



AMAL JYOTHI

COLLEGE OF ENGINEERING

KANJIRAPPALLY, KOTTAYAM, INDIA 686 518

AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, KERALA



NAAC
NATIONAL ASSESSMENT AND
ACCREDITATION COUNCIL

| **'A' Grade**

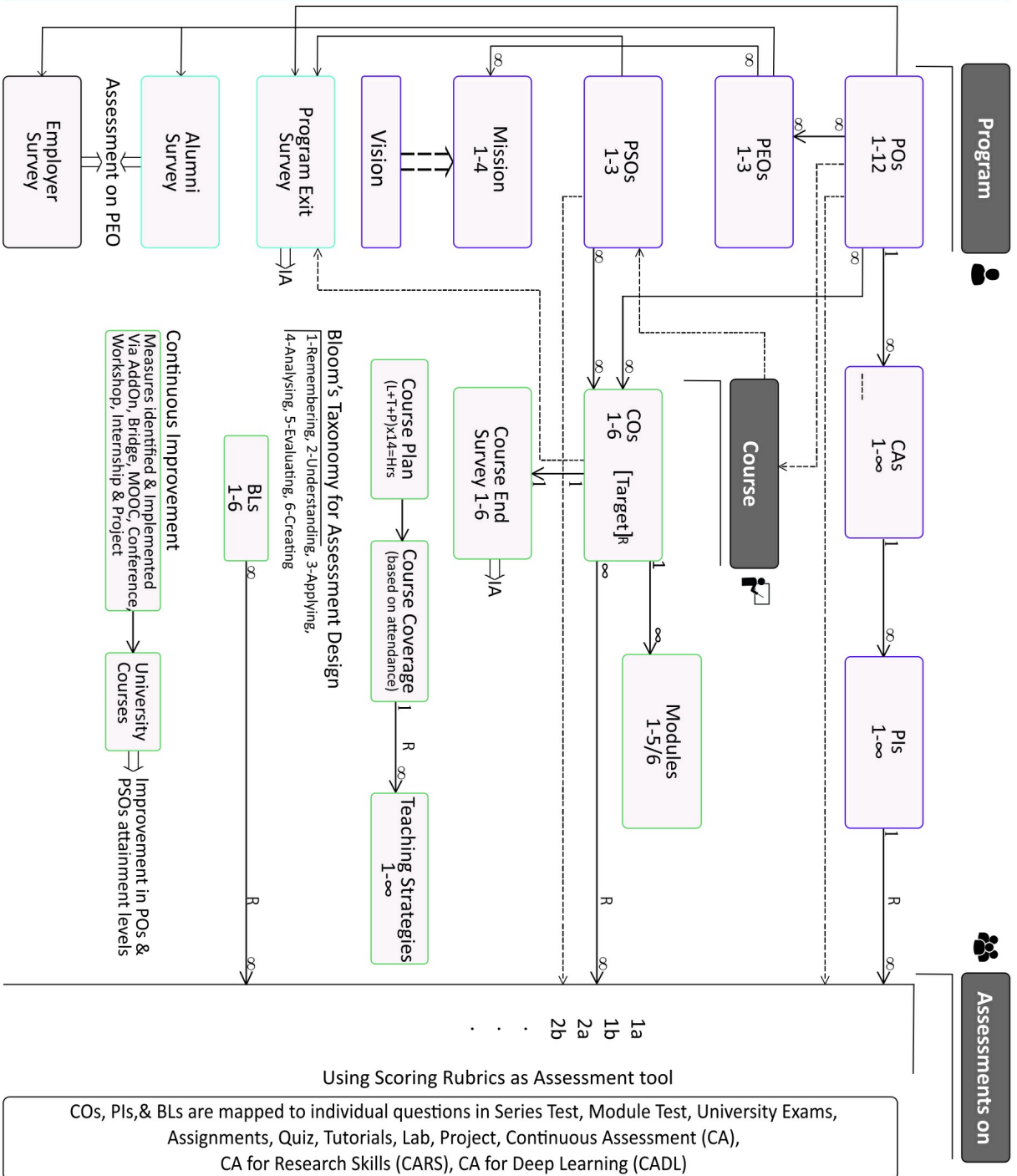
MECHANICAL ENGINEERING AUTOMOBILE

Outcome Based Education Scheme

CONTENTS

1. OBE IMPLEMENTATION PLAN
2. VISION
3. MISSION
4. PROGRAM OUTCOME (PO)
5. PROGRAM EDUCATIONAL OBJECTIVE (PEO)
6. PROGRAM SPECIFIC OUTCOME (PSO)
7. COMPETENCIES & PERFORMANCE INDICATORS (CA & PI)
8. BLOOM'S TAXONOMY FOR ASSESSMENT DESIGN
9. TEACHING - LEARNING STRATEGIES
10. PO-CA-PI MAPPING SUMMARY
11. PEO-PO MAPPING
12. PEO-MISSION MAPPING
13. PROGRAM EXIT SURVEY
14. ALUMNI SURVEY
15. EMPLOYER SURVEY
16. COURSE OUTCOMES
17. COURSE END SURVEY
18. CO- PO MAPPING
19. CO- PSO MAPPING
20. COURSE – PO MAPPING
21. COURSE – PSO MAPPING
22. CONTINUOUS IMPROVEMENT IMPLEMENTED

OUTCOME BASED EDUCATION FRAMEWORK (OBE) IN ACADEMIC ENTERPRISE SOLUTIONS



Weighted Average (WA)

$$(n1 \cdot 1 + n2 \cdot 2 + n3 \cdot 3) / (n1 + n2 + n3)$$

n : No of students, multiplied with 3 scale value

Direct Assessment of CO

$$(33.33 \cdot \text{Internals WA} + 66.66 \cdot \text{Externals WA}) / 100$$

Direct Assessment of PO / PSO

I. Course1.CO1-PO1 | PSO1 Score=CO1 Attainment Score * CO1-PO1 | PSO1 Mpscore.

II. DA of PO1 | PSO1 = [Course1.CO1-01 | PSO1 Score + Course1.CO2-PO1 | PSO1 Score + ... + nthCourse.nthCO-PO1 | PSO1 Score] / [Course1.CO1-PO1 | PSO1 Mpscore + Course1.CO2-PO1 | PSO1 Mpscore + ... + nthCourse.nthCO-PO1 | PSO1 Mpscore]

Indirect Assessment for CO / PO / PSO

Weighted Average on 3-point scale from Course End Survey -> IA for CO Program Exit Survey -> IA for PO | PSO

CO / PO / PSO Attainment

$$(80 \cdot \text{DA} + 20 \cdot \text{IA}) / 100$$

DA: Direct Assessment, IA : Indirect Assessment

PO Program Outcome
PEO Program Educational Objective
PSO Program Specific Outcome
CAS Competencies to be Attained
PIs Performance Indicators
COs Course Outcomes | R Repeated Yearly
BLs Blooms Taxonomy Levels
Mapping ---> Auto Mapping
Correlation
3-Substantial (High)/2-Moderate(Medium)/1-Slight (Low)

VISION

Generate productive engineers in the field of Automobile Engineering who are competent in contemporary industrial and research scenarios in the field.

MISSION

- Provide exposure to students in latest developments in the field of Automobile Engineering.
- Generate socially committed teams who aim at obtaining solutions to problems faced by society in the transportation area
- Provide a firm platform for research and development activities and industry-institute interactions, which will provide professional advancement for students in the area of their specialization
- Enlighten the students on the recent challenges and issues faced by the society in the field of their specialization and come up with viable solutions

PROGRAM OUTCOME

Sl.No.	Outcome
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	Design/development of solutions: 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.
PO4	Conduct investigations of complex problems: 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.
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions through appropriate reports, designs, presentations and instructions
PO11	Project management and finance: 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.
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM EDUCATIONAL OBJECTIVE

Sl.No.	Objective
PEO1	Be competent engineers who shall provide successful solutions to problems faced by the manufacturing sector in automobile and allied industries
PEO2	Be a part of a professionally ethical society who shall provide services to common man in a positive and helpful manner
PEO3	Be successful entrepreneurs who can identify and provide best solutions to solve societal issues
PEO4	Aim for continuous unlearn and relearn practices to improve their knowledge and competence, along with the development of the Organization they serve

PROGRAM SPECIFIC OUTCOME

Sl.No.	Outcome
PSO1	Implement theoretical and practical knowledge to solve real life problems related to automobile engineering and transportation
PSO2	Provide research base to enhance and apply their knowledge and competence for development of novel products for the automobile industry
PSO3	Be team players to manage men, materials and machinery in an orderly, energy efficient and eco-friendly manner
PSO4	Identify problems related to automobile and transportation engineering and provide solutions based on appropriate analytical methods

COMPETENCIES & PERFORMANCE INDICATORS

1.1 Demonstrate competence in mathematical modelling

- 1.1.1 Apply mathematical techniques such as calculus, linear algebra. and statistics modelling to solve problems
- 1.1.2 Apply advanced mathematical techniques to model and solve engineering problems

1.2 Demonstrate competence in basic sciences

- 1.2.1 Apply laws of natural science to an engineering problem

1.3 Demonstrate competence in engineering fundamentals

- 1.3.1 Apply fundamental engineering concepts to solve engineering problems

1.4 Demonstrate competence in specialized engineering knowledge to the program

- 1.4.1 Apply engineering concepts to solve engineering problems

2.1 Demonstrate an ability to identify and formulate complex engineering problem

- 2.1.1 Articulate problem statements and identify objectives
- 2.1.2 Identify engineering systems, variables, and parameters to solve the problems
- 2.1.3 Identify the mathematical, engineering and other relevant knowledge that applies to a given problem

2.2 Demonstrate an ability to formulate a solution plan and methodology for an engineering problem

- 2.2.1 Reframe complex problems into Interconnected sub-problems
- 2.2.2 Identify assemble and evaluate information and resources
- 2.2.3 Identify existing processes/solution methods for solving the problem including forming justified approximations and assumptions
- 2.2.4 Compare and contrast alternative solution processes to select the best process

2.3 Demonstrate an ability to formulate and interpret a model

- 2.3.1 Combine scientific principles and engineering concepts to formulate model's (mathematical or otherwise) al a system or process that is appropriate in terms of applicability and required accuracy
- 2.3.2 Identify assumptions (mathematical and physical) necessary to allow modeling of a system at the level of accuracy required

2.4 Demonstrate an ability to execute a solution process and analyze results

- 2.4.1 Apply engineering mathematics and computations to solve mathematical models
- 2.4.2 Produce and validate results through skillful use of contemporary engineering tools and models
- 2.4.3 Identify sources of error in the solution process, and limitations of the solution
- 2.4.4 Extract desired understanding and conclusions consistent with objectives and limitations of the analysis

3.1 Demonstrate an ability to define a complex open-ended problem in engineering terms

- 3.1.1 Recognize that need analysis is key to good problem definition
- 3.1.2 Elicit and document, engineering requirements from stakeholders
- 3.1.3 Synthesize engineering requirements from a review of the state-of-the-art
- 3.1.4 Extract engineering requirements from relevant engineering Codes and Standards such as ASME, ASTM, BIS, ISO and ASHRAE
- 3.1.5 Explore and synthesize engineering requirements considering health, safety risks, environmental cultural and societal issues
- 3.1.6 Determine design objectives, functional requirements and arrive at specifications

3.2 Demonstrate an ability to generate a diverse set of alternative design solutions

- 3.2.1 Apply formal idea generation tools to develop multiple engineering design solutions
- 3.2.2 Build models/prototypes to develop a diverse set of design solutions
- 3.2.3 Identify suitable criteria for the evaluation of alternative design solutions

3.3 Demonstrate an ability to select an optimal design scheme for further development

- 3.3.1 Apply formal decision-making tools to select optimal engineering design solutions for further development
- 3.3.2 Consult with domain experts and stakeholders to select candidate engineering design solution for further development

3.4 Demonstrate an ability to advance an engineering design to defined end state

- 3.4.1 Refine a conceptual design into a detailed design within the existing constraints of the resources)
- 3.4.2 Generate information through appropriate tests to improve or revise the design

4.1 Demonstrate an ability to conduct investigations of technical issues consistent with their level of knowledge system and understanding

- 4.1.1 Define a problem, its scope and importance for purposes of investigation
- 4.1.2 Examine the relevant methods, tools and techniques of experiment design calibration, data acquisition, analysis and presentation
- 4.1.3 Apply appropriate instrumentation and/or software tools to make measurements of physical quantities
- 4.1.4 Establish a relationship between measured data and underlying physical principles

4.2 Demonstrate an ability to design experiments to solve open-ended problems

- 4.2.1 Design and develop an experimental approach specify appropriate equipment and procedures
- 4.2.2 Understand the importance of the statistical design of experiments and choose an appropriate experimental design plan based on the study objectives

4.3 Demonstrate an ability to analyze data and reach a valid conclusion

- 4.3.1 Use appropriate procedures, tools and techniques to conduct experiments and collect data
- 4.3.2 Analyze data for trends and correlations, stating possible errors and limitations
- 4.3.3 Represent data (in tabular and/or graphical forms) so as to facilitate analysis and explanation of the data, and drawing of conclusions
- 4.3.4 Synthesize information and knowledge about the problem from the raw data to reach appropriate conclusions

5.1 Demonstrate an ability to identify/ create modern engineering tools, techniques and resources

5.1.1 Identify modern engineering tools such as computer-aided drafting, modeling and analysis techniques and resources for engineering activities

5.1.2 Create adapt modify/extend tools and techniques to solve engineering problems

5.2 Demonstrate an ability to select and apply discipline-specific tools, techniques and resources

5.2.1 Identify the strengths and limitations of tools for (i) acquiring information (ii) modeling and simulating, (iii) monitoring system performance, and (iv) creating engineering designs.

5.2.2 Demonstrate proficiency in using discipline-specific tools

5.3 Demonstrate an ability to evaluate the suitability and limitations of tools used to solve an engineering problem

5.3.1 Discuss limitations and validate tools, techniques and resources

5.3.2 Verify the credibility of results from tool use with reference to the accuracy and limitations, and the assumptions inherent in their use

6.1 Demonstrate an ability to describe engineering roles in a broader context e.g. pertaining to the environment, safety, health, legal and public welfare

6.1.1 Identify and describe various engineering roles: particularly as pertains to , protection of the public and public interest at the global, regional and local level

6.2 Demonstrate an understanding of professional engineering regulations, legislation and standards

6.2.1 Interpret legislation, regulations, codes, and standards relevant to your discipline and explain its contribution to the protection of the public

7.1 Demonstrate an understanding of the impact of engineering and industrial practices on social, environmental and in economic contexts

7.1.1 Identity risks/impacts in the life-cycle of an engineering product or activity

7.1.2 Understand the relationship between the technical, socio-economic and environmental dimensions of sustainability

7.2 Demonstrate an ability to apply principles of sustainable design and development

7.2.1 Describe management techniques tor sustainable development

7.2.2 Apply principles of preventive engineering and sustainable development to an engineering activity or product relevant to the discipline

8.1 Demonstrate an ability to recognize ethical dilemmas

8.1.1 Identity situations of unethical professional conduct and propose ethical alternatives

8.2 Demonstrate an ability to apply the Code of Ethics

8.2.1 Identity tenets of the ASME professional code of ethics

8.2.2 Examine and apply moral & ethical principles to known case studies

9.1 Demonstrate an ability to form a team and define a role for each member

9.1.1 Recognize a variety of working and learning preferences, appreciate the value of diversity on a team

9.1.2 Implement the norms of practice (e.g rules, roles, charters, agendas, etc.) of effective team work, to accomplish a goal.

9.2 Demonstrate effective individual and team operations communication, problem-solving, conflict resolution and leadership skills

- 9.2.1 Demonstrate effective communication, problem-solving conflict resolution and leadership skills
- 9.2.2 Treat other team members respectfully
- 9.2.3 Listen to other members
- 9.2.4 Maintain composure in difficult situations

9.3 Demonstrate success in a team-based project

- 9.3.1 Present results as a team with smooth integration of contributions from all Individual efforts

10.1 Demonstrate an ability to comprehend technical literature and document project work

- 10.1.1 Read, understand and interpret technical and non-technical information
- 10.1.2 Produce clear, well-constructed and well-supported written engineering documents
- 10.1.3 Create flow in a document or presentation - a logical progression of ideas so that the main point is clear

10.2 Demonstrate competence in listening, speaking, and presentation

- 10.2.1 Listen to and comprehend information Instructions and viewpoints of others
- 10.2.2 Deliver effective oral presentations to technical and non-technical audiences

10.3 Demonstrate the ability to integrate different modes of communication

- 10.3.1 Create engineering-standard figures, reports and drawings to complement writing and presentations
- 10.3.2 Use a variety of media effectively to convey a message in a document or a presentation

11.1 Demonstrate an ability to evaluate the Economic and financial performance of an engineering activity

- 11.1.1 Describe various economic and financial casts/benefits of an engineering activity
- 11.1.2 Analyze different forms of financial statements to evaluate the financial status of an engineering project

11.2 Demonstrate an ability to compare and contrast the costs/benefits of alternate proposals for an engineering activity

- 11.2.1 Analyze and select the most appropriate proposal based on economic and financial considerations

11.3 Demonstrate an ability to plan/manage an engineering activity within time and budget constraints

- 11.3.1 Identify the tasks required to complete an engineering activity and the resources required to complete the tasks
- 11.3.2 Use project management tools to schedule an engineering project so it is completed on time and on budget

12.1 Demonstrate an ability to identity gaps in knowledge and a strategy to close these gaps

- 12.1.1 Describe the rationale for the requirement for continuing professional development
- 12.1.2 Identity deficiencies or gaps in knowledge and demonstrate an ability to Source information to close this gap

12.2 Demonstrate an ability to identify changing trends in engineering knowledge and practice

- 12.2.1 Identify historic points of technological advance in engineering that required practitioners to seek education in order to stay current
- 12.2.2 Recognize the need and be able to clearly explain why it is vitally important to keep current regarding new developments in your field

12.3 Demonstrate an ability to identify and access sources for new information

- 12.3.1 Source and comprehend technical literature and other credible sources of information
- 12.3.2 Analyze sourced technical and popular information for feasibility, viability, sustainability, etc.

BLOOM'S TAXONOMY FOR ASSESSMENT DESIGN

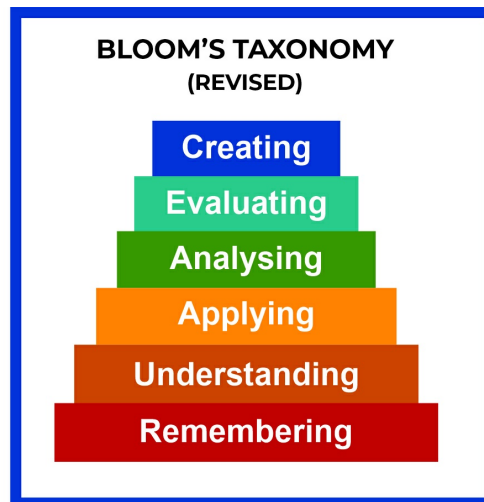


Fig. : Revised Bloom's Taxonomy

Level	Descriptor	Level of attainment
1	Remembering	Recalling from the memory of the previously learned material
2	Understanding	Explaining ideas or concepts
3	Applying	Using the information in another familiar situation
4	Analysing	Breaking information into the part to explore understandings and relationships
5	Evaluating	Justifying a decision or course of action
6	Creating	Generating new ideas, products or new ways of viewing things

Level	Skill Demonstrated	Question cues / Verbs for tests
1. Remember	<ul style="list-style-type: none"> Ability to recall of information like facts, conventions, definitions, jargon, technical terms, classifications, categories, and criteria ability to recall methodology and procedures, abstractions, principles, and theories in the field knowledge of dates, events, places mastery of subject matter 	list, define, tell, describe, recite, recall, identify, show, label, tabulate, quote, name, who, when, where
2. Understand	<ul style="list-style-type: none"> understanding information grasp meaning translate knowledge into new context interpret facts, compare, contrast order, group, infer causes predict consequences 	describe, explain, paraphrase, restate, associate, contrast, summarize, differentiate interpret, discuss
3. Apply	<ul style="list-style-type: none"> use information use methods, concepts, laws, theories in new situations solve problems using required skills or knowledge Demonstrating correct usage of a method or procedure 	calculate, predict, apply, solve, illustrate, use, demonstrate, determine, model, experiment, show, examine, modify
4. Analyse	<ul style="list-style-type: none"> break down a complex problem into parts Identify the relationships and interaction between the different parts of a complex problem identify the missing information, sometimes the redundant information and the contradictory information, if any 	classify, outline, break down, categorize, analyze, diagram, illustrate, infer, select
5. Evaluate	<ul style="list-style-type: none"> compare and discriminate between ideas assess value of theories, presentations make choices based on reasoned argument verify value of evidence recognize subjectivity use of definite criteria for judgments 	assess, decide, choose, rank, grade, test, measure, defend, recommend, convince, select, judge, support, conclude, argue, justify, compare, summarize, evaluate
6. Create	<ul style="list-style-type: none"> use old ideas to create new ones Combine parts to make (new) whole, generalize from given facts relate knowledge from several areas predict, draw conclusions 	design, formulate, build, invent, create, compose, generate, derive, modify, develop, integrate

TEACHING - LEARNING STRATEGIES

1. BLENDED LEARNING
2. BRAINSTORMING
3. CASE STUDY
4. COMPUTER AIDED PRESENTATION
5. COMPUTER LABS/LAPTOP INSTRUCTION
6. DEMONSTRATION
7. DIRECT INSTRUCTION
8. DISCOVERY LEARNING
9. DISCUSSION
10. DRILL AND PRACTICE
11. EXAMINATION
12. FLIPPED CLASS
13. FULLY ONLINE INSTRUCTION
14. GROUP ACTIVITIES
15. INQUIRY
16. LECTURE
17. MENTAL MODELING
18. MOOC ONLINE
19. PROJECT DEVELOPMENT
20. PROJECT PRESENTATION
21. QUESTION AND ANSWER
22. ROLE PLAY
23. SELF-LEARNING
24. SEMINAR
25. TUTORIAL
26. WEB-ENHANCED LEARNING

PO-CA-PI MAPPING SUMMARY

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
No CAs	4	4	4	3	3	2	2	2	3	3	3	3
No PIs	5	13	13	10	6	2	4	3	7	7	5	6

PEO-PO MAPPING

Correlation Levels: 1: Slight (Low), 2: Moderate (Medium), 3: Substantial (High), empty – no correlation

B.Tech-Mechanical Engineering(Automobile)

PEO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PEO1	2	3	3	3	2	3	2	2	2	2	2	3
PEO2	2	3	3	2	1	2	3	3	2	1	3	3
PEO3	2	2	2	3	2	1	2	2	2	2	1	2
PEO4	3	2	2	1	3		2	1	1	2	2	2

PEO-MISSION MAPPING

B.Tech-Mechanical Engineering(Automobile)

PEO/MISSION	MS1	MS2	MS3	MS4
PEO1	3	3	3	2
PEO2	2	3	2	2
PEO3		1	1	3
PEO4	3	2	3	2

PROGRAM EXIT SURVEY

B.Tech-Mechanical Engineering(Automobile)

Sl.No.	The extent to which engineering education has enhanced your ability to:
1	Apply the knowledge of mathematics, physics, chemistry and basic engineering to solve Engineering problems
	<i>Very Strong, Strong, Average, weak , Very Weak</i>
2	Identify, formulate and analyze complex Engineering problems and derive meaningful conclusions using principles of mathematics, science and engineering

	<i>Very Strong, Strong, Average, weak , Very Weak</i>
3	Design efficient processes and develop high quality products giving due consideration to safety, environmental issues and economic aspects
	<i>Very Strong, Strong, Average, weak , Very Weak</i>
4	Conduct investigation of complex Engineering problems using research based methods, analyze and interpret data to draw valid conclusions
	<i>Very Strong, Strong, Average, weak , Very Weak</i>
5	Acquire skills to select and use modern engineering tools and software for modeling, simulation and solution of complex Engineering problems
	<i>Very Strong, Strong, Average, weak , Very Weak</i>
6	Apply contextual knowledge to assess societal, health, safety, legal and cultural issues in professional practice to become a responsible engineer
	<i>Very Strong, Strong, Average, weak , Very Weak</i>
7	Understand the societal and environmental impacts of applying Engineering to solve real life problems and practice sustainable development
	<i>Very Strong, Strong, Average, weak , Very Weak</i>
8	Work with full commitment to professional and ethical responsibilities as an engineer
	<i>Very Strong, Strong, Average, weak , Very Weak</i>
9	Work individually in a team or as a leader in any demanding or challenging environment
	<i>Very Strong, Strong, Average, weak , Very Weak</i>
10	Communicate effectively with engineering community or the society at large through appropriate reports, designs, presentations and instructions
	<i>Very Strong, Strong, Average, weak , Very Weak</i>
11	Engage in life-long learning in the broadest context of developments in technology for continuous professional development
	<i>Very Strong, Strong, Average, weak , Very Weak</i>

12	Understand engineering and management principles and apply these to manage multidisciplinary projects and finance as an individual or as a member or leader of a team
	<i>Very Strong, Strong, Average, weak , Very Weak</i>

ALUMNI SURVEY

Objective: Collect alumni views to help us improve our programs and assess the effectiveness of Outcome based education framework adopted here.

Sl.No.	Question
1	Name
2	Organization
3	Qualification secured from Amal Jyothi College of Engineering (AJCE)
4	Year of Graduation from AJCE
5	E-mail ID
6	Mobile No
7	Present Status
	<i>[Employed/ Entrepreneur/ Pursuing higher studies/ Working at home/ Other]</i>
8	Present Employment level
	<i>[High managerial/ Middle Managerial /Low Managerial/ Non-managerial/Other]</i>
9	Number of Years of experience at the present level
	<i>[above 10/ between 5 and 10/ between 2 and 5/ between 1 and 2/ less than 1]</i>
10	Is your present job in the core area of Engineering you have studied?
	<i>[very much/ strongly related / weakly related/ not at all related/ no relation to engineering at all]</i>
11	How well have you been able to apply your knowledge of Mathematics, Science and Engineering fundamentals for the solution of engineering problems in your work?
	<i>[very well/ somewhat well / rarely well/ not at all/ not applicable]</i>
12	How well have you been able to identify, formulate and analyze complex Engineering problems and derive meaningful conclusions using principles of mathematics, science and engineering in your work?

