			



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COURSE EXIT SURVEY

Academic Year :- 2022-23

SEM - II

Name of Student : Ketan Ketav Ambede

ROLL NO - B611004

Class and Branch of Student : TE MECHANICAL

DIV - A

Kindly provide genuine response for the following question which will be helpful for the continuous quality improvement of course
Note : Evaluation attribute =

5. Strongly agree 4. Moderately Agree 3. Slightly agree 2. Neutral 1. Strongly disagree

Subject	CES QN	Questions	Evaluation
AIML	1	I can demonstrate fundamentals of artificial intelligence and machine learning.	
	2	I am able to apply feature extraction and selection techniques	
	3	I am able to apply machine learning algorithms for classification and regression problems	
	4	I can develop a machine learning model	
	5	I understood the concepts of reinforced and deep learning	
	6	I can simulate machine learning model in mechanical engineering problems	
	7	Any suggestions for the improvement of course curriculum	
CAE	1	I am able to find shape function in finite element formulation	
	2	I am able to apply meshing for FEA	
	3	I am able to apply Material properties & boundary condition to solve 1D & 2D problem	
	4	I am able to apply numerical methods for different type of analysis	
	5	I am able to solve non-linear and dynamic analysis	
	6	I am able to generate result from any analysis software	
	7	Any suggestions for the improvement of course curriculum	
DOTS	1	I am able to design spur & helical gear for industrial applications	
	2	I am able to design bevel & worm gear for industrial applications	
	3	I am able to select & design rolling, sliding contact bearing	
	4	I am able to design clutches and brakes for automotive and industrial machinery sector	
	5	I am able to design of M/C tool gear box for different applications	
	6	I understood modes of operation, degree of hybridization and allied terms associated with hybrid electric vehicles	
	7	Any suggestions for the improvement of course curriculum	
ELECTIVE-II (302052A)	1	I understood different composites materials	
	2	I understood types of polymer matrix composites and its fabrication processes	
	3	I understood types of metal matrix composites & its fabrication processes and evaluate effect of reinforcement	
	4	I am able to estimate geometrical aspects and evaluate mechanical properties of composites	
	5	I can select appropriate testing and inspection method for composite materials.	
	6	I can select composites materials for various application	
	7	Any suggestions for the improvement of course curriculum	



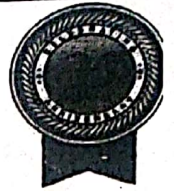
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ELECTIVE-II (302050 B)	1	I am able to demonstrate Surface Engineering, wear mechanism and principle of surface degradation	
	2	I am able to analyze and select corrosion prevention methods	
	3	I am able to demonstrate the role of surface engineering to modify/improve the materials surface properties	
	4	I am able to select the suitable surface heat treatments techniques to improve the surface properties	
	5	I am able to apply the suitable surface coating technique to modify surface properties	
	6	I am able to analyze and evaluate coating defects and remedies and examine the surface morphology of materials	
	7	Any suggestions for the improvement of course curriculum	
ML	1	I am able to evaluate errors in measuring instruments and reduce uncertainty in the measurement	
	2	I can analyze strain measurement parameters by taking modulus of elasticity in consideration to acknowledge its usage in failure detection and force variations	
	3	I am able to examine surface morphology	
	4	I am able to measure the dimensional accuracy using Comparator and limit gauges and appraise their usage in actual measurement or comparison with standards set to reduce measurement lead time	
	5	I am able to perform Testing of Flow rate, speed and temperature measurements and their effect on performance in machines and mechanisms like hydraulic or pneumatic trainers, lathe machine etc. to increase repeatability and	
	6	I am aware of opportunities of entrepreneurship/business in various sectors of metrology	
	7	Any suggestions for the improvement of course curriculum	
FP&CL	1	I understood working principle of components used in hydraulic and pneumatic systems	
	2	I am able to identify various applications of hydraulic and pneumatic systems	
	3	I am able to select an appropriate component required for hydraulic and pneumatic systems using manufactures' catalogues	
	4	I can simulate & analyse various hydraulic and pneumatic systems for industrial/mobile applications	
	5	I am able to a hydraulic and pneumatic system for the industrial applications	
	6	I am able to design & demonstrate various IoT, PLC based controlling system using hydraulics and pneumatics	
	7	Any suggestions for the improvement of course curriculum	
INTERNSHIP & MINI PROJECT	1	I understood company organizational structure, products, services, processes, departments, customers, vendors etc.	
	2	I am able to apply theoretical knowledge and concepts to solve assignments given by company mentor	
	3	I am able to identify, formulate and analyze existing engineering problems in industry related to design, manufacturing, procurement, quality, maintenance, research, new product development etc	
	4	I am able to find solutions for assigned engineering problems considering health, safety, legal and environmental standards/requirements	
	5	I understood and can demonstrate effective verbal/written communication, listening and documentation skills.	
	6	I can demonstrate individual responsibility, participation in teams and management of multiple assignments/projects	
	7	I can develop and demonstrate professional work habits, attitudes, ethics and behavior	
	8	Any suggestions for the improvement of course curriculum	
AUDIT COURSE-VI	1	I understood Management Information system, Database management system, and Strategic Enterprise System	
	2	I understood different Operational Support Systems and able to analyze IT strategy & balanced score card	
	3	I understood Mobile, E-Commerce and latest Emerging Technologies	
	4	I learned Knowledge Management System, various Social, ethical and security Issues in MIS	
	5	Any suggestions for the improvement of course curriculum	
SUGGESTION	1	Do you want to make any comment on Outcome Based Education?	
	2	Any other Suggestions for the improvement in the course Curriculum	
If any suggestion in curriculum			