	<i>[very well/ somewhat well / rarely well/ not at all/ not applicable]</i>
13	How well have you been able to design efficient processes and develop high quality products giving due consideration to safety, environmental issues and economic aspects?
	<i>[very well/ somewhat well / rarely well/ not at all/ not applicable]</i>
14	How well have you been able to conduct investigation of complex Engineering problems using research based methods, analyze and interpret data to draw valid conclusions?
	<i>[very well/ somewhat well / rarely well/ not at all/ not applicable]</i>
15	How well have you been able to select and use modern engineering tools and software for modeling, simulation and solution of complex Engineering problems?
	<i>[very well/ somewhat well / rarely well/ not at all/ not applicable]</i>
16	How well have you been able to apply contextual knowledge to assess societal, health, safety, legal and cultural issues in your professional practice as a responsible engineer?
	<i>[very well/ somewhat well / rarely well/ not at all/ not applicable]</i>
17	How well have you been able to understand the societal and environmental impacts of applying Engineering to solve real life problems and practice sustainable development?
	<i>[very well/ somewhat well / rarely well/ not at all/ not applicable]</i>
18	How well have you been able to work with full commitment to your professional and ethical responsibilities as an engineer?
	<i>[very well/ somewhat well / rarely well/ not at all/ not applicable]</i>
19	How well have you been able to work successfully as an individual, in a team or as a team leader in any demanding or challenging environment?
	<i>[very well/ somewhat well / rarely well/ not at all/ not applicable]</i>
20	How well have you been able to communicate effectively through written and oral modes to all levels of stakeholders in society?
	<i>[very well/ somewhat well / rarely well/ not at all/ not applicable]</i>
21	How well have you been engaging yourself in life-long learning in the broadest context of developments in technology for continuous professional development?
	<i>[very well/ somewhat well / rarely well/ not at all/ not applicable]</i>

22	How well have you been able to apply engineering and management principles to manage multidisciplinary projects as an individual or as a team member or team leader?
	<i>[very well/ somewhat well / rarely well/ not at all/ not applicable]</i>
23	To what extent do you think you are able to apply your technical knowledge and take on higher responsibilities in industry, academics and diverse fields of your engineering specialization?
	<i>[very well/ somewhat well / rarely well/ not at all/ not applicable]</i>
24	How far you are in a position to pursue continual path of professional development, interspersed with advanced education and continuing enhancement programs, relevant to your specific career goals?
	<i>[very well/ somewhat well / rarely well/ not at all/ not applicable]</i>
25	How far you are able to channelize your knowledge base, business links and social contacts into socially beneficial activities?
	<i>[very well/ somewhat well / rarely well/ not at all/ not applicable]</i>
26	How far you able to provide effective and efficient real time solutions to Engineering problems in your area, based on acquired knowledge so as to empower industry and society?
	<i>[very well/ somewhat well / rarely well/ not at all/ not applicable]</i>
27	How far you are able to enhance research skills to develop sustainable solutions to Complex Engineering problems in your area of work?
	<i>[very well/ somewhat well / rarely well/ not at all/ not applicable]</i>
28	How far you have acquired managerial skills and ethical values to develop yourself as a true leader and team player?
	<i>[very well/ somewhat well / rarely well/ not at all/ not applicable]</i>
29	Other suggestions, if any:

EMPLOYER SURVEY

Objective: Collect the views of Employers of our Graduates to help us improve our programs and assess the effectiveness of Outcome based education framework practiced here.

Sl.No.	Question
1	Name of the Company/Organization
2	Name of the person responding to this Survey

3	Address
4	E-mail ID
5	Mobile No
6	Present Status (Title/Designation)
7	No. of years of Experience in the Company/Organization
8	Please, indicate the Professional Background of the person responding to this survey
9	Please indicate the number of Alumni employed by your Company/ Organization, who have graduated from Amal Jyothi College of Engineering (AJCE), who are considered for this Survey
10	How do you rate the level of engineering knowledge of our Graduate(s)? <i>[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]</i>
11	How do you evaluate the technical competence/skills of our Graduate (s)? <i>[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]</i>
12	How do you feel the Graduate(s) of AJCE were trained properly for carrying out the work in your company/ organization? <i>[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]</i>
13	How effectively can he/she use modern engineering tools to solve problems connected with his/her assigned work? <i>[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]</i>
14	Can the Graduate(s) work effectively as an individual or in a team to accomplish a common goal for the company/organization? <i>[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]</i>
15	How far the Graduate(s) is/are able to lead a team of technical personnel to accomplish a given task for the company/organization? <i>[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]</i>
16	How well the Graduate(s) can work in a collaborative multidisciplinary professional work group in your organization? <i>[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]</i>

17	How active Is/are the Graduate(s) as a member(s) of any professional society or organization?
	<i>[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]</i>
18	How far the Graduate is interested to enhance his/her professional skills by attending short courses/ workshops, training programs or conferences/ meetings?
	<i>[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]</i>
19	How far the Graduate is interested in enhancing his qualifications by enrolling for higher Degrees, like M Tech., MBA, Ph D etc.?
	<i>[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]</i>
20	How satisfied are you with the communication skills of our Graduate(s)?
	<i>[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]</i>
21	How far our Graduate(s) have the technical skills to design, develop, implement and modify integrated projects in the field of his/her engineering specialization?
	<i>[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]</i>
22	How do you rate the level of his/her integrity/adherence to ethical principles in his work?
	<i>[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]</i>
23	How do you rate his/her efficiency to manage finance related matters in your company/organization?
	<i>[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]</i>
24	How do you rate his/her concerns and awareness for environmental issues and sustainable development?
	<i>[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]</i>
25	Overall, how well satisfied are you with the performance of the AJCE Graduate(s)?
	<i>[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]</i>
25	Suggestions, if any, for molding our Graduates as still better engineers

COURSE OUTCOMES

B.Tech-Mechanical Engineering(Automobile)

SEMESTER-1

MA101

Course Code	Course Name	L-T-P:C	Year of Introduction
MA101	CALCULUS	3-1-0:4	2016

No.	Course Outcome - MA101 - CALCULUS	Target
CO1	Apply the concept of convergence of infinite series to solve Engineering problems	60%
CO2	Apply the concept of maxima and minima of functions of two variables to solve Engineering problems	60%
CO3	Apply calculus of vector-valued functions to dynamical quantities like velocity and acceleration	60%
CO4	Identify and use Multiple Integrals to evaluate surface area and volume	60%
CO5	Apply the concepts of Divergence and Curl to solve Engineering problems	60%
CO6	Demonstrate the application of vector calculus theorems to evaluate different integrals	60%

COURSE END SURVEY - MA101 - CALCULUS

Sl.No	Questions & Options
CO1	To what extent you are able to apply the concept of convergence of infinite series to solve Engineering problems
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extent you are able to apply the concept of maxima and minima of functions of two variables to solve Engineering problems
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extent you are able to apply calculus of vector-valued functions to dynamical quantities like velocity and acceleration
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To what extent you are able to identify and use Multiple Integrals to evaluate surface area and volume
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extent you are able to extent apply the concepts of Divergence and Curl to solve Engineering problems
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	To what extent you are able to demonstrate the application of vector calculus theorems to evaluate different integrals
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - MA101 - CALCULUS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3						2	2	2

CO2	3	3	3	3						2	2	2
CO3	3	3	3	3						2	2	2
CO4	3	3	3	3						2	2	2
CO5	3	3	3	3						2	2	2
CO6	3	3	3	3						2	2	2

CO->PSO MAPPING - MA101 - CALCULUS

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	2		
CO2	3	2		
CO3	3	2		
CO4	3	2		
CO5	3	2		
CO6	3	2		

COURSE->PO MAPPING - MA101 - CALCULUS

MA101/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3						2	2	2

COURSE->PSO MAPPING - MA101 - CALCULUS

MA101/PSO	PSO1	PSO2	PSO3	PSO4
	3	2		

CY100

Course Code	Course Name	L-T-P:C	Year of Introduction
CY100	Engineering Chemistry	3-1-0:4	2016

No.	Course Outcome - CY100 - Engineering Chemistry	Target
CO1	Demonstrate the principles of spectroscopy and apply them to explain chemical phenomena	0%
CO2	Illustrate principles and applications of various electrochemical techniques and cells.	60%
CO3	Discuss instrumental methods like chromatography, conductivity and thermal analysis for chemical analysis.	60%
CO4	Recognize the properties and applications of engineering materials, such as polymers and nanomaterials	60%
CO5	Evaluate the properties of complex chemicals such as fuels and lubricants.	60%

CO6	Describe the properties of water and identify methods for water purification	60%
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COURSE END SURVEY - CY100 - Engineering Chemistry

Sl.No	Questions & Options
CO1	To what extent you are able to demonstrate the principles of spectroscopy and apply them to explain chemical phenomena
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extent you are able to illustrate principles and applications of various electrochemical techniques and cells.
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extent you are able to discuss instrumental methods like chromatography, conductivity and thermal analysis for chemical analysis.
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To what extent you are able to recognize the properties and applications of engineering materials, such as polymers and nanomaterials
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extent you are able to evaluate the properties of complex chemicals such as fuels and lubricants.
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	To what extent you are able to describe the properties of water and identify methods for water purification
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - CY100 - Engineering Chemistry

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2	3	3	3					3
CO2	3	3	2		3							
CO3	3	3	2		3			2				
CO4	3	2	2	2	3							
CO5	3		2		3	3	3	3				
CO6	3		2			3	2					2

CO->PSO MAPPING - CY100 - Engineering Chemistry

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				

CO4				
CO5				
CO6				

COURSE->PO MAPPING - CY100 - Engineering Chemistry

CY100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2	2	3	3	3	3				3

COURSE->PSO MAPPING - CY100 - Engineering Chemistry

CY100/PSO	PSO1	PSO2	PSO3	PSO4

BE110

Course Code	Course Name	L-T-P:C	Year of Introduction
BE110	Engineering Graphics	1-1-2:3	2016

No.	Course Outcome - BE110 - Engineering Graphics	Target
CO1	Demonstrate Engineering Drawing Standards (as per BIS), dimensioning and preparation of drawings leading to illustration of Graphics as the communication language of Engineers	60%
CO2	Interpret engineering drawings, leading to enhanced presentation skills of 3-D objects in 2-D plane / paper and improved visualization of physical objects.	60%
CO3	Apply the principles of orthographic projections of lines, solids and sectioned views in the design of pipeline systems.	60%
CO4	Prepare isometric and perspective projections that help to reconstruct solutions to real-time engineering problems in 3D to provide better understanding	60%
CO5	Create surface development and generate projections of penetrated objects which will help to develop suitable models for industrial applications.	60%
CO6	Recognize the importance of CAD software, and develop AutoCAD skills to transfer technical data and sketches into electronic drawing.	60%

COURSE END SURVEY - BE110 - Engineering Graphics

Sl.No	Questions & Options
CO1	To what extent you are able to demonstrate Engineering Drawing Standards (as per BIS), dimensioning and preparation of drawings leading to illustration of Graphics as the communication language of Engineers? Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	To what extent you are able to interpret engineering drawings, leading to enhanced presentation skills of 3-D objects in 2-D plane / paper and improved visualization of physical objects? Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO3	To what extent you are able to apply the principles of orthographic projections of lines, solids and sectioned views in the design of pipeline systems?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extent you are able to prepare isometric and perspective projections that help to reconstruct solutions to real-time engineering problems in 3D to provide better understanding?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extent you are able to create surface development and generate projections of penetrated objects which will help to develop suitable models for industrial applications?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO6	To what extent you are able to recognize the importance of CAD software, and develop AutoCAD skills to transfer technical data and sketches into electronic drawing?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - BE110 - Engineering Graphics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3								1	3
CO2	2	2	2							2	2	2
CO3	2	2						2		2	1	2
CO4	2	2	3	2	1			2		3	1	2
CO5	2	2	2							2	1	
CO6	3	2	2	2	3					2	2	2

CO->PSO MAPPING - BE110 - Engineering Graphics

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1		1		1
CO2		1	1	2
CO3	2	2		2
CO4	1	1	1	2
CO5	1	2	1	2
CO6	1	1	2	2

COURSE->PO MAPPING - BE110 - Engineering Graphics

BE110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	3	2	3			2		3	2	3

COURSE->PSO MAPPING - BE110 - Engineering Graphics

BE110/PSO	PSO1	PSO2	PSO3	PSO4
	2	2	2	2

BE103

Course Code	Course Name	L-T-P:C	Year of Introduction
BE103	Introduction to Sustainable Engineering	2-0-1:3	2016

No.	Course Outcome - BE103 - Introduction to Sustainable Engineering	Target
CO1	Explain the role of engineering in sustainable development and environmental protection	60%
CO2	Describe global environmental issues and the consequent threats to sustainable development	61%
CO3	Apply simple, efficient and indigenous solutions to assess and overcome threats to sustainability	60%
CO4	Identify and apply engineering methods and eco-friendly solutions to maintain a green environment	60%
CO5	Demonstrate the relevance of non-conventional energy sources for sustainable development of the society	61%
CO6	Recognize the role of technology in the sustainable development of society and industry	61%

COURSE END SURVEY - BE103 - Introduction to Sustainable Engineering

Sl.No	Questions & Options
CO1	To what extent are you able to explain the role of engineering in sustainable development and environmental protection
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extent are you able to describe global environmental issues and the consequent threats to sustainable development
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extent are you able to apply simple, efficient and indigenous solutions to assess and overcome threats to sustainability
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To what extent are you able to Identify and apply engineering methods and eco-friendly solutions to maintain a green environment
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extent are you able to demonstrate the relevance of non-conventional energy sources for sustainable development of the society
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	To what extent are you able to recognize the role of technology in the sustainable development of society and industry

Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - BE103 - Introduction to Sustainable Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2					3	3	3		2		2
CO2		3	3			3	3	3	2	2		3
CO3	3	3	3	3	2	3	3	2				2
CO4	3	3	3		2	3	3	3	2		3	2
CO5	2				3	3	3					
CO6	3				2	3	3	3				

CO->PSO MAPPING - BE103 - Introduction to Sustainable Engineering

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

COURSE->PO MAPPING - BE103 - Introduction to Sustainable Engineering

BE103/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3	3	3	2	2	3	3

COURSE->PSO MAPPING - BE103 - Introduction to Sustainable Engineering

BE103/PSO	PSO1	PSO2	PSO3	PSO4

EE110

Course Code	Course Name	L-T-P:C	Year of Introduction
EE110	Electrical Engineering Workshop	0-0-2:1	2016

No.	Course Outcome - EE110 - Electrical Engineering Workshop	Target
CO1	Explain electrical power supplies and their limitations, standard voltages and their tolerances, safety aspects of electrical systems and the importance of protective measures in wiring systems.	65%
CO2	Demonstrate different configurations of wires, cables and other accessories used in wiring circuits	65%

CO3	Demonstrate different lighting circuits for domestic and commercial buildings	65%
CO4	Wire different lighting circuits for domestic and commercial buildings	65%
CO5	Distinguish between light and power circuits to control and measure circuit parameters such as current, voltage and power	65%

COURSE END SURVEY - EE110 - Electrical Engineering Workshop

Sl.No	Questions & Options
CO1	to what extend you are familiar with Electrical power supply and their limitations, knowledge of standard voltages and their tolerances, safety aspects of electrical systems and the importance of protective measures in wiring systems
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	whether you gain the working knowledge of different configurations of wires, cables and other accessories used in wiring circuits
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	Are you able to do different lighting circuits for domestic and commercial buildings
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO4	Are you able to wire up different lighting circuits for domestic and commercial buildings
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO5	Are you able to distinguish between light and power circuits to control and measure circuit parameters such as current, voltage and power
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>

CO->PO MAPPING - EE110 - Electrical Engineering Workshop

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2				3	2	2	2	2		3
CO2	3				2				2	2		2
CO3	3								2	2		3
CO4	3	2	2		2			2	2	2		3
CO5	3								2	2		2

CO->PSO MAPPING - EE110 - Electrical Engineering Workshop

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2			
CO2	1			
CO3	2			
CO4				

CO5	1			
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COURSE->PO MAPPING - EE110 - Electrical Engineering Workshop

EE110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	2		2	3	2	2	2	2		3

COURSE->PSO MAPPING - EE110 - Electrical Engineering Workshop

EE110/PSO	PSO1	PSO2	PSO3	PSO4
	2			

PH100

Course Code	Course Name	L-T-P:C	Year of Introduction
PH100	Engineering Physics	3-1-0:4	2016

No.	Course Outcome - PH100 - Engineering Physics	Target
CO1	Analyse different phenomena associated with the generation and propagation of oscillations and waves	65%
CO2	Demonstrate wave-like phenomena associated with light and use them to measure its properties	60%
CO3	Illustrate the phenomenon of superconductivity and evaluate the properties of the superconducting state	65%
CO4	Identify the features of quantum and statistical phenomena and demonstrate the dynamics of microscopic entities.	65%
CO5	Describe the production and properties of acoustic and ultrasonic waves and demonstrate their applications.	65%
CO6	Outline the construction and properties of different lasers and optoelectronic devices, and identify their applications	65%

COURSE END SURVEY - PH100 - Engineering Physics

Sl.No	Questions & Options
CO1	To what extent you are able to Analyse different phenomena associated with the generation and propagation of oscillations and waves?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extent you are able to Demonstrate wave-like phenomena associated with light and use them to measure its properties
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extent you are able to Illustrate the phenomenon of superconductivity and evaluate the properties of the superconducting state
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO4	To what extent you are able to Identify the features of quantum and statistical phenomena and demonstrate the dynamics of microscopic entities.
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extent you are able to Describe the production and properties of acoustic and ultrasonic waves and
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	To what extent you are able to Outline the construction and properties of different lasers and optoelectronic devices, and identify their applications
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - PH100 - Engineering Physics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2		1	1					2	2
CO2	3	2	2								1	
CO3	3	2	2							1	1	
CO4	3	2	2								1	
CO5	3	2	2		1					1	2	
CO6	3	2	1		1					2	1	

CO->PSO MAPPING - PH100 - Engineering Physics

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	2		
CO2	2	1		
CO3	2	2		1
CO4	1	1		
CO5	2	2		1
CO6	2	2		1

COURSE->PO MAPPING - PH100 - Engineering Physics

PH100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	2		1	1				2	2	2

COURSE->PSO MAPPING - PH100 - Engineering Physics

PH100/PSO	PSO1	PSO2	PSO3	PSO4
	2	2		1

Course Code	Course Name	L-T-P:C	Year of Introduction
BE10102	Introduction to Mechanical Engineering Sciences	2-1-0:3	2016

No.	Course Outcome - BE10102 - Introduction to Mechanical Engineering Sciences	Target
CO1	Distinguish between different processes by applying knowledge of thermodynamics	50%
CO2	Explain the working of different energy conversion devices	55%
CO3	Differentiate between refrigeration and air conditioning devices and demonstrate their working	55%
CO4	Recognize different parts of an automobile and explain their working	50%
CO5	Evaluate various engineering materials used in manufacturing industries	55%
CO6	Identify appropriate manufacturing methods for production	55%

COURSE END SURVEY - BE10102 - Introduction to Mechanical Engineering Sciences

Sl.No	Questions & Options
CO1	To what extent you are able to distinguish between different processes by applying knowledge of thermodynamics
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	To what extent you are able to explain the working of different energy conversion devices
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extent you are able to differentiate between refrigeration and air conditioning devices and demonstrate their working
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To what extent you are able to recognize different parts of an automobile and explain their working
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extent you are able to evaluate various engineering materials used in manufacturing industries
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	To what extent you are able to identify appropriate manufacturing methods for production
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - BE10102 - Introduction to Mechanical Engineering Sciences

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1			2								
CO2	3			2								
CO3	3	3		2								

CO4		2	2	3								
CO5		3		3								
CO6				3	3							

CO->PSO MAPPING - BE10102 - Introduction to Mechanical Engineering Sciences

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3			
CO2			2	
CO3				
CO4			2	
CO5				
CO6		3		

COURSE->PO MAPPING - BE10102 - Introduction to Mechanical Engineering Sciences

BE10102/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2	3	3							

COURSE->PSO MAPPING - BE10102 - Introduction to Mechanical Engineering Sciences

BE10102/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	2	

PH110

Course Code	Course Name	L-T-P:C	Year of Introduction
PH110	Engineering Physics Lab	0-0-2:1	2016

No.	Course Outcome - PH110 - Engineering Physics Lab	Target
CO1	Measure basic physical quantities, such as voltage, frequency, temperature etc and evaluate measurement accuracy.	70%
CO2	Measure and analyse the properties of electrical and acoustic waves and oscillations, and demonstrate resonance.	70%
CO3	Demonstrate wave-like properties of light and measure the wavelength of monochromatic light sources	70%
CO4	Illustrate the propagation of light through an optical fibre and measure its numerical aperture	70%
CO5	Demonstrate the working of devices such as solar cells and photoelectric cells	70%
CO6	Organize an experimental set up and measure fundamental constants such as the Planck's constant.	70%

COURSE END SURVEY - PH110 - Engineering Physics Lab

Sl.No	Questions & Options
CO1	To what extent you are able to Measure basic physical quantities, such as voltage, frequency, temperature etc and evaluate measurement accuracy.
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extent you are able to Measure and analyse the properties of electrical and acoustic waves and oscillations, and demonstrate resonance.
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extent you are able to Demonstrate wave-like properties of light and measure the wavelength of monochromatic light sources
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To what extent you are able to Illustrate the propagation of light through an optical fibre and measure its numerical aperture
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extent you are able to Demonstrate the working of devices such as solar cells and photoelectric cells
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	To what extent you are able to Organize an experimental set up and measure fundamental constants such as the Planck's constant.
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - PH110 - Engineering Physics Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2		2	2				2	2	1	
CO2	3	3		2	2				2	2	2	
CO3	3	3		2	2				2	2	1	
CO4	3	3		2	2				2	2	2	
CO5	3	2		2	2		2		2	2	2	
CO6	2	3		2	3				2	2		

CO->PSO MAPPING - PH110 - Engineering Physics Lab

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	1	
CO2	2	2	2	2
CO3				

CO4	1	1		
CO5	3	2	2	1
CO6	1			

COURSE->PO MAPPING - PH110 - Engineering Physics Lab

PH110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3		2	3		2		2	2	2	

COURSE->PSO MAPPING - PH110 - Engineering Physics Lab

PH110/PSO	PSO1	PSO2	PSO3	PSO4
	3	2	2	2

ME110

Course Code	Course Name	L-T-P:C	Year of Introduction
ME110	Mechanical Engineering Workshops	0-0-2:1	2016

No.	Course Outcome - ME110 - Mechanical Engineering Workshops	Target
CO1	Demonstrate various manufacturing processes in a basic mechanical engineering workshop, like smithy, carpentry, foundry and fitting	60%
CO2	Identify various hand tools used in basic mechanical engineering workshop sections, like smithy, carpentry, foundry and fitting.	60%
CO3	Choose different measuring devices necessary to carry out work in a workshop.	60%
CO4	Demonstrate the operations of various machine tools like lathe, milling, drilling and shaping machines.	60%
CO5	Assemble and disassemble machines like IC engines	60%
CO6	Construct models using basic mechanical workshop sections involving welding, moulding, smithy, carpentry etc.	60%

COURSE END SURVEY - ME110 - Mechanical Engineering Workshops

Sl.No	Questions & Options
CO1	To what extent you are able to demonstrate various manufacturing processes in a basic mechanical engineering workshop, like smithy, carpentry, foundry and fitting Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extent you are able to identify various hand tools used in basic mechanical engineering workshop sections, like smithy, carpentry, foundry and fitting. Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO3	To what extent you are able to choose different measuring devices necessary to carry out work in a workshop.
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To what extent you are able to demonstrate the operations of various machine tools like lathe, milling, drilling and shaping machines.
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extent you are able to assemble and disassemble machines like IC engines
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	To what extent you are able to construct models using basic mechanical workshop sections involving welding, moulding, smithy, carpentry etc.
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - ME110 - Mechanical Engineering Workshops

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1		2		3	2	2	2	3	1	2	2
CO2	1				3	1	2	3	3		1	
CO3	2		1		1			2			1	
CO4	2				3	2	1		2	1	2	1
CO5	2	3	3		3		3	2	2	1	2	1
CO6	2		2		2		2	2	3	2	3	3

CO->PSO MAPPING - ME110 - Mechanical Engineering Workshops

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1	1		
CO2	1	1	1	
CO3	2	1		
CO4	2	1		
CO5	2	3		
CO6	1	2		

COURSE->PO MAPPING - ME110 - Mechanical Engineering Workshops

ME110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	3	3		3	2	3	3	3	2	3	3

COURSE->PSO MAPPING - ME110 - Mechanical Engineering Workshops

ME110/PSO	PSO1	PSO2	PSO3	PSO4

	2	3	1	
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EE100

Course Code	Course Name	L-T-P:C	Year of Introduction
EE100	Basics of Electrical Engineering	2-1-0:3	2016

No.	Course Outcome - EE100 - Basics of Electrical Engineering	Target
CO1	Summarize the basics of electrical engineering applied to various engineering problems	60%
CO2	Perform mathematical analysis of electric circuits and its power measurement	60%
CO3	Illustrate the basics of magnetism and apply it to electric machines	60%
CO4	Assess the basic structure of machines and power systems	60%
CO5	Evaluate the basic circuits and machines used in real world	60%

COURSE END SURVEY - EE100 - Basics of Electrical Engineering

Sl.No	Questions & Options
CO1	Are you able to solve basics electrical engineering problems
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO2	To what extent you are able to perform mathematical analysis of electric circuits and its power measurement
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extent can you solve basic magnetic circuit problems?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extent you are able to assess the basic structure of machines and power systems
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	Are you able to evaluate the basic circuits and machines used in real world
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - EE100 - Basics of Electrical Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3					2						3
CO2	3	3	3	2								2
CO3	3	2	2									
CO4	3			2	2							

CO5	3	3				2						3
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CO->PSO MAPPING - EE100 - Basics of Electrical Engineering

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - EE100 - Basics of Electrical Engineering

EE100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	2	2	2						3

COURSE->PSO MAPPING - EE100 - Basics of Electrical Engineering

EE100/PSO	PSO1	PSO2	PSO3	PSO4

MAT101

Course Code	Course Name	L-T-P:C	Year of Introduction
MAT101	LINEAR ALGEBRA AND CALCULUS	3-1-0:4	2019

No.	Course Outcome - MAT101 - LINEAR ALGEBRA AND CALCULUS	Target
CO1	Solve systems of linear equations, diagonalize matrices and characterize quadratic forms	60%
CO2	Compute the partial and total derivatives and maxima and minima of multivariable functions	60%
CO3	Compute multiple integrals and apply them to find areas and volumes of geometrical shapes, mass and center of gravity of plane laminas	55%
CO4	Perform various tests to determine whether a given series is convergent, absolutely convergent or conditionally convergent	60%
CO5	Determine the Taylor and Fourier series expansion of functions and learn their applications	60%

COURSE END SURVEY - MAT101 - LINEAR ALGEBRA AND CALCULUS

Sl.No	Questions & Options
CO1	To what extent are you able to solve systems of linear equations, diagonalize matrices and characterise quadratic forms ?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO2	To what extent are you are able to compute the partial and total derivatives and maxima and minima of multivariable functions ?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extent are you are able to compute multiple integrals and apply them to find areas and volumes of geometrical shapes, mass and centre of gravity of plane laminas ?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To what extent are you are able to perform various tests to determine whether a given series is convergent, absolutely convergent or conditionally convergent ?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extent are you are able to determine the Taylor and Fourier series expansion of functions and learn their applications ?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - MAT101 - LINEAR ALGEBRA AND CALCULUS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	1							1
CO2	3	3	3	3	1							1
CO3	3	3	3	3	2							1
CO4	3	2	3	2	2							1
CO5	3	3	3	3	2							1

CO->PSO MAPPING - MAT101 - LINEAR ALGEBRA AND CALCULUS

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - MAT101 - LINEAR ALGEBRA AND CALCULUS

MAT101/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	2							1

COURSE->PSO MAPPING - MAT101 - LINEAR ALGEBRA AND CALCULUS

MAT101/PSO	PSO1	PSO2	PSO3	PSO4

CYT100

Course Code	Course Name	L-T-P:C	Year of Introduction
CYT100	ENGINEERING CHEMISTRY	3-1-0:4	2019

No.	Course Outcome - CYT100 - ENGINEERING CHEMISTRY	Target
CO1	Apply the basic concepts of electrochemistry and corrosion to explore its possible applications in various engineering fields	60.5%
CO2	Demonstrate the principles of spectroscopy and apply them to explain chemical phenomena	60.5%
CO3	Discuss instrumental methods like chromatography, conductivity and thermal analysis for chemical analysis. and understand the basic concept of SEM for surface characterisation of nanomaterials	60.5%
CO4	Learn about the basics of stereochemistry and its application and apply the knowledge of conducting polymers and advanced polymers in engineering.	60.5%
CO5	Describe the properties of water and identify methods for water purification	60.5%

COURSE END SURVEY - CYT100 - ENGINEERING CHEMISTRY

Sl.No	Questions & Options
CO1	To what extent you can apply the basic concepts of electrochemistry and corrosion to explore its possible applications in various engineering fields
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	How far you are able to demonstrate the principles of spectroscopy and apply them to explain chemical phenomena
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	How far you are able to discuss instrumental methods and understand the surface characterisation technique.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	How much you are able to learn about the basics of Stereochemistry and its application and apply the knowledge of conducting polymers and advanced polymers in engineering.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extent you describe the properties of water and identify methods for water purification
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - CYT100 - ENGINEERING CHEMISTRY

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2			2		2				3
CO2	3	2	3	2	2		2		2	2		
CO3	3	3	3	2	2			3		2		2

CO4	3	2		2		2			3			2
CO5	3		2	2			3	3		2	2	2

CO->PSO MAPPING - CYT100 - ENGINEERING CHEMISTRY

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - CYT100 - ENGINEERING CHEMISTRY

CYT100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	2	2	2	3	3	3	2	2	3

COURSE->PSO MAPPING - CYT100 - ENGINEERING CHEMISTRY

CYT100/PSO	PSO1	PSO2	PSO3	PSO4

EST110

Course Code	Course Name	L-T-P:C	Year of Introduction
EST110	ENGINEERING GRAPHICS	2-0-2:3	2019

No.	Course Outcome - EST110 - ENGINEERING GRAPHICS	Target
CO1	Demonstrate Engineering Drawing Standards (as per BIS), dimensioning and preparation of drawings leading to illustration of Graphics as the communication language of Engineers	65%
CO2	Interpret engineering drawings, leading to enhanced presentation skills of 3-D objects in 2-D plane / paper and improved visualization of physical objects.	65%
CO3	Apply the principles of orthographic projections of lines, solids and sectioned views in the design of pipeline systems.	65%
CO4	Prepare isometric and perspective projections that help to reconstruct solutions to real-time engineering problems in 3D to provide better understanding.	65%
CO5	Create surface development of objects which will help to develop suitable models for industrial applications.	65%
CO6	Recognize the importance of CAD software, and develop AutoCAD skills to transfer technical data and sketches into electronic drawing.	65%

COURSE END SURVEY - EST110 - ENGINEERING GRAPHICS

Sl.No	Questions & Options
CO1	To what extent you are able to demonstrate Engineering Drawing Standards (as per BIS), dimensioning and preparation of drawings leading to illustration of Graphics as the communication language of Engineers?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extent you are able to interpret engineering drawings, leading to enhanced presentation skills of 3-D objects in 2-D plane / paper and improved visualization of physical objects?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extent you are able to apply the principles of orthographic projections of lines, solids and sectioned views in the design of pipeline systems?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To what extent you are able to prepare isometric and perspective projections that help to reconstruct solutions to real-time engineering problems in 3D to provide better understanding?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extent you are able to create surface development and generate projections of penetrated objects which will help to develop suitable models for industrial applications?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	To what extent you are able to recognize the importance of CAD software, and develop AutoCAD skills to transfer technical data and sketches into electronic drawing?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - EST110 - ENGINEERING GRAPHICS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	2			2		3		3	3	3
CO2	2	3	2	2	2	2		2		3		3
CO3	2	2	2					2		3		
CO4	2	2		2						3		3
CO5	2	2								3		
CO6	3	3	2	3		3				3		3

CO->PSO MAPPING - EST110 - ENGINEERING GRAPHICS

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	3		3
CO2				
CO3				
CO4				

CO5				
CO6				

COURSE->PO MAPPING - EST110 - ENGINEERING GRAPHICS

EST110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2	3	2	3		3		3	3	3

COURSE->PSO MAPPING - EST110 - ENGINEERING GRAPHICS

EST110/PSO	PSO1	PSO2	PSO3	PSO4
	3	3		3

EST130

Course Code	Course Name	L-T-P:C	Year of Introduction
EST130	BASICS OF ELECTRICAL & ELECTRONICS ENGINEERING	4-0-0:4	2019

No.	Course Outcome - EST130 - BASICS OF ELECTRICAL & ELECTRONICS ENGINEERING	Target
CO1	Apply fundamental concepts and circuit laws to solve simple DC electric and magnetic circuits	60%
CO2	Develop and solve models of magnetic circuits	60%
CO3	Apply the fundamental laws of electrical engineering to solve simple ac circuits on steady state	60%
CO4	Identify and select necessary components used in various electronic circuits.	60%
CO5	Describe and outline the working principle of a voltage amplifier and electronic instrumentation system	60%
CO6	Explain the principle of radio and cellular communication	60%

COURSE END SURVEY - EST130 - BASICS OF ELECTRICAL & ELECTRONICS ENGINEERING

Sl.No	Questions & Options
CO1	To what extent you are able to apply fundamental concepts and circuit laws to solve simple DC electric and magnetic circuits
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	To what extent you are able to develop and solve models of magnetic circuits
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	To what extent you are able to apply the fundamental laws of electrical engineering to solve simple ac circuits on steady state
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extent you are able to identify and select necessary components used in various electronic circuits.

	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extent you are able to describe and outline the working principle of a voltage amplifier and electronic instrumentation system
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO6	To what extent you are able to explain the principle of radio and cellular communication
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - EST130 - BASICS OF ELECTRICAL & ELECTRONICS ENGINEERING

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2		1	3						2	
CO2	2	2									2	
CO3	2	2										
CO4	2	2										
CO5	2	2			2							
CO6	2	2			3						2	

CO->PSO MAPPING - EST130 - BASICS OF ELECTRICAL & ELECTRONICS ENGINEERING

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

COURSE->PO MAPPING - EST130 - BASICS OF ELECTRICAL & ELECTRONICS ENGINEERING

EST130/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	2		1	3						2	

COURSE->PSO MAPPING - EST130 - BASICS OF ELECTRICAL & ELECTRONICS ENGINEERING

EST130/PSO	PSO1	PSO2	PSO3	PSO4

HUN101

Course Code	Course Name	L-T-P:C	Year of Introduction
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HUN101	LIFE SKILLS	2-0-2:0	2019
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No.	Course Outcome - HUN101 - LIFE SKILLS	Target
CO1	Define and identify different life skills required in personal and professional life (Remembering-1).	60%
CO2	Develop self- awareness and apply well-defined techniques to cope with emotions, and stress (Creating-6).	60%
CO3	Examine the basic mechanics of effective communication and demonstrate through presentations (Applying-3).	60%
CO4	Judge a case or a situation by taking part in group discussions (Evaluating-5).	60%
CO5	Analyse and solve new problems using creative and critical thinking (Analysing-4).	60%
CO6	Discuss the basics of teamwork and leadership (Understanding-2).	60%

COURSE END SURVEY - HUN101 - LIFE SKILLS

Sl.No	Questions & Options
CO1	I am able to define and identify different life skills required in personal and professional life.
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO2	I am able to develop self- awareness and apply well-defined techniques to cope with emotions, and stress.
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO3	I am able to examine the basic mechanics of effective communication and demonstrate through presentations.
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO4	I am able to Judge a case or a situation by taking part in group discussions
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO5	I am able to analyse and solve new problems using creative and critical thinking
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO6	I am capable of form team and take leadership
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5

CO->PO MAPPING - HUN101 - LIFE SKILLS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	1	1	1	3	1	2	3	2	3	2
CO2	1		1			3	1	3	3	3	3	2
CO3	1	1	1		1	2	1	3	3	3	3	3
CO4	1		2		2	2	1	3	3	2	3	3

CO5	1	3	3	3	2	1	2	3	3	3	2	2
CO6	1		1			2	1	3	3	3	3	2

CO->PSO MAPPING - HUN101 - LIFE SKILLS

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

COURSE->PO MAPPING - HUN101 - LIFE SKILLS

HUN101/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	1	3	3	3	2	3	2	3	3	3	3	3

COURSE->PSO MAPPING - HUN101 - LIFE SKILLS

HUN101/PSO	PSO1	PSO2	PSO3	PSO4

ESL130

Course Code	Course Name	L-T-P:C	Year of Introduction
ESL130	ELECTRICAL & ELECTRONICS WORKSHOP	0-0-2:1	2019

No.	Course Outcome - ESL130 - ELECTRICAL & ELECTRONICS WORKSHOP	Target
CO1	Demonstrate safety measures against electric shocks	56%
CO2	Identify the tools used for electrical wiring, electrical accessories, wires, cables, batteries and standard symbols	56%
CO3	Develop the connection diagram, identify the suitable accessories and materials necessary for wiring simple lighting circuits for domestic buildings	56%
CO4	Identify and test various electronic components and equipments	56%
CO5	Draw circuit schematics with EDA tools	56%
CO6	Assemble and test electronic circuits on boards	56%

COURSE END SURVEY - ESL130 - ELECTRICAL & ELECTRONICS WORKSHOP

Sl.No	Questions & Options
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CO1	To what extent you are able to demonstrate safety measures against electric shocks
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>
CO2	To what extent you are able to identify the tools used for electrical wiring, electrical accessories, wires, cables, batteries and standard symbols
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>
CO3	To what extent you are able to develop the connection diagram, identify the suitable accessories and materials necessary for wiring simple lighting circuits for domestic buildings
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>
CO4	To what extent you are able to identify and test various electronic components and equipments
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>
CO5	To what extent you are able to draw circuit schematics with EDA tools
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>
CO6	To what extent you are able to assemble and test electronic circuits on boards
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>

CO->PO MAPPING - ESL130 - ELECTRICAL & ELECTRONICS WORKSHOP

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1						1		2	2			
CO2	1		2		3						1	
CO3	2	1			3							
CO4	1								2			
CO5					2				2			
CO6									2			

CO->PSO MAPPING - ESL130 - ELECTRICAL & ELECTRONICS WORKSHOP

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

COURSE->PO MAPPING - ESL130 - ELECTRICAL & ELECTRONICS WORKSHOP

ESL130/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	1	2		3	1		2	2		1	

COURSE->PSO MAPPING - ESL130 - ELECTRICAL & ELECTRONICS WORKSHOP

ESL130/PSO	PSO1	PSO2	PSO3	PSO4

CYL120

Course Code	Course Name	L-T-P:C	Year of Introduction
CYL120	ENGINEERING CHEMISTRY LAB	0-0-2:1	2019

No.	Course Outcome - CYL120 - ENGINEERING CHEMISTRY LAB	Target
CO1	Apply relevant techniques for the estimation of water quality parameters.	65.5%
CO2	Analyze and determine the concentration of metal ions present in a solution.	60.5%
CO3	Identify and apply standard instrumental techniques for chemical analysis	60.5%
CO4	Synthesize industrially relevant polymers such as resins	60.5%
CO5	Demonstrate the use of instruments like pH Meter and spectroscopic techniques like NMR to analyze organic compounds.	60.5%

COURSE END SURVEY - CYL120 - ENGINEERING CHEMISTRY LAB

Sl.No	Questions & Options
CO1	To what extent you can apply the basic concepts of water technology for engineering applications
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO2	How far you are able to analyze the concentration of metal ions by applying the concepts of engineering chemistry
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	How far you are able to understand and explain the instrumental techniques for chemical analysis
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO4	To what extent you are able to synthesize industrially relevant polymers
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	How much you are able to understand the working and applications of sophisticated instrumental techniques to solve societal challenges
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - CYL120 - ENGINEERING CHEMISTRY LAB

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3		2	3	3			2		2
CO2	3	2	2		3			2		2		2
CO3	3	2		3	2	2				2		2
CO4	3	2	3				3			2		3
CO5	3	2		3	2			2		2		3

CO->PSO MAPPING - CYL120 - ENGINEERING CHEMISTRY LAB

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - CYL120 - ENGINEERING CHEMISTRY LAB

CYL120/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	3	3	3	3	3	2		2		3

COURSE->PSO MAPPING - CYL120 - ENGINEERING CHEMISTRY LAB

CYL120/PSO	PSO1	PSO2	PSO3	PSO4

SEMESTER-2**MA102**

Course Code	Course Name	L-T-P:C	Year of Introduction
MA102	Differential Equations	3-1-0:4	2016

No.	Course Outcome - MA102 - Differential Equations	Target
CO1	Demonstrate the use of homogeneous differential equations for the solution of engineering problems	62%
CO2	Solve non-homogeneous ordinary differential equations	60%
CO3	Demonstrate the properties and use of Fourier series and Euler's formulas	60%
CO4	Illustrate the use of Partial differential equations and their solutions	62%

CO5	Apply partial differential equations and Fourier series to solve one - dimensional wave equations	60%
CO6	Apply partial differential equations and Fourier series to solve one - dimensional heat equations	60%

COURSE END SURVEY - MA102 - Differential Equations

Sl.No	Questions & Options
CO1	To what extent you are able to demonstrate the use of homogeneous differential equations for the solution of engineering problems
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO2	To what extent you are able to solve non-homogeneous ordinary differential equations
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO3	To what extent you are able to demonstrate the properties and use of Fourier series and Euler's formulas
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO4	To what extent you are able to illustrate the use of Partial differential equations and their solutions
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO5	To what extent you are able to apply partial differential equations and Fourier series to solve one - dimensional wave equations
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO6	To what extent you are able to apply partial differential equations and Fourier series to solve one - dimensional heat equations
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>

CO->PO MAPPING - MA102 - Differential Equations

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3							2	2
CO2	3	3	3	2							2	
CO3	3	3	3	3							2	
CO4	3	3	3	2							2	
CO5	3	3	3	2							2	
CO6	3	3	3	2							2	

CO->PSO MAPPING - MA102 - Differential Equations

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3			
CO2				3
CO3				3

CO4	3			
CO5	3			
CO6				3

COURSE->PO MAPPING - MA102 - Differential Equations

MA102/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3							2	2

COURSE->PSO MAPPING - MA102 - Differential Equations

MA102/PSO	PSO1	PSO2	PSO3	PSO4
	3			3

PH100

Course Code	Course Name	L-T-P:C	Year of Introduction
PH100	Engineering Physics	3-1-0:4	2016

No.	Course Outcome - PH100 - Engineering Physics	Target
CO1	Analyse different phenomena associated with the generation and propagation of oscillations and waves	62%
CO2	Demonstrate wave-like phenomena associated with light and use them to measure its properties	62%
CO3	Illustrate the phenomenon of superconductivity and evaluate the properties of the superconducting state	62%
CO4	Identify the features of quantum and statistical phenomena and demonstrate the dynamics of microscopic entities.	57%
CO5	Describe the production and properties of acoustic and ultrasonic waves and demonstrate their applications.	62%
CO6	Outline the construction and properties of different lasers and optoelectronic devices, and identify their applications	62%

COURSE END SURVEY - PH100 - Engineering Physics

Sl.No	Questions & Options
CO1	To what extent you are able to analyse different phenomena associated with the generation and propagation of oscillations and waves
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO2	To what extent you are able to demonstrate wave-like phenomena associated with light and use them to measure its properties
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>

CO3	To what extent you are able to illustrate the phenomenon of superconductivity and evaluate the properties of the superconducting state
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO4	To what extent you are able to Identify the features of quantum and statistical phenomena and demonstrate the dynamics of microscopic entities.
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO5	To what extent you are able to describe the production and properties of acoustic and ultrasonic waves and demonstrate their applications.
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO6	To what extent you are able to outline the construction and properties of different lasers and optoelectronic devices, and identify their applications
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>

CO->PO MAPPING - PH100 - Engineering Physics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	2								
CO2	3	2	1	2	2							
CO3	3	2	1	2								
CO4	3	2	1	2								
CO5	3	2	1	2	3							
CO6	3	2	1	2	3							

CO->PSO MAPPING - PH100 - Engineering Physics

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

COURSE->PO MAPPING - PH100 - Engineering Physics

PH100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	1	2	3							

COURSE->PSO MAPPING - PH100 - Engineering Physics

PH100/PSO	PSO1	PSO2	PSO3	PSO4

CE100

Course Code	Course Name	L-T-P:C	Year of Introduction
CE100	Basics of Civil Engineering	2-1-0:3	2016

No.	Course Outcome - CE100 - Basics of Civil Engineering	Target
CO1	Demonstrate the importance of Civil Engineering in the infrastructural development of the society	60%
CO2	Analyse different structures and their codal provisions.	60%
CO3	Identify the types, uses and properties of various building materials	65%
CO4	Identify the different components of a building and type of construction to be employed.	60%
CO5	Comprehend the concept of surveying	60%

COURSE END SURVEY - CE100 - Basics of Civil Engineering

Sl.No	Questions & Options
CO1	To what extent you are able to explain the role of civil engineering in infrastructural development
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO2	To what extent you are able to distinguish between different type of structures
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO3	To what extent you are able to identify a suitable building material
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO4	To what extent you are able to choose between types of construction to be employed for components of a building
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO5	To what extent you are able to select a suitable type of surveying based on topographical requirement
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5

CO->PO MAPPING - CE100 - Basics of Civil Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1					2		3			1	2	2
CO2	2	2				1	3				2	2
CO3	2						3	1			2	2

CO4							3				2	2
CO5	1						3				2	2

CO->PSO MAPPING - CE100 - Basics of Civil Engineering

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - CE100 - Basics of Civil Engineering

CE100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	2			2	1	3	1		1	2	2

COURSE->PSO MAPPING - CE100 - Basics of Civil Engineering

CE100/PSO	PSO1	PSO2	PSO3	PSO4

BE100

Course Code	Course Name	L-T-P:C	Year of Introduction
BE100	Engineering Mechanics	3-1-0:4	2016

No.	Course Outcome - BE100 - Engineering Mechanics	Target
CO1	Analyse reactions of various supports under equilibrium	55%
CO2	Determine the forces in planar and spatial systems	55%
CO3	Comprehend the properties of planes and solids	55%
CO4	Determine friction under static conditions	55%
CO5	Identify basic concepts of dynamic problems	55%

COURSE END SURVEY - BE100 - Engineering Mechanics

Sl.No	Questions & Options
CO1	To what extend you are able to determine the reactions of various supports under equilibrium condition
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO2	To what extend you are able to determine the forces in planar and spatial systems

	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO3	How far you are able to comprehend the properties of planes and solids
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO4	How far you are able to determine the friction under static conditions
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO5	How far you are able to identify the basic concepts of dynamic problems
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5

CO->PO MAPPING - BE100 - Engineering Mechanics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	3	2							2
CO2	3	2		3	2							2
CO3	3	2	2	3	2						3	2
CO4	3	2		3	2						3	2
CO5	3	2		3	2							2

CO->PSO MAPPING - BE100 - Engineering Mechanics

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1		2		1
CO2		1		
CO3		3		
CO4		3		1
CO5		2		3

COURSE->PO MAPPING - BE100 - Engineering Mechanics

BE100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	2	3	2						3	2

COURSE->PSO MAPPING - BE100 - Engineering Mechanics

BE100/PSO	PSO1	PSO2	PSO3	PSO4
		3		3

EC110

Course Code	Course Name	L-T-P:C	Year of Introduction
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EC110	Electronics Engineering Workshop	0-0-2:1	2016
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No.	Course Outcome - EC110 - Electronics Engineering Workshop	Target
CO1	Identify and select necessary components used in various electronic circuits and testing using a multimeter	76%
CO2	Generate waveforms with required frequency and amplitude using function generator and measure voltage, frequency and phase of any waveform using CRO.	72%
CO3	Analyze characteristics of simple circuits like rectifiers, multivibrators ,logic gates using transistors etc using bread board and soldering	72%
CO4	Demonstrate the working of Public Address System	72%
CO5	To simulate electronics circuits using LTSPICE and study the response	72%

COURSE END SURVEY - EC110 - Electronics Engineering Workshop

Sl.No	Questions & Options
CO1	To what extent you are able to identify and select necessary components used in various electronic circuits and testing using a multimeter
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO2	To what extent you are able to generate waveforms with required frequency and amplitude using function generator and measure voltage, frequency and phase of any waveform using CRO.
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO3	To what extent you are able to analyze characteristics of simple circuits like rectifiers, multivibrators ,logic gates using transistors etc using bread board and soldering
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO4	To what extent you are able to demonstrate the working of Public Address System
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO5	To what extent you are able to to simulate electronics circuits using LTSPICE and study the response
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5

CO->PO MAPPING - EC110 - Electronics Engineering Workshop

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3				3				3	2		2
CO2	3		2		2				3	2		
CO3	3				2				3	2		
CO4	3		3		2	2			3	2		
CO5	3	2	3		2				3	2		

CO->PSO MAPPING - EC110 - Electronics Engineering Workshop

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1			1	
CO2			1	
CO3			1	
CO4			1	
CO5			1	

COURSE->PO MAPPING - EC110 - Electronics Engineering Workshop

EC110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	3		3	2			3	2		2

COURSE->PSO MAPPING - EC110 - Electronics Engineering Workshop

EC110/PSO	PSO1	PSO2	PSO3	PSO4
			1	

PH110

Course Code	Course Name	L-T-P:C	Year of Introduction
PH110	Engineering Physics Lab	0-0-2:1	2016

No.	Course Outcome - PH110 - Engineering Physics Lab	Target
CO1	Measure basic physical quantities, such as voltage, frequency, temperature etc and evaluate measurement accuracy.	70%
CO2	Measure and analyse the properties of electrical and acoustic waves and oscillations, and demonstrate resonance.	70%
CO3	Demonstrate wave-like properties of light and measure the wavelength of monochromatic light sources	70%
CO4	Illustrate the propagation of light through an optical fibre and measure its numerical aperture	70%
CO5	Demonstrate the working of devices such as solar cells and photoelectric cells	70%
CO6	Organize an experimental set up and measure fundamental constants such as the Planck's constant.	70%

COURSE END SURVEY - PH110 - Engineering Physics Lab

Sl.No	Questions & Options
CO1	To what extent you are able to Measure basic physical quantities, such as voltage, frequency, temperature etc and evaluate measurement accuracy.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO2	To what extend you are able to measure and analyse the properties of electrical and acoustic waves and oscillations, and demonstrate resonance.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	To what extend you are able to demonstrate wave-like properties of light and measure the wavelength of monochromatic light sources
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extend you are able to illustrate the propagation of light through an optical fibre and measure its numerical aperture
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extend you are able to demonstrate the working of devices such as solar cells and photoelectric cells
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO6	To what extend you are able to organize an experimental set up and measure fundamental constants such as the Planck's constant.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - PH110 - Engineering Physics Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2		2	2							
CO2	3	3		2	2							
CO3	3	3		2	2							
CO4	3	3		2	2							
CO5	3	2		2	2							
CO6	3	3		2	3							

CO->PSO MAPPING - PH110 - Engineering Physics Lab

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

COURSE->PO MAPPING - PH110 - Engineering Physics Lab

PH110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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	3	3		2	3							
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COURSE->PSO MAPPING - PH110 - Engineering Physics Lab

PH110/PSO	PSO1	PSO2	PSO3	PSO4

BE102

Course Code	Course Name	L-T-P:C	Year of Introduction
BE102	Design & Engineering	2-0-2:3	2016

No.	Course Outcome - BE102 - Design & Engineering	Target
CO1	Identify the different elements involved in good designs and practice them when called for.	66%
CO2	Solve the different stages of Design and formulate detailed designs with solid modeling and visualization.	66%
CO3	Develop the prototype and propose various stages towards final product design.	62%
CO4	Build a broader perspective of design covering the function, cost, environmental sensitivity, safety and factors other than from engineering analysis	62%
CO5	Identify product oriented and user oriented aspects that make the customer required design.	60%
CO6	Utilize various modern engineering methods and build basic knowledge of Intellectual Property Rights.	62%

COURSE END SURVEY - BE102 - Design & Engineering

Sl.No	Questions & Options
CO1	How far you have been able to identify the different elements involved in good designs and practice them when called for?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	How far you have been able to solve the different stages of design and formulate detailed designs with solid modeling and visualization?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	How far you have been able to develop the prototype and propose various stages towards final product design.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	How far you have been able to build a broader perspective of design covering the function, cost, environmental sensitivity, safety and factors other than from engineering analysis
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	How far you have been able to Identify product oriented and user oriented aspects that make the customer required design?