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COURSE EXIT SURVEY

Academic Year :- 2021-22

SEM -I

Name of Student : Ketan Keshav Ambede

ROLL NO - B611004

Class and Branch of Student : SE MECHANICAL

DIV - A

Kindly provide genuine response for the following question which will be helpful for the continuous quality improvement of course

Note : Evaluation attribute =

5. Strongly agree 4. Moderately Agree 3. Slightly agree 2. Neutral 1. Strongly disagree

Subject	CES ON	Questions	Evaluation
SM	1	I am able to Explain types of loads, Stress-strain diagram for ductile and brittle materials and Determine stresses and strains	
	2	I am able to Draw Shear force and bending moment diagram for transverse loading and supports.	
	3	I am able to Compute the bending stresses, shear stresses and slope & deflection on a beam	
	4	I am able to Explain Torsion on circular shafts, Thin-Walled Tubes and Calculate torsional shear stress in shaft and buckling of columns	
	5	I am able to Apply the concept of principal stresses and theories of failure to determine stresses on a 2-D element.	
	6	I am able to Apply the concepts of SFD & BMD, torsion and principal stresses to solve combined loading application based problems	
	7	Any suggestions for the improvement of course curriculum	
SMD	1	I understood fundamentals of 3D Modeling, CAD system, Model viewing in Product Lifecycle management	
	2	I am able to apply the knowledge of Curves & Surfaces to create complex solid geometry and create reverse Engineering of surface/solid modeling using Point Cloud Data	
	3	I am able to create & analyze solid models and assemblies using modeling technique by applying design principles	
	4	I am able to apply geometric transformations to simple 2D objects	
	5	I am able to apply CAD model data for CAD based engineering applications viz. production drawings, 3D printing, FEA, CFD, MBD, CAE, CAM	
	6	I am able to apply PMI & MBD approach for communication	
	7	Any suggestions for the improvement of course curriculum	
ET	1	I can describe fundamentals of Thermodynamics and apply first law of thermodynamics to flow and non-flow process.	
	2	I am able to apply the gas laws for thermodynamic processes and Evaluate the system performance by Second Law of Thermodynamics	
	3	I am able to apply entropy, available and non available energy for an Open and Closed System	
	4	I can determine the properties of steam and their effect on performance of vapour power cycle.	
	5	I am able to analyse the fuel combustion process and products of combustion.	
	6	I am able to evaluate the performance parameters of Steam generators and ANALYZE the Boiler Draught parameters	
	7	Any suggestions for the improvement of course curriculum	



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EMM	1	I am able to compare crystal structures, Estimate lattice parameters & Material Properties and Describe the Deformation of Materials	
	2	I am able to analyze mechanical properties using destructive and non-destructive testing of materials and Examine surface morphology using Microscopic and Macroscopy Techniques	
	3	I am able to examine Solid solutions, Estimate Solidification parameters and Describe Phase Diagrams and Iron-Carbon Diagram	
	4	I am able to describe austenite transformation in steel and Apply heat treatment processes and Surface Hardening methods to different materials	
	5	I am able to describe Ferrous Materials and Establish it's Microstructure and property relationship	
	6	I am able to describe and select appropriate Non-Ferrous Materials & recent material for industrial applications, Establish it's microstructure and property relationship	
	7	Any suggestions for the improvement of course curriculum	
EEE	1	I am able to apply programming concepts and understood role of Microprocessor and Microcontroller in embedded systems.	
	2	I can develop interfacing of different types of sensors and other hardware devices with Atmega328 based Arduino Board	
	3	I understood the operation of DC motor, its speed control methods and braking	
	4	I can distinguish between types of three phase induction motor and its characteristic features	
	5	I can explain emerging technology of Electric Vehicle (EV) and its modular subsystems	
	6	I can choose energy storage devices and electrical drives for EVs	
	7	Any suggestions for the improvement of course curriculum	
GD&TL	1	I can select appropriate IS and ASME standards for drawing	
	2	I can create, read and analyze the industrial drawings of the parts and assembly with appropriate tolerances, fits, Surface finish and Welding symbols	
	3	I can select an appropriate manufacturing process using DFM, DFA, etc.	
	4	Any suggestions for the improvement of course curriculum	
AUDIT COURSE III	1	I understood importance of soft skills required for retaining career growth.	
	2	I Understood and able to develop effective communication required in professional environment	
	3	I can demonstrate presentation, interview and group discussion skills	
	4	Any suggestions for the improvement of course curriculum	
SUGGESTION	1	Do you want to make any comment on Outcome Based Education?	
	2	Any other Suggestions for the improvement in the course Curriculum	
If any sugesstion in curriculum			