	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO6	How far you have been able to utilize various modern engineering methods and build basic knowledge of Intellectual Property Rights.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - BE102 - Design & Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3		2	3	2	3		2		
CO2	3	2	3		2				1	3		
CO3	3	2	3		2				3	3	3	
CO4	3	2	3		2	1	3	3		2		
CO5	3	2	3		3							
CO6	3	2	3	2	2	2		3		3		3

CO->PSO MAPPING - BE102 - Design & Engineering

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	2	2
CO2	2	2	2	2
CO3	2	2	2	2
CO4	2	2	2	2
CO5	2	2	2	2
CO6	2	2	2	2

COURSE->PO MAPPING - BE102 - Design & Engineering

BE102/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	3	2	3	3	3	3	3	3	3	3

COURSE->PSO MAPPING - BE102 - Design & Engineering

BE102/PSO	PSO1	PSO2	PSO3	PSO4
	2	2	2	2

CY100

Course Code	Course Name	L-T-P:C	Year of Introduction
CY100	Engineering Chemistry	3-1-0:4	2016

No.	Course Outcome - CY100 - Engineering Chemistry	Target
CO1	Demonstrate the principles of spectroscopy and apply them to explain chemical phenomena	65%
CO2	Illustrate principles and applications of various electrochemical techniques and cells.	65%
CO3	Describe instrumental methods like chromatography, conductivity and thermal analysis for chemical analysis.	60%
CO4	Recognize the properties and applications of engineering materials, such as polymers and nanomaterials	65%
CO5	Evaluate the properties of complex chemicals such as fuels and lubricants.	65%
CO6	Describe the properties of water and identify methods for water purification	65%

COURSE END SURVEY - CY100 - Engineering Chemistry

Sl.No	Questions & Options
CO1	To what extent you are able to explain the principles of spectroscopy and apply them to explain chemical phenomena
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO2	To what extent you are able to explain the principles and applications of various electrochemical techniques and cells.
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO3	To what extent you are able to apply instrumental methods like chromatography, conductivity and thermal analysis for chemical analysis.
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO4	To what extent you are able to recognize the properties and applications of engineering materials, such as polymers and nanomaterials
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO5	To what extent you are able to evaluate the properties of complex chemicals such as fuels and lubricants.
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO6	To what extent you are able to describe the properties of water and identify methods for water purification
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>

CO->PO MAPPING - CY100 - Engineering Chemistry

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2	3	3	3					3
CO2	3	3	2	2	3				1			
CO3	3	2	2	3	3			2		1		
CO4	3	2	2	2	3	1				1		

CO5	3	2	2	2	3	2	1					
CO6	3	2	2			3						2

CO->PSO MAPPING - CY100 - Engineering Chemistry

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

COURSE->PO MAPPING - CY100 - Engineering Chemistry

CY100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2	3	3	3	3	2	1	1		3

COURSE->PSO MAPPING - CY100 - Engineering Chemistry

CY100/PSO	PSO1	PSO2	PSO3	PSO4

EC100

Course Code	Course Name	L-T-P:C	Year of Introduction
EC100	Basics of Electronics Engineering	2-1-0:3	2016

No.	Course Outcome - EC100 - Basics of Electronics Engineering	Target
CO1	Identify and select necessary components used in various electronic circuits.	60.5%
CO2	Design and organize simple circuits using different types of diodes and transistors	60.5%
CO3	Demonstrate the working of analog circuits such as rectifiers, amplifiers and oscillators.	60.5%
CO4	Illustrate the working of basic building blocks of analog and digital systems such as Operational amplifiers and Logic gates.	60.5%
CO5	Demonstrate the use of basic measuring instruments used in electronics work.	60.5%
CO6	Compare and contrast various modulation techniques, communication systems and TV signal transmission techniques.	60.5%

COURSE END SURVEY - EC100 - Basics of Electronics Engineering

Sl.No	Questions & Options
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CO1	To what extent you are able to identify and select necessary components used in various electronic circuits.
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO2	To what extent you are able to design and organize simple circuits using different types of diodes and transistors
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO3	To what extent you are able to demonstrate the working of analog circuits such as rectifiers, amplifiers and oscillators.
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO4	To what extent you are able to Illustrate the working of basic building blocks of analog and digital systems such as Operational amplifiers and Logic gates.
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO5	To what extent you are able to demonstrate the use of basic measuring instruments used in electronics work.
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO6	To what extent you are able to compare and contrast various modulation techniques, communication systems and TV signal transmission techniques.
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5

CO->PO MAPPING - EC100 - Basics of Electronics Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3			1								2
CO2	3		3									2
CO3	3			2								
CO4	3		3	2								3
CO5	3			2								
CO6	3			2	2							2

CO->PSO MAPPING - EC100 - Basics of Electronics Engineering

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1		2		
CO2		2		
CO3		2		
CO4		2		
CO5		2		
CO6		2		

COURSE->PO MAPPING - EC100 - Basics of Electronics Engineering

EC100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3		3	2	2							3

COURSE->PSO MAPPING - EC100 - Basics of Electronics Engineering

EC100/PSO	PSO1	PSO2	PSO3	PSO4
		2		

CE110

Course Code	Course Name	L-T-P:C	Year of Introduction
CE110	Civil Engineering Workshop	0-0-2:1	2016

No.	Course Outcome - CE110 - Civil Engineering Workshop	Target
CO1	Apply the basic measuring techniques, like linear, area, volume calculations, to various civil engineering applications.	65%
CO2	Set out buildings using modern methods	65%
CO3	Identify materials for the construction of a building.	65%
CO4	Coordinate the work related to masonry, plumbing, and sanitary fittings.	65%
CO5	Compute the level difference between points.	65%

COURSE END SURVEY - CE110 - Civil Engineering Workshop

Sl.No	Questions & Options
CO1	To what extent you can able to apply the basic measuring techniques, like linear, area, volume calculations, to various civil engineering applications.
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	How far you are able to set out buildings using modern methods
	Answer Choice- <i>5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5</i>
CO3	How far you are able to identify materials for the construction of a building.
	Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>
CO4	To what extent you can able to coordinate the work related to masonry, plumbing, and sanitary fittings.
	Answer Choice- <i>5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5</i>
CO5	How far you are able to compute the level difference between points.
	Answer Choice- <i>5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5</i>

CO->PO MAPPING - CE110 - Civil Engineering Workshop

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2			2	2		2				2	
CO2	2			2	2		2				2	
CO3	2			2	2		2				2	
CO4	2			2	2		2				2	
CO5	2			2	2		2				2	

CO->PSO MAPPING - CE110 - Civil Engineering Workshop

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1		1	1
CO2	2		1	
CO3		1	1	
CO4	1	1	1	
CO5	2	1	1	

COURSE->PO MAPPING - CE110 - Civil Engineering Workshop

CE110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2			2	2		2				2	

COURSE->PSO MAPPING - CE110 - Civil Engineering Workshop

CE110/PSO	PSO1	PSO2	PSO3	PSO4
	2	1	1	1

CY110

Course Code	Course Name	L-T-P:C	Year of Introduction
CY110	Engineering Chemistry Lab	0-0-2:1	2016

No.	Course Outcome - CY110 - Engineering Chemistry Lab	Target
CO1	Analyse and measure the quality of water and environmental pollution.	70%
CO2	Analyse and identify unknown compounds from spectral measurements.	70%
CO3	Prepare different polymers for industrial applications.	70%
CO4	Find the strength and pH of unknown solutions using different instrumental methods.	70%
CO5	Measure the percentage of metal present in metal ore.	70%

CO6	Apply and demonstrate theoretical concepts of Engineering Chemistry.	70%
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COURSE END SURVEY - CY110 - Engineering Chemistry Lab

Sl.No	Questions & Options
CO1	To what extent you are able to analyse and measure the quality of water and environmental pollution.
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO2	To what extent you are able to analyse and identify unknown compounds from spectral measurements.
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO3	To what extent you are able to prepare different polymers for industrial applications.
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO4	To what extent you are able to find the strength and pH of unknown solutions using different instrumental methods.
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO5	To what extent you are able to measure the percentage of metal present in metal ore.
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO6	To what extent you are able to apply and demonstrate theoretical concepts of Engineering Chemistry.
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>

CO->PO MAPPING - CY110 - Engineering Chemistry Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	2	3	3	3		2	2		2
CO2	3	2		2	1				2	2		
CO3	3	2	2	2	1				2	2	3	3
CO4	3	2	3	2	3				2	2		
CO5	3	2	3		3				2	2		
CO6	3	2	3	3	3	3				2	1	2

CO->PSO MAPPING - CY110 - Engineering Chemistry Lab

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	3	3	3
CO2	3	3	3	3
CO3	3	3	3	3
CO4	3	3	3	3
CO5	3	3	3	3

CO6	3	3	3	3
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COURSE->PO MAPPING - CY110 - Engineering Chemistry Lab

CY110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	3	3	3	3	3		2	2	3	3

COURSE->PSO MAPPING - CY110 - Engineering Chemistry Lab

CY110/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	3

MAT102

Course Code	Course Name	L-T-P:C	Year of Introduction
MAT102	VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS	3-1-0:4	2019

No.	Course Outcome - MAT102 - VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS	Target
CO1	Apply the concept of vector functions and learn to work with conservative vector field	60%
CO2	Evaluate surface and volume integrals and study their relationship and applications	60%
CO3	Solve homogeneous and non-homogeneous linear differential equation with constant coefficients	60%
CO4	Use Laplace transform for engineering applications specially for ODEs arising from engineering problems	60%
CO5	Utilize Fourier transforms to solve physical problems arising in engineering	60%

COURSE END SURVEY - MAT102 - VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS

Sl.No	Questions & Options
CO1	To what extend are you able to apply the concept of vector functions and learn to work with conservative vector field
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	To what extend are you able to evaluate surface and volume integrals and study their relationship and applications
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	To what extend are you able to solve homogeneous and non-homogeneous linear differential equation with constant coefficients
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO4	To what extend are you able to use Laplace transform for engineering applications specially for ODEs arising from engineering problems
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extend are you able to utilize Fourier transforms to solve physical problems arising in engineering
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - MAT102 - VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3							1			
CO2	3	3							1			
CO3	3	3							1			
CO4	3	3							1			
CO5	3	3							1			

CO->PSO MAPPING - MAT102 - VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - MAT102 - VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS

MAT102/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3							1			

COURSE->PSO MAPPING - MAT102 - VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS

MAT102/PSO	PSO1	PSO2	PSO3	PSO4

PHT110

Course Code	Course Name	L-T-P:C	Year of Introduction
PHT110	ENGINEERING PHYSICS B	3-1-0:4	2019

No.	Course Outcome - PHT110 - ENGINEERING PHYSICS B	Target
CO1	Compute the quantitative aspects of waves and oscillations in engineering systems.	55%

CO2	Apply the interaction of light with matter through interference, diffraction and identify these phenomena in different natural optical processes and optical instruments.	55%
CO3	Analyze the behaviour of matter in the atomic and subatomic level through the principles of quantum mechanics to perceive the microscopic processes in electronic devices.	55%
CO4	Apply the knowledge of ultrasonics in non-destructive testing and use the principles of acoustics to explain the nature and characterization of acoustic design and to provide a safe and healthy environment	55%
CO5	Apply the comprehended knowledge about laser and fibre optic communication systems in various engineering applications	55%

COURSE END SURVEY - PHT110 - ENGINEERING PHYSICS B

Sl.No	Questions & Options
CO1	To What extend you are able to compute the quantitative aspects of waves and oscillations in engineering systems. Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To What extend you are able to Apply the interaction of light with matter through interference, diffraction and identify these phenomena in different natural optical processes and optical instruments. Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extend you are able to Analyze the behaviour of matter in the atomic and subatomic level through the principles of quantum mechanics to perceive the microscopic processes in electronic devices. Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To what extend you are able to Apply the knowledge of ultrasonics in non-destructive testing and use the principles of acoustics to explain the nature and characterization of acoustic design and to provide a safe and healthy environment Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extend you are able to Apply the comprehended knowledge about laser and fibre optic communication systems in various engineering applications Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - PHT110 - ENGINEERING PHYSICS B

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3				2			1	2			1
CO2	3				2			1	2			1
CO3	3				2			1	2			1
CO4	3				2			1	2			1
CO5	3				2			1	2			1

CO->PSO MAPPING - PHT110 - ENGINEERING PHYSICS B

CO/PSO	PSO1	PSO2	PSO3	PSO4
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CO1				
CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - PHT110 - ENGINEERING PHYSICS B

PHT110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3				2			1	2			1

COURSE->PSO MAPPING - PHT110 - ENGINEERING PHYSICS B

PHT110/PSO	PSO1	PSO2	PSO3	PSO4

EST100

Course Code	Course Name	L-T-P:C	Year of Introduction
EST100	ENGINEERING MECHANICS	2-1-0:3	2019

No.	Course Outcome - EST100 - ENGINEERING MECHANICS	Target
CO1	Revise the basic principles of statics and evaluate reactions under equilibrium	55%
CO2	Analyze planar and spatial force systems	55%
CO3	Determine friction under static conditions	55%
CO4	Comprehend the properties of planes and solids	55%
CO5	Identify basic concepts of kinetics and kinematics	55%
CO6	Assess the concept of vibrations	55%

COURSE END SURVEY - EST100 - ENGINEERING MECHANICS

Sl.No	Questions & Options
CO1	To what extend you are able to Revise the basic principles of statics and evaluate reactions under equilibrium
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	To what extend you are able to analyze planar and spatial force systems
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	To what extend you are able to determine friction under static conditions

	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extend you are able to comprehend the properties of planes and solids
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extend you are able to identify basic concepts of kinetics and kinematics
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO6	To what extend you are able to assess the concept of vibration
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - EST100 - ENGINEERING MECHANICS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1		1		1				1	
CO2	3	2			2		1				2	
CO3	3	1	2								1	
CO4	3	3	2		1						2	
CO5	3	2	1		2						1	
CO6	3	3	1								1	

CO->PSO MAPPING - EST100 - ENGINEERING MECHANICS

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

COURSE->PO MAPPING - EST100 - ENGINEERING MECHANICS

EST100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2		2		1				2	

COURSE->PSO MAPPING - EST100 - ENGINEERING MECHANICS

EST100/PSO	PSO1	PSO2	PSO3	PSO4

EST120

Course Code	Course Name	L-T-P:C	Year of Introduction
EST120	BASICS OF CIVIL & MECHANICAL ENGINEERING	2-0-0:4	2019

No.	Course Outcome - EST120 - BASICS OF CIVIL & MECHANICAL ENGINEERING	Target
CO1	Discuss the relevance of Civil Engineering, buildings and its codal provisions	65%
CO2	Comprehend the concept of surveying and identify various building materials	65%
CO3	Examine the different components of a building and identify type of construction to be employed	65%
CO4	Compare various cycles involved in different thermodynamic processes	60%
CO5	Analyze different power transmission devices	60%
CO6	Demonstrate working knowledge on manufacturing processes and machining operations	60%

COURSE END SURVEY - EST120 - BASICS OF CIVIL & MECHANICAL ENGINEERING

Sl.No	Questions & Options
CO1	to what extend you understood the relevance of civil engineering, buildings and its codal provisions?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	how much you will be able to understand the concept of surveying and identify various building materials?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	to what extend you are able to identify type of construction to be employed and different components of a building?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	how much you are able to compare the cycles involve different thermodynamic process?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	to what extend you are able to analyse power transmission devices?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	to what extend you understand about manufacturing process and machining operations?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - EST120 - BASICS OF CIVIL & MECHANICAL ENGINEERING

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	1			2	2	1		1	1	
CO2	1					1	1			1		1
CO3	2	1	1									1
CO4	3		1							1		

CO5		1	1			1			1			
CO6	1		1					1				

CO->PSO MAPPING - EST120 - BASICS OF CIVIL & MECHANICAL ENGINEERING

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				1
CO2	1	1		
CO3	1			
CO4	1	1		
CO5		1		
CO6			1	

COURSE->PO MAPPING - EST120 - BASICS OF CIVIL & MECHANICAL ENGINEERING

EST120/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	1	1			2	2	1	1	1	1	1

COURSE->PSO MAPPING - EST120 - BASICS OF CIVIL & MECHANICAL ENGINEERING

EST120/PSO	PSO1	PSO2	PSO3	PSO4
	1	1	1	1

HUN102

Course Code	Course Name	L-T-P:C	Year of Introduction
HUN102	PROFESSIONAL COMMUNICATION	2-0-2:4	2019

No.	Course Outcome - HUN102 - PROFESSIONAL COMMUNICATION	Target
CO1	Use vocabulary and language skills relevant to engineering as a profession.	65%
CO2	Analyze, interpret and effectively summarize a variety of textual content.	65%
CO3	Create effective technical presentations	65%
CO4	Discuss a given technical/ non-technical topic in a group setting and arrive at generalizations/consensus.	65%
CO5	Identify drawbacks in listening patterns and apply listening techniques for specific needs.	65%
CO6	Assess and create professional and technical documents that are clear and adhering to all the necessary conventions.	65%

COURSE END SURVEY - HUN102 - PROFESSIONAL COMMUNICATION

Sl.No	Questions & Options
CO1	To what extend can you develop and use vocabulary and language skills relevant to engineering profession?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO2	To what extend can you analyze, interpret and summarize a variety of textual content effectively?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO3	To what extend can you create effective technical presentations?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO4	To what extend can you discuss about a given technical/ non- technical topic in a group setting and arrive at a consensus??
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO5	To what extend can you identify drawbacks in listening patterns and apply listening techniques for specific needs?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO6	To what extend can you assess and create professional and technical documents that are clear and adhering to all the necessary conventions?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5

CO->PO MAPPING - HUN102 - PROFESSIONAL COMMUNICATION

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	1	1						3		3
CO2		2								3		3
CO3									3	3		
CO4										3		2
CO5		2							3	3		
CO6		2	2	2						3		

CO->PSO MAPPING - HUN102 - PROFESSIONAL COMMUNICATION

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1			1	
CO2				
CO3				1
CO4			1	
CO5				

CO6				
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COURSE->PO MAPPING - HUN102 - PROFESSIONAL COMMUNICATION

HUN102/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	1	2	2	2					3	3		3

COURSE->PSO MAPPING - HUN102 - PROFESSIONAL COMMUNICATION

HUN102/PSO	PSO1	PSO2	PSO3	PSO4
			1	1

PHL120

Course Code	Course Name	L-T-P:C	Year of Introduction
PHL120	ENGINEERING PHYSICS LAB	0-0-2:1	2019

No.	Course Outcome - PHL120 - ENGINEERING PHYSICS LAB	Target
CO1	Apply modern instruments like CRO, strain gauge to measure the basic physical quantities viz. frequency and amplitude of a wave pattern, strain etc. Carryout measurement of wave pattern in a stretched string and the corresponding frequency values using a Melde's string apparatus.	60%
CO2	Determine the wavelength of monochromatic beam of light and thickness of micro-thin object etc. by forming Newton's rings pattern and an air wedge fringe pattern.	60%
CO3	Carryout the measurement of wavelength by diffraction of plane transmission grating and the spectra formed by a monochromatic beam of light and a laser.	60%
CO4	Determine the wavelength of a laser beam using the plane transmission grating. Measurement of numerical aperture of an optic fibre and evaluate the properties of a solar cell and LED through its I-V characteristics.	60%
CO5	Determine the velocity of ultrasonic waves in liquid using ultrasonic diffractometer. Compare the magnetic moment of various magnets and determine the magnetic flux density using deflection/vibration Magnetometer.	60%

COURSE END SURVEY - PHL120 - ENGINEERING PHYSICS LAB

Sl.No	Questions & Options
CO1	To what extend you are able to Apply modern instruments like CRO, strain gauge to measure the basic physical quantities viz. frequency and amplitude of a wave pattern, strain etc. Carryout measurement of wave pattern in a stretched string and the corresponding frequency values using a Melde's string apparatus. Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extend you are able to Determine the wavelength of monochromatic beam of light and thickness of micro-thin object etc. by forming Newton's rings pattern and an air wedge fringe pattern. Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO3	To what extend you are able to Carryout the measurement of wavelength by diffraction of plane transmission grating and the spectra formed by a monochromatic beam of light and a laser.
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To what extend you are able to Determine the wavelength of a laser beam using the plane transmission grating.Measurement of numerical aperture of an optic fibre and evaluate the properties of a solar cell and LED through its I-V characteristics.
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extend you are able to Determine the velocity of ultrasonic waves in liquid using ultrasonic diffractometer.Compare the magnetic moment of various magnets and determine the magnetic flux density using deflection/vibration Magnetometer
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - PHL120 - ENGINEERING PHYSICS LAB

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3				2					2		3
CO2	3				2					3		
CO3	3				2					3		
CO4	3				2					3		
CO5	3				2					3		

CO->PSO MAPPING - PHL120 - ENGINEERING PHYSICS LAB

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - PHL120 - ENGINEERING PHYSICS LAB

PHL120/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3				2					3		3

COURSE->PSO MAPPING - PHL120 - ENGINEERING PHYSICS LAB

PHL120/PSO	PSO1	PSO2	PSO3	PSO4

ESL120

Course Code	Course Name	L-T-P:C	Year of Introduction
ESL120	CIVIL & MECHANICAL WORKSHOP	0-0-2:1	2019

No.	Course Outcome - ESL120 - CIVIL & MECHANICAL WORKSHOP	Target
CO1	Apply the modern measuring techniques for linear, area, volume calculations and carry out setting out operations	65%
CO2	Compute the level difference between points	65%
CO3	Co-ordinate the work related to masonry , plumbing, sanitary fittings and design of rain water harvesting systems	65%
CO4	Demonstrate various manufacturing processes in basic mechanical engineering workshops like smithy, carpentry, foundry and fitting	65%
CO5	Demonstrate the operations of various machine tools like lathe, milling, drilling and shaping machines	65%
CO6	Assemble and disassemble machines like IC Engines	65%

COURSE END SURVEY - ESL120 - CIVIL & MECHANICAL WORKSHOP

Sl.No	Questions & Options
CO1	To what extent you are able to apply modern measuring techniques for linear, area and volume calculations and carry out setting out operations
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	To what extent you are able to compute the level difference between points for a civil work
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	To what extent you are able to coordinate the work related to masonry, plumbing, sanitary fittings and design of rain water harvesting system for a residential building construction
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extent you are able to select smithy, carpentry, foundry and fitting for a particular engineering job
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extent you are able to choose the various machine tools like lathe, milling, drilling and shaping machines for your machining requirement
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO6	To what extent you are able to assemble and disassemble simple machine components
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - ESL120 - CIVIL & MECHANICAL WORKSHOP

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO1	2	2	3	3	2				2	2		
CO2	2	2	3	3	2				2	2		
CO3	2	2	3	3	2				2	2		
CO4	2	2	3	3	2				2	2		
CO5	2	2	3	3	2				2	2		
CO6	2	2	3	3	2				2	2		

CO->PSO MAPPING - ESL120 - CIVIL & MECHANICAL WORKSHOP

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

COURSE->PO MAPPING - ESL120 - CIVIL & MECHANICAL WORKSHOP

ESL120/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	2	3	3	2				2	2		

COURSE->PSO MAPPING - ESL120 - CIVIL & MECHANICAL WORKSHOP

ESL120/PSO	PSO1	PSO2	PSO3	PSO4

EST102

Course Code	Course Name	L-T-P:C	Year of Introduction
EST102	PROGRAMMING IN C	2-1-2:4	2019

No.	Course Outcome - EST102 - PROGRAMMING IN C	Target
CO1	Analyse a computational problem and develop an algorithm/ flow chart to find its solution.	56%
CO2	Develop C programs with branching and looping statements which uses Arithmetic, Logical, Relational or Bitwise operators.	56%
CO3	Develop C programs using arrays,structure and union for storing the data to be processed.	56%
CO4	Divide a given computational problem into a number of modules and develop a readable multi-function C program by using recursion if required, to find the solution to the computational problem.	56%

CO5	Develop C programs which use pointers for array processing and parameter passing	56%
CO6	Develop C programs with files for reading input and storing output.	56%

COURSE END SURVEY - EST102 - PROGRAMMING IN C

Sl.No	Questions & Options
CO1	Are you able to analyse a computational problem and develop an algorithm/ flow chart to find its solution?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO2	Are you able to develop C programs with branching and looping statements which uses Arithmetic , Logical , Relational or Bitwise operators?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO3	Are you able to develop C programs with arrays , structure or union for storing the data to be processed?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO4	Are you able to divide a given computational problem into a number of modules and develop a readable multi-function C program by using recursion if required, to find the solution to the computational problem?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO5	Are you able to develop C programs which use pointers for array processing and parameter passing?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO6	Are you able to develop C programs with files for reading input and storing output?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5

CO->PO MAPPING - EST102 - PROGRAMMING IN C

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3		2				3		3
CO2	3	3	3	2	3							2
CO3	3	3	3	2	3							2
CO4	3	3	3	3	3					3		3
CO5	3	3			3							2
CO6	3	3			3							2

CO->PSO MAPPING - EST102 - PROGRAMMING IN C

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				

CO4				
CO5				
CO6				

COURSE->PO MAPPING - EST102 - PROGRAMMING IN C

EST102/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	2				3		3

COURSE->PSO MAPPING - EST102 - PROGRAMMING IN C

EST102/PSO	PSO1	PSO2	PSO3	PSO4

SEMESTER-3**MA201**

Course Code	Course Name	L-T-P:C	Year of Introduction
MA201	Linear Algebra & Complex Analysis	3-1-0:4	2016

No.	Course Outcome - MA201 - Linear Algebra & Complex Analysis	Target
CO1	Identify and study analytic functions and harmonic functions	60%
CO2	Recognize conformal mapping and find regions that are mapped under certain transformations	60%
CO3	Evaluate contour integrals using the theory of complex variables	60%
CO4	Evaluate real definite integrals as an application of residue theorem	60%
CO5	Solve systems of equations	60%
CO6	Compute eigen values and diagonalise a matrix	60%

COURSE END SURVEY - MA201 - Linear Algebra & Complex Analysis

Sl.No	Questions & Options
CO1	To what extent are you able to identify and study analytic functions and harmonic functions ?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extent are you able to recognise conformal mapping and find regions that are mapped under certain transformations ?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extent are you able to evaluate contour integrals using the theory of complex variables ?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO4	To what extent are you able to evaluate real definite integrals as application of residue theorem ?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extent are you able to solve systems of equations ?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	To what extent are you able to compute eigen values and diagonalise a matrix
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - MA201 - Linear Algebra & Complex Analysis

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3		3	2							
CO2	3	3		3	2							
CO3	3	3		3	2							
CO4	3	3		3	2							
CO5	3	3		3	2							
CO6	3	3		3	2							

CO->PSO MAPPING - MA201 - Linear Algebra & Complex Analysis

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				1
CO2				1
CO3				1
CO4				1
CO5				1
CO6				1

COURSE->PO MAPPING - MA201 - Linear Algebra & Complex Analysis

MA201/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3		3	2							

COURSE->PSO MAPPING - MA201 - Linear Algebra & Complex Analysis

MA201/PSO	PSO1	PSO2	PSO3	PSO4
				1

ME201

Course Code	Course Name	L-T-P:C	Year of Introduction
ME201	Mechanics of Solids	3-1-0:4	2016

No.	Course Outcome - ME201 - Mechanics of Solids	Target
CO1	To gain a fundamental understanding of the concepts of stress and strain by analyzing different solids and structures	60%
CO2	Equip the students with the tools necessary to solve mechanics problems, which involve static analysis of a component to find the internal reactions and moments.	60%
CO3	To learn fundamental principles of equilibrium, compatibility and force-deformation relationship and principle of superposition in linear solids and structures	60%
CO4	Analyze and design structural members subjected to tension, compression, torsion, bending and combined stresses using the fundamental concepts of stress, strain and elastic behaviour of materials	60%
CO5	Utilize appropriate materials in design considering engineering properties, sustainability, cost and weight.	60%
CO6	Procure confidence in designing columns subjected to compressive loading based on Eulers and Rankines equation	60%

COURSE END SURVEY - ME201 - Mechanics of Solids

Sl.No	Questions & Options
CO1	To what extent were you able to gain a fundamental understanding of the concepts of stress and strain by analyzing different solids and structures
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO2	How far are you equipped with the tools necessary to solve mechanics problems, which involve static analysis of a component
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO3	How far the course has helped you to learn fundamental principles of equilibrium, compatibility and force-deformation relationship and principle of superposition in linear solids and structures
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>
CO4	By the course, you were able to analyse and design structural members subjected to tension, compression, torsion, bending and combined stresses using the fundamental concepts of stress, strain and elastic behaviour of materials
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO5	To what extent, did you learn to Utilize appropriate materials in design considering engineering properties, sustainability, cost and weight.
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO6	

CO->PO MAPPING - ME201 - Mechanics of Solids

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	2		1	1			1	2	1
CO2	2	2	2	1		2			1	2	1	1
CO3	3	2	1	2	1	2		1	2	2	1	2
CO4	3	2	1	1	1	2	2	1	1	1	2	2
CO5	2	2	2	2	1	2	2	1	2	2	1	3
CO6	2	2	2	2	1	1		1		1		2

CO->PSO MAPPING - ME201 - Mechanics of Solids

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	1	1	1
CO2	2	2	1	1
CO3	2	2	1	2
CO4	2	1	2	2
CO5	2	2	1	2
CO6	2	1	1	1

COURSE->PO MAPPING - ME201 - Mechanics of Solids

ME201/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	3	2	1	2	2	1	2	2	2	3

COURSE->PSO MAPPING - ME201 - Mechanics of Solids

ME201/PSO	PSO1	PSO2	PSO3	PSO4
	2	2	2	2

ME200

Course Code	Course Name	L-T-P:C	Year of Introduction
ME200	Fluid Mechanics & Machinery	3-1-0:4	2016

No.	Course Outcome - ME200 - Fluid Mechanics & Machinery	Target
CO1	Identify properties of fluids and solve problems related to fluid statics	60%
CO2	Design and analyze fluid pressure measuring devices.	65%
CO3	Analyze the flow of fluids through pipes, loss due to friction and rectify problems faced in practical cases of flow applications.	65%

CO4	Analyze the flow of fluids through flat plates, effect of boundary layer, flow measuring devices.	65%
CO5	Illustrate the design, construction, selection and application of hydraulic turbines .	65%
CO6	Illustrate the design, construction, selection and application of different types of pumps.	65%

COURSE END SURVEY - ME200 - Fluid Mechanics & Machinery

Sl.No	Questions & Options
CO1	CO2
CO3	CO4
CO5	CO6

CO->PO MAPPING - ME200 - Fluid Mechanics & Machinery

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2		1	3	1	2			1		1	
CO2		3	3	2		1		1		2		
CO3	1	2		2			2					1
CO4	3		1				1		2			
CO5	1				1					2		1
CO6		2		2			1			1		

CO->PSO MAPPING - ME200 - Fluid Mechanics & Machinery

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2		3	
CO2		1		2
CO3	1		2	
CO4	1		3	
CO5	1		2	
CO6	1			1

COURSE->PO MAPPING - ME200 - Fluid Mechanics & Machinery

ME200/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	1	2	2	1	2	2	1	1

COURSE->PSO MAPPING - ME200 - Fluid Mechanics & Machinery

ME200/PSO	PSO1	PSO2	PSO3	PSO4
	2	1	3	2

AU201

Course Code	Course Name	L-T-P:C	Year of Introduction
AU201	S I Engines & Combustion	3-1-0:4	2016

No.	Course Outcome - AU201 - S I Engines & Combustion	Target
CO1	Explain basic concepts of SI Engine and Combustion, automotive engines	60%
CO2	Identify engine components and their functions	60%
CO3	Differentiate between ideal and actual cycles and problems	60%
CO4	Analyse lubrication, cooling, ignition and fuel systems in SI engines.	60%
CO5	Demonstrate the constructional details and working of engine components	60%
CO6	Examine the basic concepts of SI Engines and Combustion, and identify the systems used for fuel injection.	60%

COURSE END SURVEY - AU201 - S I Engines & Combustion

Sl.No	Questions & Options
CO1	Are you able to explain basic concepts of SI Engine and Combustion, automotive engines
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO2	Are you able to identify engine components and their functions
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO3	Can you differentiate between ideal and actual cycles and problems
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO4	CO5
CO6	

CO->PO MAPPING - AU201 - S I Engines & Combustion

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	2	2	2	1	1	1	1	2
CO2	3	3	3	2	2							
CO3												
CO4												
CO5												
CO6												

CO->PSO MAPPING - AU201 - S I Engines & Combustion

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

COURSE->PO MAPPING - AU201 - S I Engines & Combustion

AU201/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	2	2	2	1	1	1	1	2

COURSE->PSO MAPPING - AU201 - S I Engines & Combustion

AU201/PSO	PSO1	PSO2	PSO3	PSO4

AU203

Course Code	Course Name	L-T-P:C	Year of Introduction
AU203	Auto Chassis	3-0-0:3	2016

No.	Course Outcome - AU203 - Auto Chassis	Target
CO1	Demonstrate the working of different chassis systems and wheels used in vehicles	75%
CO2	Identify the different couplings and drive transmission system used in a vehicle	70%
CO3	Analyse the working of a differential and different axle support systems	70%
CO4	Identify the different suspension systems and their design & selection criteria	70%
CO5	Analyse different braking systems and sizes used in a vehicle	70%
CO6	Identify the front axle and steering systems used in a vehicle	70%

COURSE END SURVEY - AU203 - Auto Chassis

Sl.No	Questions & Options
CO1	Can you identify the type of wheel and the skeleton used in a vehicle
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO2	Can you identify the different couplings used in an automobile?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>

CO3	Can you explain the working of a differential and axle support system?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO4	Can you decide the suspension system for a particular vehicle based on the requirement?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO5	Can you identify the braking system and its implications in a vehicle?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO6	Can you explain the front axle and requirement of steering system?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>

CO->PO MAPPING - AU203 - Auto Chassis

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	3			2	1	1		1	1	2
CO2	1	2	2				1	2		1	1	1
CO3	1	2	2	1		1	2	2	1	1	2	1
CO4	1	2	3	1		1	2	2	1	1	1	1
CO5	1	1	3		1	2	2	2	1	1	1	1
CO6			2	2	1	1	1	2		2	1	1

CO->PSO MAPPING - AU203 - Auto Chassis

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1	3	2	
CO2	2	1	1	
CO3	2	2		
CO4	3	2		
CO5	3	2	1	
CO6	2	2		

COURSE->PO MAPPING - AU203 - Auto Chassis

AU203/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	1	2	3	2	1	2	2	2	1	2	2	2

COURSE->PSO MAPPING - AU203 - Auto Chassis

AU203/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	2	

ME230

Course Code	Course Name	L-T-P:C	Year of Introduction
ME230	Fluid Mechanics & Machines Lab	0-0-3:1	2016

No.	Course Outcome - ME230 - Fluid Mechanics & Machines Lab	Target
CO1	Identify and analyze different flow measuring devices	65%
CO2	Identify and evaluate different types of turbines	70%
CO3	Demonstrate the working of various types of pumps	70%
CO4	Discuss the physical basis of Bernoulli's equation and apply it to flow measurement and to a variety of problems	75%
CO5	Select different types of pumps and turbines for specific applications	75%

COURSE END SURVEY - ME230 - Fluid Mechanics & Machines Lab

Sl.No	Questions & Options	
CO1	To what extent you are able to identify and analyze different flow measuring devices	
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>	
CO2	To what extent you are able to identify and evaluate different types of turbines	
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>	
CO3	To what are able to demonstrate the working of various types of pumps	
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>	
CO4	CO5	To what extent you are able to select different types of pumps and turbines for specific applications
Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>		

CO->PO MAPPING - ME230 - Fluid Mechanics & Machines Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1			2		1	3			3		
CO2		3			2			2			1	

CO3	2	3			2			1				
CO4			1				1				1	
CO5	1			1				2			2	

CO->PSO MAPPING - ME230 - Fluid Mechanics & Machines Lab

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	1		2
CO2		1		2
CO3	3		1	
CO4			1	
CO5		2		1

COURSE->PO MAPPING - ME230 - Fluid Mechanics & Machines Lab

ME230/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	3	1	2	2	1	3	2		3	2	

COURSE->PSO MAPPING - ME230 - Fluid Mechanics & Machines Lab

ME230/PSO	PSO1	PSO2	PSO3	PSO4
	3	2	1	2

CE230

Course Code	Course Name	L-T-P:C	Year of Introduction
CE230	Materials Testing Lab I	0-0-3:1	2016

No.	Course Outcome - CE230 - Materials Testing Lab I	Target
CO1	Identify the basic mechanical properties of mild steel and the relevant testing equipment	60%
CO2	Measure rigidity modulus and stiffness under different loading conditions	60%
CO3	Evaluate the ultimate shear strength of a material	60%
CO4	Measure the youngsmodulus, deflection and maximum bending stress and justify Clark Maxwell theorem	60%
CO5	Analyse the behaviour of a material under impact loading	60%
CO6	Evaluate the hardness of a material	60%

COURSE END SURVEY - CE230 - Materials Testing Lab I

Sl.No	Questions & Options
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CO1	To what extend you are able to identify the basic mechanical properties of mild steel and the relevant testing equipment
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extend you are able to measure rigidity modulus and stiffness under different loading conditions
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extend you are able to evaluate the ultimate shear strength of a material
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To what extend you are able to measure the young's modulus, deflection and maximum bending stress and justify Clark Maxwell theorem
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extend you are able to analyse the behaviour of a material under impact loading
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	To what extend you are able to evaluate the hardness of a material
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - CE230 - Materials Testing Lab I

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	2	2	1	2	1	2	1	2	1
CO2	3	2	1	2	2	1	2	1	2	1	2	1
CO3	3		1	2	2	1	2	1	2	1	2	1
CO4	3	2	1	2	2	1	2	1	2	1	2	1
CO5	3	2	1	2	2	1	2	1	2	1	2	1
CO6	3	2	1	2	2	1	2	1	2	1	2	1

CO->PSO MAPPING - CE230 - Materials Testing Lab I

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	1	2	
CO2	3	1	2	
CO3	3	1	2	
CO4	3	1	2	
CO5	3	1	2	
CO6	3	1	2	

COURSE->PO MAPPING - CE230 - Materials Testing Lab I

CE230/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	1	2	2	1	2	1	2	1	2	1

COURSE->PSO MAPPING - CE230 - Materials Testing Lab I

CE230/PSO	PSO1	PSO2	PSO3	PSO4
	3	1	2	

HS210

Course Code	Course Name	L-T-P:C	Year of Introduction
HS210	Life Skills/Business Economics	2-0-2:3	2016

No.	Course Outcome - HS210 - Life Skills/Business Economics	Target
CO1	comprehend the techniques of language skills in Group Discussion, Presentations, Letter writing and Reports.	60%
CO2	Applies critical and creative thinking to solve problems	60%
CO3	Demonstrates ability to work in groups and teams	60%
CO4	demonstrates the qualities of a professional and is aware of work ethics	60%
CO5	applies the qualities of a leadership in all activities	60%
CO6	applies communication and leadership techniques in all formal environments	60%

COURSE END SURVEY - HS210 - Life Skills/Business Economics

Sl.No	Questions & Options
CO1	To what extent can you communicate effectively in formal presentations and in teams
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO2	To what extent can you use creativity and critical thinking in solving problems
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO3	To what extent can you effectively work in teams and groups
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO4	To what extent are you aware of work and professional ethics
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extent do you exhibit the qualities of a leader
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
	To what extent can you apply communication and leadership qualities in formal environments

CO6	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
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CO->PO MAPPING - HS210 - Life Skills/Business Economics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2					1	1	1	3			
CO2		1										
CO3												
CO4												
CO5												
CO6												

CO->PSO MAPPING - HS210 - Life Skills/Business Economics

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

COURSE->PO MAPPING - HS210 - Life Skills/Business Economics

HS210/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	1				1	1	1	3			

COURSE->PSO MAPPING - HS210 - Life Skills/Business Economics

HS210/PSO	PSO1	PSO2	PSO3	PSO4

ME205

Course Code	Course Name	L-T-P:C	Year of Introduction
ME205	Thermodynamics	3-1-0:4	2016

No.	Course Outcome - ME205 - Thermodynamics	Target
CO1	Develop fundamental knowledge in thermodynamic concepts	60%

CO2	Review the laws of thermodynamics and apply these to the analysis of thermodynamic systems and components	60%
CO3	Evaluate entropy changes in a wide range of processes and determine the reversibility or irreversibility of a process from such calculations	60%
CO4	Identify the properties of pure substances, gases and gas mixture on property diagrams and obtain the data from property tables	60%
CO5	Apply thermodynamic relations and problem solving ability to resolve issues related to social interest	60%
CO6	Generalize the basic axioms of classical, macroscopic thermodynamic analysis and extrapolate those concepts to thermodynamic processes and substances	60%

COURSE END SURVEY - ME205 - Thermodynamics

Sl.No	Questions & Options
CO1	How far are you able to develop fundamental knowledge in thermodynamic concepts? Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>
CO2	Can you apply the laws of thermodynamics to the analysis of thermodynamic systems and components? Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO3	Can you evaluate entropy changes in a wide range of processes and determine the reversibility or irreversibility of a process from such calculations? Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO4	Your ability to Identify the properties of pure substances, gases and gas mixture on property diagrams and obtain data from property tables Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	How much is your problem solving ability to resolve issues related to social interest by applying thermodynamic relations? Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO6	Can you generalize the basic axioms of classical, macroscopic thermodynamic analysis and extrapolate those concepts to thermodynamic processes and substances? Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>

CO->PO MAPPING - ME205 - Thermodynamics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												
CO5												

CO6												
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CO->PSO MAPPING - ME205 - Thermodynamics

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

COURSE->PO MAPPING - ME205 - Thermodynamics

ME205/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - ME205 - Thermodynamics

ME205/PSO	PSO1	PSO2	PSO3	PSO4

ME210

Course Code	Course Name	L-T-P:C	Year of Introduction
ME210	Metallurgy & Materials Engineering	3-0-0:3	2016

No.	Course Outcome - ME210 - Metallurgy & Materials Engineering	Target
CO1	Demonstrate the basic concepts of Physics of Materials and outline basic crystal structures.	60%
CO2	Illustrate the effect of solidification in material properties and evaluate basic characterization techniques like SEM, TEM, XRD etc.	60%
CO3	Analyze phase diagrams, predict the phases in an alloys based on composition and the resultant properties of that particular system.	60%
CO4	Evaluate the various strengthening mechanisms used in alloy systems.	60%
CO5	Analyze the mechanisms of fracture failure and fatigue failure of materials.	60%
CO6	Examine the importance of composites and ceramics, and their advantages over conventional materials	60%

COURSE END SURVEY - ME210 - Metallurgy & Materials Engineering

Sl.No	Questions & Options
CO1	Were you able to link the basics of material physics to material properties?

	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO2	How well did you understand the various characterisation methods?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO3	Did you learn about the various phases in alloys and their importance in material properties?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO4	Were you able to learn the importance of alloys and alloying elements?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO5	To what extent did you come to know about various failure modes in materials?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO6	How well did you understand the importance of various ceramics and composites?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5

CO->PO MAPPING - ME210 - Metallurgy & Materials Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	2									
CO2	2	2	1	2								
CO3		2	2									
CO4	2	2	3									
CO5			3	2								
CO6	1	2	3	1								

CO->PSO MAPPING - ME210 - Metallurgy & Materials Engineering

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

COURSE->PO MAPPING - ME210 - Metallurgy & Materials Engineering

ME210/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	3	2								

COURSE->PSO MAPPING - ME210 - Metallurgy & Materials Engineering

ME210/PSO	PSO1	PSO2	PSO3	PSO4

AU231

Course Code	Course Name	L-T-P:C	Year of Introduction
AU231	Computer Aided M/C & Auto Components Drafting Lab	0-0-3:1	2016

No.	Course Outcome - AU231 - Computer Aided M/C & Auto Components Drafting Lab	Target
CO1	To study the capabilities of software for Drafting and Modeling	60%
CO2	To develop skill to use software to create 2D and 3D models	60%
CO3	To introduce the students the Indian standard code of practice for engineering drawing	50%
CO4	Ability to select, configure and synthesize mechanical components into assemblies.	50%
CO5	Make drawings of assemblies with the help of part drawings given.	50%

COURSE END SURVEY - AU231 - Computer Aided M/C & Auto Components Drafting Lab

Sl.No	Questions & Options
CO1	To what extent you are able to study the capabilities of software for Drafting and Modeling
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extent you learned software to create 2D and 3D models
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extent you are aware of Indian standard code of practice for engineering drawing
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To what extent you are able to select, configure and synthesize mechanical components into assemblies.
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extent you can make drawings of assemblies with the help of part drawings given.
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - AU231 - Computer Aided M/C & Auto Components Drafting Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2		3		2			2		
CO2	2	3	3	2	3					3		2
CO3	2				2					2		2

CO4	3	2	3				2					2
CO5	2		3		2							

CO->PSO MAPPING - AU231 - Computer Aided M/C & Auto Components Drafting Lab

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	1		2
CO2	2	2		
CO3	1	2		1
CO4	3	2		1
CO5	2	1		

COURSE->PO MAPPING - AU231 - Computer Aided M/C & Auto Components Drafting Lab

AU231/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	2	3		2			3		2

COURSE->PSO MAPPING - AU231 - Computer Aided M/C & Auto Components Drafting Lab

AU231/PSO	PSO1	PSO2	PSO3	PSO4
	3	2		2

AU205

Course Code	Course Name	L-T-P:C	Year of Introduction
AU205	AUTOMOTIVE CHASSIS	3-1-0:4	2016

No.	Course Outcome - AU205 - AUTOMOTIVE CHASSIS	Target
CO1	Understand different classifications of an automobile and positioning of power plant	60%
CO2	Understand the type of chassis frame and its merits and demerits	65%
CO3	Identify the axle arrangements and final drive system used in a vehicle	60%
CO4	Analyse different suspension system employed in an automobile	65%
CO5	Evaluate the steering system used in the vehicle	60%
CO6	Analyse the braking system with its components and identify the chances of brake failures	60%

COURSE END SURVEY - AU205 - AUTOMOTIVE CHASSIS

Sl.No	Questions & Options
CO1	Can you identify the classification of the given vehicle?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>

CO2	Are you able to clearly identify the type of frame used in a specific vehicle and why it is so?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO3	Can you identify the type of axle and differential used
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO4	Are you able to identify a suitable suspension system for a vehicle?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO5	Are you able to identify different components of steering system in a vehicle
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO6	Can you identify the braking system failure reasons in a vehicle?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>

CO->PO MAPPING - AU205 - AUTOMOTIVE CHASSIS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1		1		2		1				1
CO2	1	2				1		2		1		
CO3	2	1				1		1				
CO4	1	3	3			1		1		1		1
CO5	1	2	1	1		1	1	2	2	1	1	
CO6	1	2	3	2		2	2	1		1	2	1

CO->PSO MAPPING - AU205 - AUTOMOTIVE CHASSIS

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	1		1
CO2	2	3		2
CO3	1	2		2
CO4	2	2		3
CO5	2	1		2
CO6	3	3		2

COURSE->PO MAPPING - AU205 - AUTOMOTIVE CHASSIS

AU205/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	3	3	2		2	2	2	2	1	2	1

COURSE->PSO MAPPING - AU205 - AUTOMOTIVE CHASSIS

AU205/PSO	PSO1	PSO2	PSO3	PSO4
	3	3		3

MUT201

Course Code	Course Name	L-T-P:C	Year of Introduction
MUT201	FLUID MECHANICS AND MACHINERY	3-1-0:4	2019

No.	Course Outcome - MUT201 - FLUID MECHANICS AND MACHINERY	Target
CO1	Understand the fundamental concepts of fluid mechanics	60%
CO2	Analyse various problems on fluid statics, kinetics and dynamics	60%
CO3	Understand various flow measuring instruments and their applications	60%
CO4	Analyse the various types of hydraulic turbines and their operating principles	60%
CO5	Understand the various types of hydraulic pumps and their characteristic parameters	60%
CO6	Do innovative projects by analyzing existing fluid systems and design new fluid systems using the principles learned	60%

COURSE END SURVEY - MUT201 - FLUID MECHANICS AND MACHINERY

Sl.No	Questions & Options
CO1	To what extend the student are able to understand the fundamental concepts of fluid mechanics
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extend the students can analyse various problems on fluid statics, kinetics and dynamics
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	To what extend students understand about various flow measuring instruments and their applications
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extend students are able to understand about the construction and working of various turbines
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extend the students are able to understand about various types of hydraulic pumps
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO6	To what extend the students were able to analyze existing fluid systems and design new fluid systems
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - MUT201 - FLUID MECHANICS AND MACHINERY

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO1	2		1			1	1		1	1	1	1
CO2	2		1		3	1	2	2		1	1	2
CO3	2	1	3	1		1	2			2	1	1
CO4	2		2			3	2			2	1	1
CO5	2		1	2		1	2			2	1	2
CO6												

CO->PSO MAPPING - MUT201 - FLUID MECHANICS AND MACHINERY

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2		2	
CO2		1		
CO3		2		
CO4	2			
CO5		3		
CO6	1			

COURSE->PO MAPPING - MUT201 - FLUID MECHANICS AND MACHINERY

MUT201/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	1	3	2	3	3	2	2	1	2	1	2

COURSE->PSO MAPPING - MUT201 - FLUID MECHANICS AND MACHINERY

MUT201/PSO	PSO1	PSO2	PSO3	PSO4
	2	3	2	

MUT203

Course Code	Course Name	L-T-P:C	Year of Introduction
MUT203	Auto Chassis	4-0-0:4	2019

No.	Course Outcome - MUT203 - Auto Chassis	Target
CO1	Distinguish between the different types of chassis frame construction and its arrangements	65%
CO2	Evaluate the different types of front axles and steering systems used in vehicles	65%
CO3	Identify the suspension system and different classes of wheels used in a vehicle	65%
CO4	Understand the braking systems and its testing methods	65%

CO5	Comparing the different types of rear axles and adjoining components	65%
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COURSE END SURVEY - MUT203 - Auto Chassis

Sl.No	Questions & Options
CO1	Are you able to distinguish between the different types of chassis frame construction and its arrangements
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO2	Are you able to select the suitable axle and steering system for the vehicle?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO3	Can you identify the size based on the tyre specification?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO4	How do you evaluate your knowledge about braking system and its testing?
	Answer Choice- <i>5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5</i>
CO5	Are you able to identify the type of rear axle used in a vehicle?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>

CO->PO MAPPING - MUT203 - Auto Chassis

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3		1		1	1	1		1	1	1	1
CO2	2		1			1	2			1	1	2
CO3	2	1	3	1		1	2			2	1	1
CO4	2		2			3	2			3	1	1
CO5	2		1			1	2			2	1	2

CO->PSO MAPPING - MUT203 - Auto Chassis

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1		1	2
CO2	1	1		3
CO3	2	1		1
CO4	3	2	1	2
CO5	2			1

COURSE->PO MAPPING - MUT203 - Auto Chassis

MUT203/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	1	3	1	1	3	2		1	3	1	2

COURSE->PSO MAPPING - MUT203 - Auto Chassis

MUT203/PSO	PSO1	PSO2	PSO3	PSO4
	3	2	1	3

MET205

Course Code	Course Name	L-T-P:C	Year of Introduction
MET205	Metallurgy & Material Science	3-1-0:4	2019

No.	Course Outcome - MET205 - Metallurgy & Material Science	Target
CO1	Understand the basic chemical bonds, crystal structures (BCC, FCC, and HCP), and their relationship with the properties.	60%
CO2	Analyze the microstructure of metallic materials using phase diagrams and modify the microstructure and properties using different heat treatments	60%
CO3	How to quantify mechanical integrity and failure in materials	60%
CO4	Apply the basic principles of ferrous and non-ferrous metallurgy for selecting materials for specific applications	60%
CO5	Define and differentiate engineering materials on the basis of structure and properties for engineering applications.	60%

COURSE END SURVEY - MET205 - Metallurgy & Material Science

Sl.No	Questions & Options
CO1	To what extend you have understood the basic chemical bonds, crystal structures (BCC, FCC, and HCP), and their relationship with the properties.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	Are you able to analyze the microstructure of metallic materials using phase diagrams and modify the microstructure and properties using different heat treatments
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	Are you able to quantify the mechanical integrity and failure in materials
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	Are the basic principles of ferrous and non-ferrous metallurgy for selecting materials for specific applications clear
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	Are you able to define and differentiate engineering materials on the basis of structure and properties for engineering applications
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - MET205 - Metallurgy & Material Science

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	2	1	1					1		1
CO2	1	3	2		2	1	1	1		2	1	3
CO3	2		1	1	2	3	2	2		2	2	3
CO4	2		3	2	3	3	3	2		3	3	2
CO5		1	2	3		2	2	2		3	3	3

CO->PSO MAPPING - MET205 - Metallurgy & Material Science

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1		1		
CO2	1	2	1	
CO3	2	3	3	2
CO4	1	3	3	2
CO5	3	3	3	3

COURSE->PO MAPPING - MET205 - Metallurgy & Material Science

MET205/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3	3	2		3	3	3

COURSE->PSO MAPPING - MET205 - Metallurgy & Material Science

MET205/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	3

MCN201

Course Code	Course Name	L-T-P:C	Year of Introduction
MCN201	Sustainable Engineering	2-0-0:0	2019

COURSE END SURVEY - MCN201 - Sustainable Engineering
CO->PO MAPPING - MCN201 - Sustainable Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - MCN201 - Sustainable Engineering

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - MCN201 - Sustainable Engineering

MCN201/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - MCN201 - Sustainable Engineering

MCN201/PSO	PSO1	PSO2	PSO3	PSO4

MCN201

Course Code	Course Name	L-T-P:C	Year of Introduction
MCN201	Sustainable Engineering	2-0-0:0	2019

No.	Course Outcome - MCN201 - Sustainable Engineering	Target
CO1	Perceive the relevance and concept of sustainability and associated global initiatives	61%
CO2	Expound on the different types of environmental pollution problems and their sustainable solutions	61%
CO3	Be abreast of environmental regulations and standards	61%
CO4	Outline concepts of conventional and non-conventional energy	61%
CO5	Demonstrate sustainable practices using engineering knowledge	61%

COURSE END SURVEY - MCN201 - Sustainable Engineering

Sl.No	Questions & Options
CO1	The Sustainable Development Goals form a road map for the future..
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO2	Is global warming linked to climate change ?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO3	EIA is a necessary criteria during the course of greenfield projects.
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO4	Is renewable energy penetrating the global energy market ?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO5	Are sustainable habitats a part of urban life ?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>

CO->PO MAPPING - MCN201 - Sustainable Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												

CO4												
CO5												

CO->PSO MAPPING - MCN201 - Sustainable Engineering

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - MCN201 - Sustainable Engineering

MCN201/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - MCN201 - Sustainable Engineering

MCN201/PSO	PSO1	PSO2	PSO3	PSO4

MEL201

Course Code	Course Name	L-T-P:C	Year of Introduction
MEL201	COMPUTER AIDED MACHINE DRAWING	0-0-3:2	2019

No.	Course Outcome - MEL201 - COMPUTER AIDED MACHINE DRAWING	Target
CO1	Apply the knowledge of engineering drawings and standards to prepare standard dimensioned drawings of machine parts and other engineering components.	60%
CO2	Prepare standard assembly drawings of machine components and valves using part drawings and bill of materials.	60%
CO3	Apply limits and tolerances to components and choose appropriate fits for given assemblies	60%
CO4	Interpret the symbols of welded, machining and surface roughness on the component drawings.	60%
CO5	Prepare part and assembly drawings and Bill of Materials of machine components and valves using CAD software.	60%