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COURSE EXIT SURVEY

Academic Year :- 2022-23

SEM -II

Name of Student : Ketan Keshav Ambede

ROLL NO - BG11004

Class and Branch of Student : SE MECHANICAL

DIV - A

Kindly provide genuine response for the following question which will be helpful for the continuous quality improvement of course

Note : Evaluation attribute =

5. Strongly agree 4. Moderately Agree 3. Slightly agree 2. Neutral 1. Strongly disagree

Subject	CES ON	Questions	Evaluation
EM-III	1	I am able to apply the knowledge of higher order linear differential equations to model and analyze the mass spring systems.	
	2	I understood the concepts of Laplace transform and Fourier transform and apply it to solve the models of vibration theory, heat transfer	
	3	I am able to interpret and analyze the data using statistical tools and techniques	
	4	I am able to interpret and analyze the data using probability techniques.	
	5	I am able to apply Vector Integral Calculus to Analyze Fluid Mechanics problems	
	6	I am able to sing analyze the problems related to vibration of string and heat flow using partial differential equations	
	7	Any suggestions for the improvement of course curriculum	
KOM	1	I am able to apply kinematic analysis to simple mechanisms	
	2	I am able to analyze velocity and acceleration in mechanisms by Analytical method	
	3	I am able to analyze velocity and acceleration in mechanisms by graphical method	
	4	I am able to Synthesize a four bar mechanism with analytical and graphical methods	
	5	I am able to classify and illustrate gears and gear train	
	6	I am able to construct cam profile for given follower motion and explain transfer Mechanisms in Automation Systems	
	7	Any suggestions for the improvement of course curriculum	
AT	1	I am able to determine COP of refrigeration system and analyze psychrometric processes.	
	2	I am able to describe the basics of engine terminology, air standard, fuel air and actual cycles.	
	3	I am able to describe the factors affecting the combustion performance of SI and CI engines and discuss the factors affecting knocking and detonation.	
	4	I am able to analyze the performance parameters for Engine and Describe the effect of engine emissions on environment and various emission control methods.	
	5	I am able to describe the Engine systems and alternative fuels	
	6	I am able to explain the construction and working reciprocating and rotary air compressors and Evaluate the performance of reciprocating compressors.	
	7	Any suggestions for the improvement of course curriculum	
FM	1	I am able to calculate various properties of fluid	
	2	I am able to apply the laws of fluid statics for the surfaces immersed in the fluid and understand the concept of buoyancy	
	3	I am able to categorize types of fluid flow and Evaluate terms associated in fluid kinematics	
	4	I am able to apply principles of fluid dynamics for flow measurement	
	5	I am able to estimate major and minor losses in internal flows and determine boundary layer formation over an external surface	
	6	I am able to construct mathematical correlation considering dimensionless parameters and Estimate the performance of prototype using model laws	
	7	Any suggestions for the improvement of course curriculum	



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MP	1	I am able to design and analyze casting processes and describe its defect	
	2	I am able to explain metal forming processes and evaluate load required for rolling	
	3	<u>I am able to demonstrate press working operations and apply the basic principles to design dies and tools for forming and shearing operations</u>	
	4	I am able to explain different welding processes and Evaluate welding parameters	
	5	I am able to compare thermoplastics and thermosetting and Explain polymer processing techniques	
	6	I am able to categorize composites and describe the composite manufacturing processes	
	7	Any suggestions for the improvement of course curriculum	
PROJECT BASED LEARNING-II	1	I am able to identify the real-world problem (possibly of interdisciplinary nature) through a rigorous literature survey and formulate / set relevant aims and objectives	
	2	I am able to analyze the results and arrive at valid conclusions	
	3	I can provide suitable solution based on the fundamentals of mechanical engineering by possibly integration of previously acquired knowledge	
	4	I can contribute to society through proposed solutions by strictly following professional ethics and safety measures	
	5	I can use technology in proposed work and demonstrate learning in oral and written form	
	6	I am able to develop ability to work as an individual and as a team member.	
	7	Any suggestions for the improvement of course curriculum	
MACHINE SHOP	1	I am able to Illustrate casting and/or metal forming processes in industry	
	2	I am able to perform TIG/ MIG/ Resistance/Gas welding technique	
	3	I am able to make Fibre-reinforced Composites by hand lay-up process or spray lay-up techniques	
	4	I can create plastic component using manufacturing process	
	5	I am able to apply grinding process for surface machining	
	6	I am able to demonstrate indexing mechanism and creat a spur gear using milling machine	
	7	Any suggestions for the improvement of course curriculum	
AUDIT COURSE IV	1	I understood business/professional/personal/Corporate Ethics	
	2	I can apply business/professional/personal/Corporate EthicS	
	3	I understood Patents, Copy-rights, Intellectual Property rights, Trade Marks, and Ethical Value System	
	4	Any suggestions for the improvement of course curriculum	
SUGGESTION	1	Do you want to make any comment on Outcome Based Education?	
	2	Any other Suggestions for the improvement in the course Curriculum	
If any sugesstion in curriculum			