COURSE END SURVEY - MEL201 - COMPUTER AIDED MACHINE DRAWING

Sl.No	Questions & Options
CO1	To what extent you have learnt to apply engineering drawings and standards to prepare standard dimensioned drawings of machine parts and other engineering components?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO2	To what extend you have learnt to prepare standard assembly drawings of machine components and valves using part drawings and bill of materials?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extend you have learnt to apply limits and tolerances to components and choose appropriate fits for given assemblies?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To what extend you have learnt to interpret the symbols of welded, machining and surface roughness on the component drawings?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extend you have learnt to prepare part and assembly drawings and Bill of Materials of machine components and valves using CAD software?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - MEL201 - COMPUTER AIDED MACHINE DRAWING

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3									3		
CO2	3		2							3		
CO3	3	2										
CO4	3											
CO5	3				3					3		1

CO->PSO MAPPING - MEL201 - COMPUTER AIDED MACHINE DRAWING

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3		3	
CO2	3	2	3	
CO3	3	2		2
CO4	3			
CO5	3		3	1

COURSE->PO MAPPING - MEL201 - COMPUTER AIDED MACHINE DRAWING

MEL201/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	2		3					3		1

COURSE->PSO MAPPING - MEL201 - COMPUTER AIDED MACHINE DRAWING

MEL201/PSO	PSO1	PSO2	PSO3	PSO4
	3	2	3	2

MUL203

Course Code	Course Name	L-T-P:C	Year of Introduction
MUL203	FM & HM LAB	0-0-3:2	2019

No.	Course Outcome - MUL203 - FM & HM LAB	Target
CO1	To determine the meta-centric height and stability of floating bodies	80%
CO2	To find the coefficient of discharge of Venturi meter, orifice meter and notches	80%
CO3	To calibrate flow measuring devices (notches, orifice meter and Venturi meter)	80%
CO4	To evaluate the losses in pipes	80%
CO5	To determine the efficiency and plot the characteristic curves of different types of pumps and turbines	80%

COURSE END SURVEY - MUL203 - FM & HM LAB

Sl.No	Questions & Options
CO1	To what extend the student can able to understand about the meta-centric height and stability of floating bodies
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	To what extend student was able to find coefficient of discharge of Venturi meter, orifice meter and notches
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	To what extend the student was able to calibrate flow measuring devices (notches, orifice meter and Venturi meter)
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extend the student was able to determine evaluate the losses in pipes
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extend the student was able to determine the efficiency of different pumps and turbines
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - MUL203 - FM & HM LAB

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1						2	3	2		2
CO2	2	1						2	3	2		2
CO3	2	1						2	3	2		2
CO4	2	1						2	3	2		2
CO5	2	1						2	3	2		2

CO->PSO MAPPING - MUL203 - FM & HM LAB

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1		1	
CO2		2		
CO3			3	
CO4	1			1
CO5				

COURSE->PO MAPPING - MUL203 - FM & HM LAB

MUL203/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	1						2	3	2		2

COURSE->PSO MAPPING - MUL203 - FM & HM LAB

MUL203/PSO	PSO1	PSO2	PSO3	PSO4
	1	2	3	1

MAT201

Course Code	Course Name	L-T-P:C	Year of Introduction
MAT201	PARTIAL DIFFERENTIAL EQUATION AND COMPLEX ANALYSIS	3-1-0:4	2019

No.	Course Outcome - MAT201 - PARTIAL DIFFERENTIAL EQUATION AND COMPLEX ANALYSIS	Target
CO1	Solve partial differential equations	60%
CO2	Analyse solutions of one dimensional wave and heat equations	60%
CO3	Understand the important concepts of a complex valued functions like continuity, differentiability and conformal mappings.	60%
CO4	Evaluate complex integrals using Cauchy's integral theorem and Cauchy's integral formula	60%
CO5	Formulate the series expansion of complex function about a singularity and apply residue theorem to compute several kinds of real integrals.	60%

COURSE END SURVEY - MAT201 - PARTIAL DIFFERENTIAL EQUATION AND COMPLEX ANALYSIS

Sl.No	Questions & Options
CO1	To what extent are you able to solve partial differential equations?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	To what extent are you able to analyse solutions of one dimensional wave and heat equations
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO3	To what extent are you able to understand the important concepts of a complex valued functions like continuity, differentiability and conformal mappings.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extent are you able to evaluate complex integrals using Cauchy's integral theorem and Cauchy's integral formula
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extent are you able to formulate the series expansion of complex function about a singularity and apply residue theorem to compute several kinds of real integrals.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - MAT201 - PARTIAL DIFFERENTIAL EQUATION AND COMPLEX ANALYSIS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												
CO5												

CO->PSO MAPPING - MAT201 - PARTIAL DIFFERENTIAL EQUATION AND COMPLEX ANALYSIS

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - MAT201 - PARTIAL DIFFERENTIAL EQUATION AND COMPLEX ANALYSIS

MAT201/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - MAT201 - PARTIAL DIFFERENTIAL EQUATION AND COMPLEX ANALYSIS

MAT201/PSO	PSO1	PSO2	PSO3	PSO4

HUT200

Course Code	Course Name	L-T-P:C	Year of Introduction
HUT200	PROFESSIONAL ETHICS	2-0-0:2	2019

No.	Course Outcome - HUT200 - PROFESSIONAL ETHICS	Target
CO1	Understand the core values that shape the ethical behavior of a professional(UNDERSTANDING)	60%
CO2	Adopt a good character and follow an ethical life(REMEMBERING)	60%
CO3	Explain the role and responsibility in technological development by keeping personal ethics and legal ethic(ANALYSING)	60%
CO4	Solve moral and ethical problems through exploration and assessment by established experiments(APPLYING)	60%
CO5	Apply the knowledge of human values and social values to contemporary ethical values and global issues.(EVALUATING)	60%

COURSE END SURVEY - HUT200 - PROFESSIONAL ETHICS

Sl.No	Questions & Options
CO1	I am able to understand and identify core values required in professional life
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO2	I am able to develop moral values and ethics
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO3	I am able to understand the roles and responsibilities of a professional
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO4	I am able to analyse and solve moral and ethical problems
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO5	I am able to judge a case or global issue
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5

CO->PO MAPPING - HUT200 - PROFESSIONAL ETHICS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												
CO5												

CO->PSO MAPPING - HUT200 - PROFESSIONAL ETHICS

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				

CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - HUT200 - PROFESSIONAL ETHICS

HUT200/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - HUT200 - PROFESSIONAL ETHICS

HUT200/PSO	PSO1	PSO2	PSO3	PSO4

SEMESTER-4**MA202**

Course Code	Course Name	L-T-P:C	Year of Introduction
MA202	Probability Distributions, Transforms and Numerical Methods	3-1-0:4	2016

No.	Course Outcome - MA202 - Probability Distributions, Transforms and Numerical Methods	Target
CO1	Apply the concept of random variables, probability distributions, specific discrete distributions in various Engineering problems.	62%
CO2	Utilize specific continuous distributions in various Engineering problems.	65%
CO3	Use Laplace transforms for engineering applications.	65%
CO4	Implement Fourier transforms for engineering applications.	65%
CO5	Solve various engineering problems using numerical methods for solution of equations and interpolation.	65%
CO6	Employ numerical methods for integration, differentiation and solution of differential equations	65%

COURSE END SURVEY - MA202 - Probability Distributions, Transforms and Numerical Methods

Sl.No	Questions & Options
CO1	To what extent are you able to apply the concept of random variables, probability distributions, specific discrete distributions in various Engineering problems ?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extent are you able to utilize specific continuous distributions in various Engineering problems?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO3	To what extent are you able to use Laplace transforms for engineering applications?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To what extent are you able to implement Fourier transforms for engineering applications.?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extent are you able to solve various engineering problems using numerical methods for solution of equations and interpolation?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	To what extent are you able to employ numerical methods for integration, differentiation and solution of differential equations?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - MA202 - Probability Distributions, Transforms and Numerical Methods

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	1	1		1				1	1	1
CO2	3	3	1	1		1						
CO3	3	3										
CO4	3	3										
CO5	3	3										1
CO6	3	3										1

CO->PSO MAPPING - MA202 - Probability Distributions, Transforms and Numerical Methods

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	1		
CO2	2	1		
CO3	2	1		
CO4	2	1		
CO5	2	1	1	3
CO6	2	1	1	3

COURSE->PO MAPPING - MA202 - Probability Distributions, Transforms and Numerical Methods

MA202/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	1	1		1				1	1	1

COURSE->PSO MAPPING - MA202 - Probability Distributions, Transforms and Numerical Methods

	PSO1	PSO2	PSO3	PSO4

MA202/PSO	2	1	1	3
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AU202

Course Code	Course Name	L-T-P:C	Year of Introduction
AU202	Advanced Thermodynamics	3-1-0:4	2016

No.	Course Outcome - AU202 - Advanced Thermodynamics	Target
CO1	Explain the fundamental concepts of thermodynamics and application in daily life	50%
CO2	Describe the concept of temperature, application of first law of thermodynamics.	50%
CO3	Describe second law of thermodynamics and its applications	50%
CO4	Describe different thermodynamic relations and their applications.	50%
CO5	Explain the properties of pure substances, gases and steam	50%
CO6	Demonstrate the relevance of different power cycles and solution of numerical problems based power cycles.	50%

COURSE END SURVEY - AU202 - Advanced Thermodynamics

Sl.No	Questions & Options
CO1	To what extend you are able to explain the role of thermodynamics in daily life
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extend you are able to explain first law of thermodynamics and its practical applications
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	To what extend you are able to explain second law of thermodynamics and its practical applications
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extend you are able to explain different thermodynamic relations and and its practical applications in thermodynamics
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extend you are able to explain the concept of pure substances
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO6	To what extend you are able to demonstrate different power cycles in thermodynamics
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - AU202 - Advanced Thermodynamics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO1	3	1	1		1		1					
CO2	1	1		3	1	3						
CO3				2			2					
CO4	3	1		2								
CO5	2		1									
CO6	1		1									

CO->PSO MAPPING - AU202 - Advanced Thermodynamics

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3		3	
CO2				
CO3		3		
CO4				
CO5			3	
CO6				

COURSE->PO MAPPING - AU202 - Advanced Thermodynamics

AU202/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	1	1	3	1	3	2					

COURSE->PSO MAPPING - AU202 - Advanced Thermodynamics

AU202/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	

AU204

Course Code	Course Name	L-T-P:C	Year of Introduction
AU204	C I Engine and Combustion	4-0-0:4	2016

No.	Course Outcome - AU204 - C I Engine and Combustion	Target
CO1	Explain the basic properties of fuels. stages of combustion, and different combustion chamber designs	50%
CO2	Demonstrate the conventional diesel injection system.	50%
CO3	Illustrate the basics of Electronic fuel injection system and CRDI system	50%
CO4	Demonstrate testing IC Engines and gas exchange processes in them.	50%

CO5	Illustrate pollution and emission formation in IC engines and their control methods	50%
CO6	Demonstrate the basic ideas of IC engine turbocharging.	50%

COURSE END SURVEY - AU204 - C I Engine and Combustion

Sl.No	Questions & Options
CO1	How far you are able to explain the basic properties of fuels. stages of combustion, and different combustion chamber designs?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO2	How far you are able to demonstrate the conventional diesel injection system?
	Answer Choice- Excellent/Very Good/Good/Fair/Poor
CO3	How far can you describe the working of advanced diesel injection systems?
	Answer Choice- Excellent/Very Good/Good/Satisfactory/Poor
CO4	How far you are able to demonstrate testing IC Engines and gas exchange processes in them?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO5	How far you are able to illustrate pollution and emission formation in IC engines and their control methods?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO6	How far you are able to demonstrate basic ideas of IC engine turbocharging?
	Answer Choice- Excellent/Very Good/Good/Satisfactory/Poor

CO->PO MAPPING - AU204 - C I Engine and Combustion

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2					2						
CO2										3		
CO3										2		
CO4		2			2							
CO5			3				3					
CO6		1										

CO->PSO MAPPING - AU204 - C I Engine and Combustion

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2			
CO2				
CO3				
CO4				

CO5				
CO6				

COURSE->PO MAPPING - AU204 - C I Engine and Combustion

AU204/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	2	3		2	2	3			3		

COURSE->PSO MAPPING - AU204 - C I Engine and Combustion

AU204/PSO	PSO1	PSO2	PSO3	PSO4
	2			

AU206

Course Code	Course Name	L-T-P:C	Year of Introduction
AU206	Auto Transmission	3-0-0:3	2016

No.	Course Outcome - AU206 - Auto Transmission	Target
CO1	Demonstrate the working of conventional clutches	71%
CO2	Design the gear ratios and gear shifting mechanisms	70%
CO3	Elaborate the working of Wilson Gearbox and Ford T model gear box	60%
CO4	Illustrate hydrodynamic transmission and its working	61%
CO5	Demonstrate the working of automatic gearbox	60%
CO6	Interpret the working of control systems in special type of vehicles	60%

COURSE END SURVEY - AU206 - Auto Transmission

Sl.No	Questions & Options
CO1	Are you able to demonstrate the working of clutches?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO2	Can you design suitable gear ratios and gear shifting mechanism for a given vehicle?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO3	Can you elaborate the working of the epicyclic gear boxes used in the earlier automobiles?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO4	Can you illustrate the working of a fluid flywheel and Torque converter?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>

CO5	Can you explain the working of an automatic gearbox?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO6	Are you be able to explain how JCBs and other special type of vehicles are controlled with Joy stick?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>

CO->PO MAPPING - AU206 - Auto Transmission

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1		2			2	2			1	2	
CO2	2	2	1	1		1	2		1		1	
CO3	2	1					1		2			
CO4	3	2	1	1		1		2		2	1	
CO5	2	1		2	2	1		1			2	1
CO6	2		1			1		2				

CO->PSO MAPPING - AU206 - Auto Transmission

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	1		2
CO2	2	1		3
CO3	2	3		1
CO4	1	2		1
CO5	2	2		2
CO6	2	2		3

COURSE->PO MAPPING - AU206 - Auto Transmission

AU206/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	2	2	2	2	2	2	2	2	2	1

COURSE->PSO MAPPING - AU206 - Auto Transmission

AU206/PSO	PSO1	PSO2	PSO3	PSO4
	3	3		3

AU208

Course Code	Course Name	L-T-P:C	Year of Introduction
AU208	Computer Programming	3-0-0:3	2016

No.	Course Outcome - AU208 - Computer Programming	Target
CO1	Identify appropriate C language constructs to solve problems in Automotive industry	51%
CO2	Implement simple programs in C language	55%
CO3	Describe what is meant by array and its benefits. Apply sorting & searching techniques to solve application programs .	55%
CO4	Analyze problems, identify subtasks and implement them as functions/procedures.	55%
CO5	Apply pointers, memory allocation techniques for dealing with variety of problems	55%
CO6	Explain the concept of file system for handling data storage and apply it for solving problems	55%

COURSE END SURVEY - AU208 - Computer Programming

Sl.No	Questions & Options
CO1	To what extent you are able to identify C program constructs to solve problems in automotive industry ?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extent you are able to implement programming languages and learn to develop simple C programs?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	To what extent you are able to develop array related programs to solve real world problems
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extent you are able to use functions to implement different requirements
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extent you are able to develop pointers related programs to solve real world problems
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO6	To what extent you are able to apply the knowledge of files and their handling to different applications
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - AU208 - Computer Programming

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		2									2	
CO2					3						2	
CO3										2	2	
CO4		3						2			2	
CO5										2		
CO6					2						3	

CO->PSO MAPPING - AU208 - Computer Programming

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				2
CO2				
CO3				3
CO4				2
CO5				3
CO6	3			

COURSE->PO MAPPING - AU208 - Computer Programming

AU208/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		3			3			2		2	3	

COURSE->PSO MAPPING - AU208 - Computer Programming

AU208/PSO	PSO1	PSO2	PSO3	PSO4
	3			3

AU232

Course Code	Course Name	L-T-P:C	Year of Introduction
AU232	Computer Programming LAB	0-0-3:1	2016

No.	Course Outcome - AU232 - Computer Programming LAB	Target
CO1	Understand the use of C programming in automotive industry	65%
CO2	Implement the loops and decision making statements to solve the problem	65%
CO3	Implement different Operations on arrays	65%
CO4	Implement functions to solve the given problem	65%
CO5	Implement Pointers in C language	60%
CO6	Implement file Operations in C programming for a given application	60%

COURSE END SURVEY - AU232 - Computer Programming LAB

Sl.No	Questions & Options
CO1	To what extent you are able to understand the use of C in Automotive Industry Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	To what extent you are able to Design and Implement the loops and decision making statements to solve the problem

	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	To what extent you are able to Design and implement different array operations in C
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extent you are able to Design and functions and recursions in C
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extent you are able to Design and implement pointers in C?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO6	To what extent you are able to design and implement various file operations in C?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - AU232 - Computer Programming LAB

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3			1							
CO2												1
CO3		3										1
CO4		3		2							1	
CO5	1	3			2							1
CO6		2		2								

CO->PSO MAPPING - AU232 - Computer Programming LAB

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2			2
CO2	2			2
CO3	2			
CO4	2			2
CO5				
CO6				

COURSE->PO MAPPING - AU232 - Computer Programming LAB

AU232/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3		2	2						1	1

COURSE->PSO MAPPING - AU232 - Computer Programming LAB

	PSO1	PSO2	PSO3	PSO4

AU232/PSO	2			2
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AU234

Course Code	Course Name	L-T-P:C	Year of Introduction
AU234	Vehicle Systems Lab	0-0-3:1	2016

No.	Course Outcome - AU234 - Vehicle Systems Lab	Target
CO1	Demonstrate the applications of components in different vehicles	70%
CO2	Identify the various tools and procedures for overhauling	70%
CO3	Explain the working of specific parts in a vehicle	60%
CO4	Perform the maintenance of a vehicle	65%
CO5	Evaluate the common faults and reasons behind part failures	65%
CO6	Identify the fault rectification techniques for different elements	65%

COURSE END SURVEY - AU234 - Vehicle Systems Lab

Sl.No	Questions & Options
CO1	Are you able to identify the application and location of a components in a vehicle?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO2	How competent are you in choosing the correct tool for the disassembly or assembly of a component?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	Are you able to explain the working of the parts disassembled and assembled?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO4	Can you perform maintenance of a vehicle if the equipments are provided to you?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO5	Can you identify the faults of a system based on the customer input?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO6	Are you competent in suggesting the fault rectification of a system in a vehicle?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>

CO->PO MAPPING - AU234 - Vehicle Systems Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		1				2		3	3	3	1	2

CO2								1	1	3		1
CO3	1	1				1	1		2	3	1	2
CO4	1	1	1			2	1	3	3	3		1
CO5	1	2	2	1		1		2	3	3	2	2
CO6			2	1		1	3	2	2	3	2	1

CO->PSO MAPPING - AU234 - Vehicle Systems Lab

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1	1	3	1
CO2			2	
CO3	2		1	1
CO4	3		1	1
CO5	3	2		1
CO6		1	3	2

COURSE->PO MAPPING - AU234 - Vehicle Systems Lab

AU234/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	1	2	2	1		2	3	3	3	3	2	2

COURSE->PSO MAPPING - AU234 - Vehicle Systems Lab

AU234/PSO	PSO1	PSO2	PSO3	PSO4
	3	2	3	2

HS200

Course Code	Course Name	L-T-P:C	Year of Introduction
HS200	Life Skills/Business Economics	3-0-0:3	2016

No.	Course Outcome - HS200 - Life Skills/Business Economics	Target
CO1	Identify concepts in economics and interpret their role in managerial economics which will be useful in their profession and business.	66%
CO2	Analyze and interpret demand and supply of goods and services in the economy and its influence and execute production analysis.	62%
CO3	Recognize the effect of trade cycle in business and analyze various market situations.	61%
CO4	Measure National Income and evaluate measures taken by RBI in controlling inflation.	61%

CO5	Analyze, compare and justify investment decisions based on capital budgeting methods.	61%
CO6	Prepare and analyze balance sheets, interpret taxation system in India, compare different sources of capital for firms and carry out demand forecast.	61%

COURSE END SURVEY - HS200 - Life Skills/Business Economics

Sl.No	Questions & Options
CO1	To what extent you are able to identify concepts in Economics & interpret their role in Managerial Economics Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO2	To what extent you are able to analyse & interpret determinants of demand & supply & the factors which leads to changes in demand & supply of goods & services in the economy. Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO3	To what extent you are able to recognise the effect of trade cycle in business Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To what extent you are able to evaluate the effect of the measures taken by RBI in controlling inflation Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO5	To what extent you are able to compare & justify investment decisions based on capital budgeting methods Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO6	To what extent you are able to prepare balance sheet,interpret GST& compare the different sources of finance for firms Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>

CO->PO MAPPING - HS200 - Life Skills/Business Economics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	1	1	1	1	1	1	1	1	1	1
CO2	2		2		1	1		1	1	2	1	2
CO3			2			1	1	1		1	1	1
CO4			1			2	1	1	1	1	1	2
CO5	2		2		1	1	1	1		1		2
CO6	1		1		1	1		1	1	2	1	1

CO->PSO MAPPING - HS200 - Life Skills/Business Economics

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1	1	1	1
CO2	1	1	1	1

CO3	1	1	1	1
CO4	1	1	1	1
CO5	1	1	1	1
CO6	1	1	1	1

COURSE->PO MAPPING - HS200 - Life Skills/Business Economics

HS200/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	1	2	1	1	2	1	1	1	2	1	2

COURSE->PSO MAPPING - HS200 - Life Skills/Business Economics

HS200/PSO	PSO1	PSO2	PSO3	PSO4
	1	1	1	1

ME220

Course Code	Course Name	L-T-P:C	Year of Introduction
ME220	Manufacturing Technology	3-0-0:3	2016

No.	Course Outcome - ME220 - Manufacturing Technology	Target
CO1	List various casting processes and recall the technology related to each	65%
CO2	Select the rolling methods required for getting the required shapes of rolled products	65%
CO3	Identify the important aspects of the forging techniques	65%
CO4	Discuss the principles of location and clamping	65%
CO5	Compare the different sheet metal working processes and justify their applications to produce various shapes and products	65%
CO6	Explain various types of welding processes	65%

COURSE END SURVEY - ME220 - Manufacturing Technology

Sl.No	Questions & Options
CO1	To what extent you are able to enlist different types of casting process and choose an appropriate process for a specified product?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO2	How well you can discuss different rolling methods and identify a suitable technique for a specified item?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO3	How effectively will you be able to discuss different forging techniques?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5

CO4	How well informed are you regarding the fundamentals concepts of location and clamping
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO5	How extensively will you be able to discuss characteristics of different sheet metal operations?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO6	How much in depth you are aware about different welding processes?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5

CO->PO MAPPING - ME220 - Manufacturing Technology

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1								2				
CO2		1	3				2					1
CO3			3			1						
CO4										1		
CO5				2		3			1			
CO6	3				1						2	

CO->PSO MAPPING - ME220 - Manufacturing Technology

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3		2	
CO2		3		1
CO3		3		
CO4			2	
CO5	1		3	
CO6		2		3

COURSE->PO MAPPING - ME220 - Manufacturing Technology

ME220/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	1	3	2	1	3	2	2	1	1	2	1

COURSE->PSO MAPPING - ME220 - Manufacturing Technology

ME220/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	3

ME236

Course Code	Course Name	L-T-P:C	Year of Introduction
ME236	MACHINE SHOP	0-0-3:1	2016

No.	Course Outcome - ME236 - MACHINE SHOP	Target
CO1	Identify various machining processes using machine tools	60%
CO2	Demonstrate machine tool construction and configuration	65%
CO3	Perform different measuring methods on various works profiles	65%
CO4	Demonstrate basic machining operations in lathe and milling machines	70%
CO5	Evaluate various tools used in lathe, milling and drilling operations	65%
CO6	Demonstrate the arc welding process with different work positions	70%

COURSE END SURVEY - ME236 - MACHINE SHOP

Sl.No	Questions & Options
CO1	Can you understand the lathe, milling and drilling machines operations?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	Can you identify lathe parts and specifications?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	Can you measure work piece dimensions using any measuring instruments?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	Can you perform all lathe and milling machines basic operations?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO5	Can you understand the various tools for lathe, milling and drilling machines operations?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO6	Can you perform arc welding process?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - ME236 - MACHINE SHOP

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1			2					1				
CO2										1		
CO3					3							
CO4	2							1				3

CO5								1				
CO6				2							1	

CO->PSO MAPPING - ME236 - MACHINE SHOP

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2			
CO2		3		1
CO3			3	
CO4		1		
CO5			2	
CO6	3			2

COURSE->PO MAPPING - ME236 - MACHINE SHOP

ME236/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2		2	2	3			1		1	1	3

COURSE->PSO MAPPING - ME236 - MACHINE SHOP

ME236/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	2

AU212

Course Code	Course Name	L-T-P:C	Year of Introduction
AU212	Auto Power Plant	3-0-0:3	2016

No.	Course Outcome - AU212 - Auto Power Plant	Target
CO1	Describe the fundamentals of IC Engines	50%
CO2	explain the constructional details of IC engines	50%
CO3	demonstrate automotive lubrication system	50%
CO4	Illustrate automotive cooling system	50%
CO5	describe fuel supply system in IC engines	50%

COURSE END SURVEY - AU212 - Auto Power Plant

Sl.No	Questions & Options
CO1	What is your level of understanding of fundamentals of IC Engine

	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO2	How is your understanding on constructional details of IC engine components
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO3	How clearly did you understand the lubrication system and cooling system in IC Engines
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO4	what is your level of understanding of fuel supply systems in SI and CI Engine
	Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>
CO5	Overall, how do you rate this course
	Answer Choice- <i>5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5</i>

CO->PO MAPPING - AU212 - Auto Power Plant

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	1								
CO2	2	2	3	1								
CO3	3	2	1	1								
CO4	3	2	1	1								
CO5	3	3	3	1								

CO->PSO MAPPING - AU212 - Auto Power Plant

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	1	1	1
CO2	2	2	2	
CO3	2	1		
CO4	2	1		
CO5	3	2		1

COURSE->PO MAPPING - AU212 - Auto Power Plant

AU212/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	1								

COURSE->PSO MAPPING - AU212 - Auto Power Plant

AU212/PSO	PSO1	PSO2	PSO3	PSO4
	3	2	2	1

ME212

Course Code	Course Name	L-T-P:C	Year of Introduction
ME212	FLUID MECHANICS	3-1-0:4	2016

No.	Course Outcome - ME212 - FLUID MECHANICS	Target
CO1	Establish fundamental knowledge about basics of fluid mechanics	50%
CO2	Establish fundamental knowledge about basics of fluid flow	50%
CO3	Gain knowledge with the concepts of flow measurements and flow through pipes	50%
CO4	Understand about momentum and energy equations to fluid flow problems	50%
CO5	Apply knowledge to evaluate head loss in pipes and conduits	50%
CO6	Gain Knowledge on dimensional analysis	50%

COURSE END SURVEY - ME212 - FLUID MECHANICS

Sl.No	Questions & Options
CO1	To what extent you are able to establish fundamental knowledge about basics of fluid mechanics
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extent you are able to establish fundamental knowledge about basics of fluid flow
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extent you are able to gain knowledge with the concepts of flow measurements and flow through pipes
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To what extent you are able to apply momentum and energy equations to fluid flow problems
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extent you can evaluate head loss in pipes and conduits
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	To what extent you gain Knowledge on dimensional analysis
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - ME212 - FLUID MECHANICS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1		1		3	1		1		1	1	
CO2	2	1		2			1	2				1
CO3		1										
CO4	3		1		1				1			

CO5		1										
CO6			2									

CO->PSO MAPPING - ME212 - FLUID MECHANICS

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1			
CO2		2		
CO3	1			
CO4			1	
CO5				1
CO6	1			

COURSE->PO MAPPING - ME212 - FLUID MECHANICS

ME212/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	1	2	2	3	1	1	2	1	1	1	1

COURSE->PSO MAPPING - ME212 - FLUID MECHANICS

ME212/PSO	PSO1	PSO2	PSO3	PSO4
	1	2	1	1

ME214

Course Code	Course Name	L-T-P:C	Year of Introduction
ME214	THEORY OF MACHINES	4-0-0:4	2016

No.	Course Outcome - ME214 - THEORY OF MACHINES	Target
CO1	Analyse various mechanisms in mechanical systems	60%
CO2	Understand and analyse the basics of gears and gear trains	60%
CO3	Synthesize cams having various followers and follower motions	60%
CO4	Analyse the dynamics of gyroscopes and flywheels	60%
CO5	Understand and analyse the basics of governors and balancing	60%
CO6	Analyse the kinematics and dynamics of transverse and torsional vibrations	60%

COURSE END SURVEY - ME214 - THEORY OF MACHINES

Sl.No	Questions & Options
	Is your knowledge helpful in analysing various mechanisms in mechanical systems

CO1	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>
CO2	Are you able to understand and analyse the basics of gears and gear trains
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO3	Is your understanding on the topic helpful in synthesizing cams having various followers and follower motions
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>
CO4	Are you able to analyse the dynamics of gyroscopes and flywheels
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO5	Are you able to understand and analyse the basics of governors and balancing
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO6	Are you able to analyse the kinematics and dynamics of transverse and torsional vibrations
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>

CO->PO MAPPING - ME214 - THEORY OF MACHINES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	2	1	1	1				1
CO2	3	3	2	2	2	1						
CO3	3	3	3	3	2	2	1	1	1	1		1
CO4	3	3	3	3	3	2	1	1	1			3
CO5	3	3	3	2	3	2	1					1
CO6	3	3	3	2	2	1	1				1	1

CO->PSO MAPPING - ME214 - THEORY OF MACHINES

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	3	1	3
CO2	3	2	1	3
CO3	3	3	1	3
CO4	3	3	1	3
CO5	3	2	1	3
CO6	3	2	1	2

COURSE->PO MAPPING - ME214 - THEORY OF MACHINES

ME214/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	2	1	1	1	1	1	3

COURSE->PSO MAPPING - ME214 - THEORY OF MACHINES

ME214/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	1	3

MET202

Course Code	Course Name	L-T-P:C	Year of Introduction
MET202	ENGINEERING THERMODYNAMICS	3-1-0:4	2019

No.	Course Outcome - MET202 - ENGINEERING THERMODYNAMICS	Target
CO1	Develop fundamental knowledge in thermodynamic concepts	61%
CO2	Review the laws of thermodynamics and apply these to the analysis of thermodynamic systems and components	61%
CO3	Evaluate entropy changes in a wide range of processes and determine the reversibility or irreversibility of a process from such calculations	61%
CO4	Identify the properties of pure substances, gases, and gas mixture on property diagrams and obtain the data from property tables	61%
CO5	Apply thermodynamic relations and problem-solving ability to resolve issues related to social interest	61%
CO6	Generalize the basic axioms of classical, macroscopic thermodynamic analysis and extrapolate those concepts to thermodynamic processes and substances	61%

COURSE END SURVEY - MET202 - ENGINEERING THERMODYNAMICS

Sl.No	Questions & Options
CO1	Develop fundamental knowledge in thermodynamic concepts
	Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>
CO2	Review the laws of thermodynamics and apply these to the analysis of thermodynamic systems and components
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO3	Evaluate entropy changes in a wide range of processes and determine the reversibility or irreversibility of a process from such calculations
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO4	Identify the properties of pure substances, gases and gas mixture on property diagrams and obtain the data from property tables
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	Apply thermodynamic relations and problem solving ability to resolve issues related to social interest
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>

CO6	Generalize the basic axioms of classical, macroscopic thermodynamic analysis and extrapolate those concepts to thermodynamic processes and substances
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>

CO->PO MAPPING - MET202 - ENGINEERING THERMODYNAMICS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2								
CO2	3	2	2	2					2		2	
CO3	3	3	3	3	3				2			
CO4	3	3	3	3	3					2	3	
CO5	3	3	3	3	2				2			
CO6	3	3	3	3	3					2	3	

CO->PSO MAPPING - MET202 - ENGINEERING THERMODYNAMICS

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	3		
CO2	3	3		
CO3	3	3		
CO4		3		
CO5	3	3		
CO6		3		

COURSE->PO MAPPING - MET202 - ENGINEERING THERMODYNAMICS

MET202/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3				2	2	3	

COURSE->PSO MAPPING - MET202 - ENGINEERING THERMODYNAMICS

MET202/PSO	PSO1	PSO2	PSO3	PSO4
	3	3		

MUT204

Course Code	Course Name	L-T-P:C	Year of Introduction
MUT204	Auto Power Plant	3-1-0:4	2019

No.	Course Outcome - MUT204 - Auto Power Plant	Target
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CO1	Understand various types of IC engines and components of the engine and its functions.	65%
CO2	Understand the Engine cooling and lubrication systems	65%
CO3	Gain knowledge on the fuel system components and their working in an SI Engine	65%
CO4	Gain knowledge on the fuel system components and their working in a CI Engine	65%
CO5	Evaluate and test the performance of an IC engine based on different parameters	65%

COURSE END SURVEY - MUT204 - Auto Power Plant

Sl.No	Questions & Options
CO1	Are you able to classify and identify the different components of an IC engine?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO2	Rate you able to understand the working of cooling and lubrication systems in an IC engine?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extend you able to identify the different components and working of a modern SI Engine?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO4	TO what extend you are able to identify the different components and working of a modern CI Engine?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO5	What is your level of understanding about testing and trouble shooting an engine to meet the requirements?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>

CO->PO MAPPING - MUT204 - Auto Power Plant

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1			1	1		1	1	1	1
CO2	2		1		1	1	2		1	1	1	1
CO3	2	1	2	1		1	2			2	1	1
CO4	2		2			3	2			2	1	1
CO5	2		1	1		1	2		2	2	1	2

CO->PSO MAPPING - MUT204 - Auto Power Plant

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	1	2	1
CO2	3	1	2	1
CO3	3	1	2	1
CO4	3	1	2	1

CO5	3	1	2	1
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COURSE->PO MAPPING - MUT204 - Auto Power Plant

MUT204/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	1	2	1	1	3	2		2	2	1	2

COURSE->PSO MAPPING - MUT204 - Auto Power Plant

MUT204/PSO	PSO1	PSO2	PSO3	PSO4
	3	1	2	1

MUT206

Course Code	Course Name	L-T-P:C	Year of Introduction
MUT206	Mechanics of Solids	3-1-0:4	2019

No.	Course Outcome - MUT206 - Mechanics of Solids	Target
CO1	Analyse the stresses, strains and deformations of structures under 2- and 3-dimensional loading by tensorial and graphical (Mohr's circle) approaches	60%
CO2	Analyze the strength of materials using stress-strain relationships for structural and thermal loading	60%
CO3	Use Shear Force and Bending Moment diagrams to estimate the deflection of beams, and strain energy methods to determine the deformation of structures subjected to various loading conditions	60%
CO4	Apply the theory of pure bending to study the structural behaviour of beams and perform basic design of shafts subjected to torsional loading	60%
CO5	Estimate the strength of thin cylinders, spherical vessels and columns, and appreciate the theories of failures and its relevance in mechanical design	60%

COURSE END SURVEY - MUT206 - Mechanics of Solids

Sl.No	Questions & Options
CO1	To what extend you learned stresses, strains and deformations of structures under 2- and 3-dimensional loading by tensorial and graphical (Mohr's circle) approaches
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extend you learned to Analyse the strength of materials using stress-strain relationships for structural and thermal loading
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extend you learnt to Use Shear Force and Bending Moment diagrams to estimate the deflection of beams, and strain energy methods to determine the deformation of structures subjected to various loading conditions
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO4	To what extend you can Apply the theory of pure bending to study the structural behaviour of beams and perform basic design of shafts subjected to torsional
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extend you learnt to Estimate the strength of thin cylinders, spherical vessels and columns, and appreciate the theories of failures and its relevance in mechanical design
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - MUT206 - Mechanics of Solids

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2		1	3	2		2			1		
CO2	2		3		2	2					2	
CO3	3	1	3	2				1		2		
CO4		2	2		2				1			
CO5	3	2	2		2			3				1

CO->PSO MAPPING - MUT206 - Mechanics of Solids

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	3	3	2
CO2	2	3		
CO3	3	1	3	3
CO4	3			2
CO5	1	2	2	2

COURSE->PO MAPPING - MUT206 - Mechanics of Solids

MUT206/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	3	3	2	2	2	3	1	2	2	1

COURSE->PSO MAPPING - MUT206 - Mechanics of Solids

MUT206/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	3

EST200

Course Code	Course Name	L-T-P:C	Year of Introduction
EST200	Design & Engineering	2-0-0:2	2019

No.	Course Outcome - EST200 - Design & Engineering	Target
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CO1	Explain the different concepts and principles involved in design engineering	66%
CO2	Apply design thinking while learning and practicing engineering.	66%
CO3	Explain different aspects of design communication, modeling, prototyping and proofing.	66%
CO4	Apply design engineering concepts based on Learning and Problem-based Learning.	66%
CO5	Develop innovative, reliable, sustainable and economically viable designs incorporating knowledge in engineering.	66%

COURSE END SURVEY - EST200 - Design & Engineering

Sl.No	Questions & Options
CO1	To what extent you learned the different concepts and principles involved in design engineering
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	To what extent did you learn to apply design thinking while learning and practicing engineering
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	Did you develop innovative, reliable, sustainable and economically viable designs incorporating different segments of knowledge in engineering
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO4	How much did you learn about the application of design engineering concepts?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	Could you develop innovative, reliable, sustainable and economically viable designs incorporating knowledge in engineering
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>

CO->PO MAPPING - EST200 - Design & Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	1	3								
CO2		2	2									
CO3			3									
CO4			2		3							
CO5	3			2								

CO->PSO MAPPING - EST200 - Design & Engineering

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2			1
CO2		2	1	
CO3	3		2	3

CO4		2	1	
CO5	3		2	

COURSE->PO MAPPING - EST200 - Design & Engineering

EST200/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	3	3	3							

COURSE->PSO MAPPING - EST200 - Design & Engineering

EST200/PSO	PSO1	PSO2	PSO3	PSO4
	3	2	2	3

MUL204

Course Code	Course Name	L-T-P:C	Year of Introduction
MUL204	Vehicle Systems Lab	0-0-3:2	2019

No.	Course Outcome - MUL204 - Vehicle Systems Lab	Target
CO1	Understand the working of different systems of an automobile	65%
CO2	Troubleshooting of the different systems of an automobile	65%
CO3	Diagnosis system for identification and solution for a specific problem	65%
CO4	Identification of root cause of a problem and rectification using RCA	65%
CO5	Identification of immediate solution for a problem (ICA) and implementation	65%

COURSE END SURVEY - MUL204 - Vehicle Systems Lab

Sl.No	Questions & Options
CO1	Can you explain the working of a specific system in an automobile?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO2	Can you identify the problems of different systems of an automobile
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO3	Are you able to diagnose the problem identified
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO4	Can you carryout the root cause analysis of a given problem
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO5	Can you find an immediate solution for a problem?

Answer Choice- *Always/Very often/Sometimes/Rarely/Never*

CO->PO MAPPING - MUL204 - Vehicle Systems Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1									1	2		1
CO2		3						1	2	1		1
CO3		2				1		1	2	2		1
CO4		3				2		2	2	2		1
CO5		1				1		1	1	2		1

CO->PSO MAPPING - MUL204 - Vehicle Systems Lab

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1		1	
CO2	2		1	1
CO3	3		1	2
CO4	3		1	2
CO5	3		1	2

COURSE->PO MAPPING - MUL204 - Vehicle Systems Lab

MUL204/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		3				2		2	2	2		1

COURSE->PSO MAPPING - MUL204 - Vehicle Systems Lab

MUL204/PSO	PSO1	PSO2	PSO3	PSO4
	3		1	2

MUL202

Course Code	Course Name	L-T-P:C	Year of Introduction
MUL202	MATERIALS TESTING LAB	0-0-3:2	2019

No.	Course Outcome - MUL202 - MATERIALS TESTING LAB	Target
CO1	To understand the basic concepts of analysis of circular shafts subjected to torsion	65.5%
CO2	To understand the behaviour of engineering component subjected to loading and failure concepts	65.5%
CO3	Evaluate the strength of ductile and brittle materials subjected to compressive, tensile, shear and bending forces	65.5%

CO4	Demonstrate the knowledge and skills to conduct and analyzing the results with respect to hardness testing and impact testing	65.5%
CO5	To specify suitable material for applications in the field of design and manufacturing	65.5%

COURSE END SURVEY - MUL202 - MATERIALS TESTING LAB

Sl.No	Questions & Options
CO1	To how much extent you are able to understand the basic concepts of analysis of circular shafts subjected to torsion
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To how much extent you are able to understand the behaviour of engineering component subjected to loading and failure concepts
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To how much extent you are able to evaluate the strength of ductile and brittle materials subjected to compressive, tensile, shear and bending forces
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To how much extent you are able to demonstrate the knowledge and skills to conduct and analyzing the results with respect to hardness testing and impact testing
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To how much extent you are able to specify suitable material for applications in the field of design and manufacturing
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - MUL202 - MATERIALS TESTING LAB

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3		3	2	3	2	2	2	2
CO2	3	3	3	3	1	3	3	3	3	3	3	3
CO3	3	3	3	3	1	2	3	3	2	2	2	3
CO4	3	2	3	2		2		2	2	1	1	3
CO5	3	3	3	3		3	3	2	2	2	1	3

CO->PSO MAPPING - MUL202 - MATERIALS TESTING LAB

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	2	1	1
CO2	3	3	2	3
CO3	3	3	3	2
CO4	2	2	1	2

CO5	3	3	2	3
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COURSE->PO MAPPING - MUL202 - MATERIALS TESTING LAB

MUL202/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	1	3	3	3	3	3	3	3

COURSE->PSO MAPPING - MUL202 - MATERIALS TESTING LAB

MUL202/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	3

MAT202

Course Code	Course Name	L-T-P:C	Year of Introduction
MAT202	Probability, Statistics and Numerical Methods	3-1-0:4	2019

No.	Course Outcome - MAT202 - Probability, Statistics and Numerical Methods	Target
CO1	Understand the concept, properties and important models of discrete random variables and, using them analyse suitable random phenomena	55%
CO2	Understand the concept, properties and important models of continuous random variables and, using them, analyse suitable random phenomena.	55%
CO3	Perform statistical inferences concerning characteristics of a population based on attributes of samples drawn from the population	57%
CO4	Compute roots of equations, evaluate definite integrals and perform interpolation on given numerical data using standard numerical techniques	60%
CO5	Apply standard numerical techniques for solving systems of equations, fitting curves on given numerical data and solving ordinary differential equations.	60%

COURSE END SURVEY - MAT202 - Probability, Statistics and Numerical Methods

Sl.No	Questions & Options
CO1	How far this course has helped you to understand the concept, properties and important models of discrete random variables and, using them analyse suitable random phenomena
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	How far this course has helped you to understand the concept, properties and important models of continuous random variables and, using them, analyse suitable random phenomena.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	How far this course has helped you to perform statistical inferences concerning characteristics of a population based on attributes of samples drawn from the population
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO4	How far this course has helped you to compute roots of equations, evaluate definite integrals and perform interpolation on given numerical data using standard numerical techniques
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	How far this course has helped you to apply standard numerical techniques for solving systems of equations, fitting curves on given numerical data and solving ordinary differential equations.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - MAT202 - Probability, Statistics and Numerical Methods

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1									
CO2	3	2	1									
CO3	3	2	1		1							
CO4	3	2	1									
CO5	3	2	1									

CO->PSO MAPPING - MAT202 - Probability, Statistics and Numerical Methods

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - MAT202 - Probability, Statistics and Numerical Methods

MAT202/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	1		1							

COURSE->PSO MAPPING - MAT202 - Probability, Statistics and Numerical Methods

MAT202/PSO	PSO1	PSO2	PSO3	PSO4

MCN202

Course Code	Course Name	L-T-P:C	Year of Introduction
MCN202	CONSTITUTION OF INDIA	2-0-0:0	2019

No.	Course Outcome - MCN202 - CONSTITUTION OF INDIA	Target
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CO1	Awareness of Constitution of India	60%
CO2	Knowing duties and rights of Citizens	60%
CO3	Understanding the working of union executive, parliament..	60%
CO4	Understanding the working of judiciary, legislature, state executive	60%
CO5	Utilize special provision and statutory institutions	60%
CO6	Patriotism and being responsible citizens.	60%

COURSE END SURVEY - MCN202 - CONSTITUTION OF INDIA

Sl.No	Questions & Options
CO1	Did you have the awareness of constitution of India
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO2	Are you able to know about the duties and rights of Citizens
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO3	Did you able to understand the working of union executive, parliament..
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO4	Do you understand the working of judiciary, legislature, state executive
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO5	Are you aware about the special provision and statutory institutions
	Answer Choice- <i>Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied</i>
CO6	Did you get clear idea about the responsibilities of a citizens and importance patriotism
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>

CO->PO MAPPING - MCN202 - CONSTITUTION OF INDIA

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1							2	3	2	2		
CO2							3	3	3	3		
CO3							3	2	3	3		
CO4							3	2	3	3		
CO5							3	2	3	3		
CO6							3	3	3	2		

CO->PSO MAPPING - MCN202 - CONSTITUTION OF INDIA

CO/PSO	PSO1	PSO2	PSO3	PSO4
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CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

COURSE->PO MAPPING - MCN202 - CONSTITUTION OF INDIA

MCN202/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
							3	3	3	3		

COURSE->PSO MAPPING - MCN202 - CONSTITUTION OF INDIA

MCN202/PSO	PSO1	PSO2	PSO3	PSO4

SEMESTER-5**ME311**

Course Code	Course Name	L-T-P:C	Year of Introduction
ME311	Manufacturing Processes	3-0-0:3	2016

No.	Course Outcome - ME311 - Manufacturing Processes	Target
CO1	Identify the casting methods for the preparation of a component	65%
CO2	Illustrate bulk forming methods that can be adopted	65%
CO3	Demonstrate the sheet metal forming process and apply it in automobile	65%
CO4	Define the fusion process and its applications in the manufacturing field	65%
CO5	Identify the non-traditional machining method to be adopted for the machining of a component	65%
CO6	Describe the latest manufacturing processes in the development of a component.	65%

COURSE END SURVEY - ME311 - Manufacturing Processes

Sl.No	Questions & Options
CO1	Can you understand various casting process?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO2	Can you understand different metal forming methods used in automobile industries?

	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO3	Can you understand various sheet metal forming process?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	Can you understand various welding operations used in automobile industries?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO5	Can you identify the NTMP used for the manufacturing of automobile components?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO6	Can you understand the latest manufacturing process like RPT?
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>

CO->PO MAPPING - ME311 - Manufacturing Processes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	3	2	3	1	2	1	2	1	3	2
CO2	1	3	3	1	2	1	3	1	1	1	3	2
CO3	1	1	2	3	1	1	2	1	1	1	3	2
CO4	1	3	3	1	2	1	2	1	2	1	3	1
CO5	1	3	3	3	2	2	1	1	2	1	3	1
CO6	1	1	2	2	1	1	2	1	2	1	3	2

CO->PSO MAPPING - ME311 - Manufacturing Processes

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1	1	2	2
CO2	2	1	1	2
CO3	2	1	2	3
CO4	3	2	3	1
CO5	2	1	2	2
CO6	3	3	2	1

COURSE->PO MAPPING - ME311 - Manufacturing Processes

ME311/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	1	3	3	3	3	2	3	1	2	1	3	2

COURSE->PSO MAPPING - ME311 - Manufacturing Processes

	PSO1	PSO2	PSO3	PSO4

ME311/PSO	3	3	3	3
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ME307

Course Code	Course Name	L-T-P:C	Year of Introduction
ME307	Machine Design-I	3-1-0:4	2016

No.	Course Outcome - ME307 - Machine Design-I	Target
CO1	Get familiarized with common mechanisms used in machines and everyday life	65%
CO2	Conduct a complete (translational and rotational) velocity, acceleration analysis of the mechanisms.	65%
CO3	Carry out the stability analysis of automobiles by applying the gyroscopic effect	60%
CO4	Evaluate the turning moment of flywheel while carrying out the design of IC Engines	65%
CO5	Analyze gear mechanism classification and to become familiar with gear standardization and specification in design	60%
CO6	Synthesize the different cam-follower mechanisms under different operating conditions	65%

COURSE END SURVEY - ME307 - Machine Design-I

Sl.No	Questions & Options
CO1	How about the application of common mechanisms used in machines and everyday life
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>
CO2	Are you able to do kinematic analysis of common mechanisms
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO3	Are you able to analyse the stability of vehicles based on gyroscopic analysis
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO4	Are you having the clear cut idea on flywheel analysis
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO5	Is your knowledge adequate in carrying out the analysis of gears and gear trains
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO6	Are you able to synthesize the different cam-follower mechanisms under different operating conditions
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>

CO->PO MAPPING - ME307 - Machine Design-I

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	1	3	2	1						

CO2	3	3	1	3	2	1		1				
CO3	3	3	2	3	3	1	1	2	1	1	1	1
CO4	3	3	2	2	3	1	1				1	2
CO5	3	3	2	3	2					1		1
CO6	3	3	3	2	2	2	1	1			1	1

CO->PSO MAPPING - ME307 - Machine Design-I

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	3	1	2
CO2	3	2		2
CO3	3	3		2
CO4	3	3	1	2
CO5	3	3	1	2
CO6	3	3	1	2

COURSE->PO MAPPING - ME307 - Machine Design-I

ME307/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	2	1	2	1	1	1	2

COURSE->PSO MAPPING - ME307 - Machine Design-I

ME307/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	1	2

AU341

Course Code	Course Name	L-T-P:C	Year of Introduction
AU341	Design Project	0-1-2:2	2016

No.	Course Outcome - AU341 - Design Project	Target
CO1	To understand the engineering aspects of design with reference to simple products	90%
CO2	To foster innovation in design of products, processes or systems	90%
CO3	To develop design that add value to products and solve technical problems	90%
CO4	To think innovatively on the development of components, products, processes or technologies in the engineering field	90%
CO5	Analyse the problem requirements and arrive workable design solutions	90%

COURSE END SURVEY - AU341 - Design Project

Sl.No	Questions & Options
CO1	To what extend you are able to understand the engineering aspects of design with reference to simple products
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	To what extend you are able to foster innovation in design of products, processes, systems
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	To what extend you are able to design that add value to products and solve technical problems
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extend you are able to think innovatively on the development of components, products, processes or technologies in the engineering field
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extend you are able to analyse the problem requirements and arrive workable design solutions
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - AU341 - Design Project

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												
CO5												

CO->PSO MAPPING - AU341 - Design Project

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - AU341 - Design Project

AU341/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU341 - Design Project

AU341/PSO	PSO1	PSO2	PSO3	PSO4

AU341

Course Code	Course Name	L-T-P:C	Year of Introduction
AU341	Design Project	0-1-2:2	2016

COURSE END SURVEY - AU341 - Design Project
CO->PO MAPPING - AU341 - Design Project

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - AU341 - Design Project

CO/PSO	PSO1	PSO2	PSO3	PSO4

COURSE->PO MAPPING - AU341 - Design Project

AU341/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU341 - Design Project

AU341/PSO	PSO1	PSO2	PSO3	PSO4

AU307

Course Code	Course Name	L-T-P:C	Year of Introduction
AU307	Vehicle Body Engineering	3-0-0:3	2016

No.	Course Outcome - AU307 - Vehicle Body Engineering	Target
CO1	Design a vehicle body with maximum comfort	81%
CO2	Define the theory of drag and design vehicles with minimum drag	81%
CO3	Describe the various manufacturing process of body construction with practical challenges	81%
CO4	Demonstrate maintenance of vehicle body and fault detection associated with vehicle body	81%
CO5	Identify advanced technologies involved in the aerodynamic design concepts of vehicle body	81%
CO6	Illustrate comfort and safety considerations that have to be taken into account while designing a vehicle	81%

COURSE END SURVEY - AU307 - Vehicle Body Engineering

Sl.No	Questions & Options
CO1	To what extend you are able to design vehicle body with maximum comfort

	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extend you are able to explain the theory of drag and design vehicles with minimum drag
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO3	To what extend you are able to explain various manufacturing process of body construction with practical challenges
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To what extend you are able to demonstrate maintenance of vehicle body and fault detection associated with vehicle body
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extend you are able to identify advanced technologies involved in the aerodynamic design concepts of vehicle body
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	To what extend you are able to illustrate comfort and safety considerations that have to be taken into account while designing a vehicle
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - AU307 - Vehicle Body Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	3		3	3	3					
CO2	2		3	1	3	2	2					
CO3		2	2	2	3	1	1	1			2	
CO4		2	2	2	2	1						
CO5	2	3	3	2	3	1						
CO6	2	3	1	2	2							

CO->PSO MAPPING - AU307 - Vehicle Body Engineering

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	2		
CO2	3	2		1
CO3	1	1		1
CO4	2	1		2
CO5	2	1		
CO6	1	1		1

COURSE->PO MAPPING - AU307 - Vehicle Body Engineering

AU307/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	3	3	2	3	3	3	1			2	

COURSE->PSO MAPPING - AU307 - Vehicle Body Engineering

AU307/PSO	PSO1	PSO2	PSO3	PSO4
	3	2		2

ME333

Course Code	Course Name	L-T-P:C	Year of Introduction
ME333	Heat Engines Lab	0-0-3:1	2016

No.	Course Outcome - ME333 - Heat Engines Lab	Target
CO1	Test the given fuel and lubricant for optimum transportation condition	65%
CO2	Identify the different parameters for engine testing	68%
CO3	Analyse the results, analytically and graphically and give the feedback	69%
CO4	Optimize the given Fuel injection system used in diesel vehicles	69%
CO5	Identify the optimum cooling parameters for the given engine	69%
CO6	Identify the sources of losses and provide remedial measures to reduce them	70%

COURSE END SURVEY - ME333 - Heat Engines Lab

Sl.No	Questions & Options
CO1	Are you able to carryout the test for all types of fuels using the method
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO2	Are you agreeig with you understanding on identifying the different parameters for engine testing
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO3	Are you able to analyse the results, analytically and graphically and give the feedback
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO4	Are you able to optimize the given Fuel injection system used in diesel vehicles
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO5	Are you able to identify the optimum cooling parameters for the given engine
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
	Are you able to identify the sources of losses and provide remedial measures to reduce them

CO6	
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>

CO->PO MAPPING - ME333 - Heat Engines Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	3	3		3	3	3	2		1
CO2	3	3	2	3	3	3	2	1	3	2	2	1
CO3	2	2	2	2	2	1	3	2	3	1	2	1
CO4	3	2	2	2	1	3	1		2	3	1	2
CO5	2	2	1	3	2	1	2	2	3	1	2	1
CO6	3	1	3	2	2	3	2	1	2	2	2	2

CO->PSO MAPPING - ME333 - Heat Engines Lab

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	3	2	3
CO2	3	1	2	3
CO3	3	1	2	3
CO4	3	2	2	1
CO5	2	3	1	3
CO6	2	2	1	3

COURSE->PO MAPPING - ME333 - Heat Engines Lab

ME333/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3	3	3	3	3	2	2

COURSE->PSO MAPPING - ME333 - Heat Engines Lab

ME333/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	2	3

ME335

Course Code	Course Name	L-T-P:C	Year of Introduction
ME335	Production Engineering Lab	0-0-3:1	2016

No.	Course Outcome - ME335 - Production Engineering Lab	Target
CO1	Identify various machining processes using machine tools	70%

CO2	Demonstrate machine tool construction and configuration	70%
CO3	Perform different measuring methods on various works profiles	70%
CO4	Demonstrate basic machining operations in lathe and milling machines	70%
CO5	Evaluate various tools used in lathe, milling and drilling operations	70%
CO6	Demonstrate the arc welding process with different work positions	70%

COURSE END SURVEY - ME335 - Production Engineering Lab

Sl.No	Questions & Options
CO1	Can you understand the lathe, milling and drilling machines operations?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	Can you identify lathe parts and specifications?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	Can you measure work piece dimensions using any measuring instruments?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	Can you perform all lathe and milling machines basic operations?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	Can you understand the various tools for lathe, milling and drilling machines operations?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO6	Can you perform arc welding process?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>

CO->PO MAPPING - ME335 - Production Engineering Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	2		1		2	1		2		2
CO2	1	3	3		2	2	1	2		3		1
CO3	2	1		3	2	2	3		2	1	2	1
CO4	1	2	1		2		1	1		2	1	2
CO5	1	3	2	1	2	3	1	2	1	2	3	2
CO6	3	1	2		1		2	1		1	2	3

CO->PSO MAPPING - ME335 - Production Engineering Lab

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1	3	2	2

CO2	1	2	2	1
CO3	2	1	3	1
CO4	2	2	1	3
CO5	2	1	1	1
CO6	2	1	1	2

COURSE->PO MAPPING - ME335 - Production Engineering Lab

ME335/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	2	3	3	2	2	3	3	3

COURSE->PSO MAPPING - ME335 - Production Engineering Lab

ME335/PSO	PSO1	PSO2	PSO3	PSO4
	2	3	3	3

ME309

Course Code	Course Name	L-T-P:C	Year of Introduction
ME309	Metallurgy & Material Science	3-0-0:3	2016

No.	Course Outcome - ME309 - Metallurgy & Material Science	Target
CO1	Demonstrate the basic concepts of Physics of Materials and outline basic crystal structures.	60%
CO2	Illustrate the effect of solidification in material properties and evaluate basic characterization techniques like SEM, TEM, XRD etc.	60%
CO3	Analyze phase diagrams, predict the phases in an alloys based on composition and the resultant properties of that particular system.	60%
CO4	Evaluate the various strengthening mechanisms used in alloy systems	60%
CO5	Analyze the mechanisms of fracture failure and fatigue failure of materials.	60%
CO6	Examine the importance of composites and ceramics, and their advantages over conventional materials	60%

COURSE END SURVEY - ME309 - Metallurgy & Material Science

Sl.No	Questions & Options
CO1	Were you able to link the basics of material physics to material properties?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO2	How well did you understand the various characterisation methods?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5

CO3	Did you learn about the various phases in alloys and their importance in material properties?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO4	Were you able to learn the importance of alloys and alloying elements?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO5	To what extent did you came to know about various failure modes in materials?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO6	How well did you understand the importance of various ceramics and composites?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5

CO->PO MAPPING - ME309 - Metallurgy & Material Science

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2	3	1	1					
CO2	3	3	2	1	3	1	1					
CO3	3	3	2	2	3	1	1					
CO4	3	3	2	2	3	1	1					
CO5	3	3	2	1	3	1	1					
CO6	3	3	2	2	3	1	1					

CO->PSO MAPPING - ME309 - Metallurgy & Material Science

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	3	1	3
CO2	3			
CO3	3	3		
CO4	3	2		2
CO5	3			3
CO6	3	3		2

COURSE->PO MAPPING - ME309 - Metallurgy & Material Science

ME309/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2	2	3	1	1					

COURSE->PSO MAPPING - ME309 - Metallurgy & Material Science

ME309/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	1	3

EE311

Course Code	Course Name	L-T-P:C	Year of Introduction
EE311	Electrical Drives &Control for Automation	3-0-0:3	2016

No.	Course Outcome - EE311 - Electrical Drives &Control for Automation	Target
CO1	Classify and analyze the characteristics of DC Machines	48%
CO2	Selection of DC Machines based on intended applications	48%
CO3	Conduct standard tests and estimate different operative parameters of transformers and induction motors	48%
CO4	Interpret the major operational aspects of synchronous machines	48%
CO5	Compare different controllers used for automation	48%

COURSE END SURVEY - EE311 - Electrical Drives &Control for Automation

Sl.No	Questions & Options
CO1	To what extend you were able to classify and analyze the characteristics of DC Machines
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO2	To what extend you were able to grasp the concept of Selection of DC Machines based on intended applications
	Answer Choice- Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied
CO3	How much did you understand the concept behind conduction of Conduct standard tests and estimate different operative parameters of transformers and induction motors
	Answer Choice- Very high degree/High Degree/Moderate degree/Small Degree/Not at all
CO4	Now will you be able to interpret the major operational aspects of synchronous machines
	Answer Choice- Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful
CO5	To what extend you were able to compare different controllers used for automation
	Answer Choice- Very high degree/High Degree/Moderate degree/Small Degree/Not at all

CO->PO MAPPING - EE311 - Electrical Drives &Control for Automation

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1		2							
CO2	1	1	2									
CO3	1											
CO4												
CO5												

CO->PSO MAPPING - EE311 - Electrical Drives &Control for Automation

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1			
CO2	2			
CO3	1			
CO4	2			
CO5	3			

COURSE->PO MAPPING - EE311 - Electrical Drives &Control for Automation

EE311/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	1	2		2							

COURSE->PSO MAPPING - EE311 - Electrical Drives &Control for Automation

EE311/PSO	PSO1	PSO2	PSO3	PSO4
	3			

AU365

Course Code	Course Name	L-T-P:C	Year of Introduction
AU365	Automotive Pollution and Testing	3-0-0:3	2016

No.	Course Outcome - AU365 - Automotive Pollution and Testing	Target
CO1	Analyze the implications of emission, its testing and standards followed in different countries.	50%
CO2	Identify the sources and causes of the automobile emission	50%
CO3	Identify the different methods adopted for controlling pollution from automobile	50%
CO4	Evaluate emission checking methods and inspections for in-use vehicles	50%
CO5	Demonstrate the involvement of secondary sub-systems in the emission control of an automobile	50%
CO6	Identify the differences in emission due to different conventional and non-conventional fuels	50%

COURSE END SURVEY - AU365 - Automotive Pollution and Testing

Sl.No	Questions & Options
CO1	Are you able to comprehend different emission standards followed globally
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	Do you have a clear understanding of sources and causes of automotive emissions
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>

CO3	Do you have a clear understanding of methods adopted for controlling pollution from automobiles
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO4	Comment on your ability to access emission checking methods and inspections for in-use vehicles
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	how well you can apply involvement of secondary sub-systems in the emission control of an automobile
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	To what extend you are able to understand the significance of fuel effects in emission control
	Answer Choice- <i>5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5</i>

CO->PO MAPPING - AU365 - Automotive Pollution and Testing

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1			2			1						
CO2		2				3						
CO3		1	3				3					
CO4		3				2						
CO5		2	3									
CO6		2						1				

CO->PSO MAPPING - AU365 - Automotive Pollution and Testing

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1			3
CO2	3	2		2
CO3	2		3	
CO4	2	1		
CO5	1		1	
CO6	2			1

COURSE->PO MAPPING - AU365 - Automotive Pollution and Testing

AU365/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		3	3			3	3	1				

COURSE->PSO MAPPING - AU365 - Automotive Pollution and Testing

AU365/PSO	PSO1	PSO2	PSO3	PSO4
	3	2	3	3

AU361

Course Code	Course Name	L-T-P:C	Year of Introduction
AU361	Alternative Fuels and Energy Sources	3-0-0:3	2016

No.	Course Outcome - AU361 - Alternative Fuels and Energy Sources	Target
CO1	Identify the importance of conventional and renewable energy sources.	60%
CO2	Identify different energy sources and analyze them for particular application.	60%
CO3	Analyze various alternative liquid fuels for automobiles.	60%
CO4	Analyze importance and performance of alternate gaseous fuels.	60%
CO5	Analyze indirect alternative power sources like solar for vehicle application.	60%
CO6	Illustrate the working of hybrid and electric vehicles for mobility solutions.	60%

COURSE END SURVEY - AU361 - Alternative Fuels and Energy Sources

Sl.No	Questions & Options
CO1	To what extent you are able to identify the importance of conventional and renewable energy sources.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	To what extent you are able to identify different energy sources and analyze them for particular application
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	To what extent you are able to identify and apply alternative liquid fuels for automobiles
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extent you are able to analyze the importance and performance of gaseous fuels
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extent you are able to analyze indirect alternative power sources for vehicle application.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO6	To what extent you are able to illustrate the working of hybrid and electric vehicles for mobility solutions
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - AU361 - Alternative Fuels and Energy Sources

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1				3								
CO2			2									
CO3						2						

CO4									3			
CO5		3										
CO6	3											

CO->PSO MAPPING - AU361 - Alternative Fuels and Energy Sources

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1			
CO2		1		
CO3			1	
CO4				1
CO5	1			
CO6		1		

COURSE->PO MAPPING - AU361 - Alternative Fuels and Energy Sources

AU361/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2	3		2			3			

COURSE->PSO MAPPING - AU361 - Alternative Fuels and Energy Sources

AU361/PSO	PSO1	PSO2	PSO3	PSO4
	1	1	1	1

ME305

Course Code	Course Name	L-T-P:C	Year of Introduction
ME305	Computer Programming & Numerical Methods	3-0-0:3	2016

No.	Course Outcome - ME305 - Computer Programming & Numerical Methods	Target
CO1	Identify the basic programming concepts	65%
CO2	Demonstrate the various control statements, arrays and functions used in computer programming	60%
CO3	Apply the concept of pointers in programming	60%
CO4	Discuss the basic concepts of object oriented programming	60%
CO5	Demonstrate the common numerical methods	60%
CO6	Apply numerical methods to obtain approximate solutions to mathematical problems	60%

COURSE END SURVEY - ME305 - Computer Programming & Numerical Methods

Sl.No	Questions & Options
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CO1	Whether the student is able to identify the basic programming concepts?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	Whether the student is able to demonstrate the various control statements used in computer programming?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	Whether the student is able to apply the concept of pointers in programming?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	Whether the student is able to understand the basic concepts of object oriented programming?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	Whether the student is able to understand the common numerical methods?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO6	Whether the student is able to apply numerical methods to obtain approximate solutions to mathematical problems
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - ME305 - Computer Programming & Numerical Methods

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	3	2	3							3
CO2	3	2	2	1	2							2
CO3	3	2	2	1	2							1
CO4	2	1	1	1								3
CO5	3	2	1	1	1							2
CO6	3	1	2									1

CO->PSO MAPPING - ME305 - Computer Programming & Numerical Methods

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1	3		1
CO2	2	2		1
CO3	1	2		
CO4	2	1		1
CO5	3	2		1
CO6	1	2		1

COURSE->PO MAPPING - ME305 - Computer Programming & Numerical Methods

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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ME305/PO	3	2	3	2	3							3
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COURSE->PSO MAPPING - ME305 - Computer Programming & Numerical Methods

ME305/PSO	PSO1	PSO2	PSO3	PSO4
	3	3		1

AU301

Course Code	Course Name	L-T-P:C	Year of Introduction
AU301	Auto Transmission	3-1-0:4	2016

No.	Course Outcome - AU301 - Auto Transmission	Target
CO1	Analyse the clutch system and identify the type of clutch	65%
CO2	Understand the working of gearbox and its requirement	65%
CO3	Identify the hydrodynamic transmission system used in an automobile	65%
CO4	Analyse the epicyclic gear box system	65%
CO5	Differentiate the gearbox for manual and automatic gearbox	65%
CO6	Understand the basic working of an automatic transmission system	65%

COURSE END SURVEY - AU301 - Auto Transmission

Sl.No	Questions & Options
CO1	Are you able to identify the clutch type to be used for different requirements?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO2	Can you conceive the requirement of a gearbox in a vehicle?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO3	Can you identify and conceive the transmission system for off road vehicles?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO4	I can identify an epicyclic gearbox and its application
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO5	I am able to conceive the gearbox for modern high level automobiles
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO6	Can I differentiate between manual and automatic transmission systems?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>

CO->PO MAPPING - AU301 - Auto Transmission

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	1		1	1				1		1
CO2	2	2	2	1	1		1	1	1	1		1
CO3	1	1	1			1		1		1	1	1
CO4	2	3	1		1			1		1		1
CO5	2	1	1			1		1				1
CO6	1	1	2	1	1						1	1

CO->PSO MAPPING - AU301 - Auto Transmission

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	2		2
CO2	3	2		2
CO3	3	2		1
CO4	3	2		2
CO5	3	1		1
CO6	2	1		1

COURSE->PO MAPPING - AU301 - Auto Transmission

AU301/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	3	2	1	1	1	1	1	1	1	1	1

COURSE->PSO MAPPING - AU301 - Auto Transmission

AU301/PSO	PSO1	PSO2	PSO3	PSO4
	3	2		2

au333

Course Code	Course Name	L-T-P:C	Year of Introduction
au333	Computer Programming LAB	0-0-3:1	2016

No.	Course Outcome - au333 - Computer Programming LAB	Target
CO1	Develop simple programs in C language and show confidence with the interface	90%
CO2	Develop C program using simple statements, expressions and looping	90%
CO3	Develop Programs in C covering control structures functions, arrays, structures, pointers and files	90%

CO4	Gain experience in programming with C language	90%
CO5	Develop custom programs based on requirements, but with least complexity	90%

COURSE END SURVEY - au333 - Computer Programming LAB

Sl.No	Questions & Options
CO1	To what extend you are able to develop simple C programs
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO2	To what extend the student is able to develop C program using simple statements, expressions and looping
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO3	To what extend the student is able to develop Programs in C covering control structures functions, arrays, structures, pointers and files
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO4	The students experience in programming with C language
	Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>
CO5	How confident are you to develop a custom program in C with least complexity
	Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>

CO->PO MAPPING - au333 - Computer Programming LAB

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2		3							2
CO2	3	2	1		3							3
CO3	3	3	3	1	2							2
CO4	3	2	2	1	3							2
CO5	3	2	1	1	3							3

CO->PSO MAPPING - au333 - Computer Programming LAB

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	3		1
CO2	1	2		1
CO3	3	1		2
CO4	3	1		1
CO5	3	2		1

COURSE->PO MAPPING - au333 - Computer Programming LAB

au333/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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	3	3	3	1	3							3
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COURSE->PSO MAPPING - au333 - Computer Programming LAB

au333/PSO	PSO1	PSO2	PSO3	PSO4
	3	3		2

au303

Course Code	Course Name	L-T-P:C	Year of Introduction
au303	Fuels and Combustion	3-0-0:3	2016

No.	Course Outcome - au303 - Fuels and Combustion	Target
CO1	To get a detailed understanding about the conventional and alternative fuels	65%
CO2	To acquire understanding about the stages of combustion in SI engines with the aid of pressure-crack angle diagrams. Also to gain knowledge about the possibilities and related concepts of abnormal combustion	65%
CO3	To acquire understanding about the stages of combustion in CI engines with the aid of pressure-crack angle diagrams. Also to gain knowledge about the possibilities and related concepts of abnormal combustion	65%
CO4	To get a detailed understanding about selective vegetable oils and their important properties to be used as engine fuels	62%
CO5	To assess the potential/possibilities for the utilization of alcohols as fuels in SI and CI engines	65%
CO6	To gain knowledge about the potential of selective gaseous fuels and their performance in SI and CI engines	61%

COURSE END SURVEY - au303 - Fuels and Combustion

Sl.No	Questions & Options
CO1	To what extend you have gained knowledge about conventional and alternative fuels? Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	Did you understand the various stages of combustion in SI engines and the concepts related to abnormal combustion? Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	Is it possible for you to explain the stages of combustion in CI engines using pressure-crank angle diagram and the concept of knocking?? Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	CO5
CO6	

CO->PO MAPPING - au303 - Fuels and Combustion

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1			3		1		1		2	
CO2	3	3	1	3	1		2	3		1	2	3
CO3		2		3		3		2		3		
CO4	3	2				1		2		3	3	1
CO5	3		3	3			2		1			2
CO6	1	2	2	3	2	3	2	2		3	2	

CO->PSO MAPPING - au303 - Fuels and Combustion

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	1	2	3
CO2	3	2	3	1
CO3	2	3	2	
CO4	3	2		3
CO5	1		3	1
CO6	3	2		1

COURSE->PO MAPPING - au303 - Fuels and Combustion

au303/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3	2	3	1	3	3	3

COURSE->PSO MAPPING - au303 - Fuels and Combustion

au303/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	3

AU305

Course Code	Course Name	L-T-P:C	Year of Introduction
AU305	Vehicle Maintenance	3-0-0:3	2016

No.	Course Outcome - AU305 - Vehicle Maintenance	Target
CO1	To impart knowledge on records and schedules of maintenance	60%
CO2	To impart knowledge on maintenance and servicing of engine and OBD	60%
CO3	To familiarize the maintenance procedure for various components of fuel supply system	60%

CO4	To impart knowledge on maintenance of cooling and air conditioning system	60%
CO5	To impart knowledge on maintenance and servicing of chassis components	60%
CO6	To impart knowledge on Maintenance of auxiliaries	60%

COURSE END SURVEY - AU305 - Vehicle Maintenance

Sl.No	Questions & Options
CO1	How far you have been able to learn the different types of maintenance
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extend you understand the maintenance and servicing of automobile engine and OBD
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	How far this course has helped you to impart knowledge on maintenance procedure for various components of fuel supply system
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	how far you have been able to learn maintenance of cooling and air conditioning system
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extend you understand the maintenance and servicing of chassis components
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	How far this course has helped you to impart knowledge on Maintenance of auxiliaries
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - AU305 - Vehicle Maintenance

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1		1	1	1	1		2	1		
CO2	3	2	2	1	1		2	2			1	
CO3	2	3	2	3	2	1			1		1	
CO4	2	2	3	1	1		1			1		
CO5	2	2	3	1	1			1		2	3	
CO6	3	3	3	2	1		2		3		1	

CO->PSO MAPPING - AU305 - Vehicle Maintenance

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	1	3	1	
CO3	3		3	1

CO4	2	2		
CO5	2	2		2
CO6	1	3		

COURSE->PO MAPPING - AU305 - Vehicle Maintenance

AU305/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	2	1	2	2	3	2	3	

COURSE->PSO MAPPING - AU305 - Vehicle Maintenance

AU305/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	2

AU363

Course Code	Course Name	L-T-P:C	Year of Introduction
AU363	Plastics & Composites in Automobile	3-0-0:3	2016

No.	Course Outcome - AU363 - Plastics & Composites in Automobile	Target
CO1	Determine the characteristics and properties of plastics and analyze the methods involved in the manufacturing of FRP and GRP composites	60%
CO2	Describe the processing of plastics and identify the applications of plastics in automobile interior	60%
CO3	Categorize the composite and examine the properties of polymers and elastomers	60%
CO4	Summarize the various polymer matrix composites and identify the tyre manufacturing methods	60%
CO5	Illustrate the various fluid seals and analyze the behavior of different couplings	60%

COURSE END SURVEY - AU363 - Plastics & Composites in Automobile

Sl.No	Questions & Options
CO1	Can you understand the characteristics & properties of plastics as well as are you able to analyze the methods involved in the manufacturing of FRP and GRP composites? Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	Are you able to understand the processing of plastics? and Are you able to identify the applications of plastics in automobile interior? Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	Are you able to categorize the composite and examine the properties of polymers and elastomers? Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO4	Are you able to identify the tyre manufacturing methods?

	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	Can you understand the various fluid seals? and are able to analyze the behavior of different couplings?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - AU363 - Plastics & Composites in Automobile

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3			3					1			2
CO2		1		2			1				2	
CO3		2			3			1		2		1
CO4	3		1		3			1			2	
CO5		2				1			1			2

CO->PSO MAPPING - AU363 - Plastics & Composites in Automobile

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3		1	2
CO2		3		1
CO3	1		1	3
CO4		2		1
CO5		3		3

COURSE->PO MAPPING - AU363 - Plastics & Composites in Automobile

AU363/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	1	3	3	1	1	1	1	2	2	2

COURSE->PSO MAPPING - AU363 - Plastics & Composites in Automobile

AU363/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	1	3

AU402

Course Code	Course Name	L-T-P:C	Year of Introduction
AU402	Two and Three Wheelers	3-0-0:3	2016

No.	Course Outcome - AU402 - Two and Three Wheelers	Target
CO1	Apply the knowledge of IC engines to two and three wheelers	60%
CO2	Understand the fuel and ignition system used in two and three wheelers	60%

CO3	Analyse the transmission system in two and three wheelers	60%
CO4	Apply the knowledge of chassis and subsystems to two and three wheelers	60%
CO5	Understand the braking system and wheels for two and three wheelers	60%
CO6	Evaluate different types of two and three wheelers for specific applications	60%

COURSE END SURVEY - AU402 - Two and Three Wheelers

Sl.No	Questions & Options
CO1	To what extent you were able to apply the knowledge of IC Engines for two and three wheelers
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO2	How you rate your understanding of the fuel and ignition system used in two and three wheelers
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	Are you able to analyse different components of transmission system in two and three wheelers
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO4	To what extent you are able to apply the knowledge of chassis and subsystems to two and three wheelers
	Answer Choice- <i>Most acceptable/Moderately Acceptable Acceptable/Less acceptable/Not acceptable</i>
CO5	How do you rate your understanding of the braking system and wheels for two and three wheelers
	Answer Choice- <i>5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5</i>
CO6	How this course has contributed to your knowledge addition as Automobile Engineer
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>

CO->PO MAPPING - AU402 - Two and Three Wheelers

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	1						1		1
CO2	3	2	1	1						1		1
CO3	3	2	1	1						1		1
CO4	3	2	1	1						1		1
CO5	3	2	1	1						1		1
CO6	3	3	2	3					2	1		1

CO->PSO MAPPING - AU402 - Two and Three Wheelers

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	1		2
CO2	3	1		2

CO3	3	1		2
CO4	3	1		2
CO5	3	1		2
CO6	1	3		3

COURSE->PO MAPPING - AU402 - Two and Three Wheelers

AU402/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2	3					2	1		1

COURSE->PSO MAPPING - AU402 - Two and Three Wheelers

AU402/PSO	PSO1	PSO2	PSO3	PSO4
	3	3		3

AU309

Course Code	Course Name	L-T-P:C	Year of Introduction
AU309	Heating, Ventilating & Air Conditioning (HVAC)	3-0-0:3	2016

No.	Course Outcome - AU309 - Heating, Ventilating & Air Conditioning (HVAC)	Target
CO1	Understand the working of air and water heating system	60%
CO2	Examine the working of ventilation system	60%
CO3	Understand the requirement and working of air conditioning system	60%
CO4	Demonstrate the use of a psychrometric system	60%
CO5	Understand the working of vapour compression system	60%
CO6	Understand role of human comfort in the design of AC?	60%

COURSE END SURVEY - AU309 - Heating, Ventilating & Air Conditioning (HVAC)

Sl.No	Questions & Options
CO1	Can you understand the working of air and water heating systems?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO2	To what extend can you identify a ventilation system used for different applications?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO3	Are you able to identify the working of an air conditioning system?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>

CO4	Can you clearly understand the psychrometric chart and the effects of psychrometric properties
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO5	Can you understand vapour compression system ?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO6	Can you understand role of human comfort in the design of AC?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>

CO->PO MAPPING - AU309 - Heating, Ventilating & Air Conditioning (HVAC)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	1	2	3	3	2	3	3	2	2
CO2	1		3	1		2	2	3	3	3	2	3
CO3	2	1	2	1	2	1	2	3	2	2	2	3
CO4	1	2	3	1	3	3	2	3	2	3	2	3
CO5	2	3	2	2	1	3	2	3	2	3	3	2
CO6	3	2	3	2	3	3	1	2	2	3	2	3

CO->PSO MAPPING - AU309 - Heating, Ventilating & Air Conditioning (HVAC)

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	3	3	3
CO2	2	3	2	3
CO3	3	2	3	2
CO4	3	2	1	3
CO5	3	3	3	2
CO6	1	3	2	3

COURSE->PO MAPPING - AU309 - Heating, Ventilating & Air Conditioning (HVAC)

AU309/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	2	3	3	3	3	3	3	3	3

COURSE->PSO MAPPING - AU309 - Heating, Ventilating & Air Conditioning (HVAC)

AU309/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	3

MUT301

Course Code	Course Name	L-T-P:C	Year of Introduction
MUT301	AUTO ELECTRICAL AND ELECTRONICS	3-1-0:4	2019

No.	Course Outcome - MUT301 - AUTO ELECTRICAL AND ELECTRONICS	Target
CO1	Distinguish the different types of batteries, its working principle, construction and applications	55%
CO2	Categorize the charging systems and starting systems in vehicles	55%
CO3	Identify the ignition system and lighting systems used in vehicles	55%
CO4	Understand the different types of sensors used in vehicles	55%
CO5	Illustrate and identify the engine management system and vehicle management systems	55%

COURSE END SURVEY - MUT301 - AUTO ELECTRICAL AND ELECTRONICS

Sl.No	Questions & Options
CO1	I am able to Explain: (i) The construction and working of lead acid battery? (ii) What type of battery is used in electric vehicles? (iii) What are the various battery tests?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO2	I am able to Explain: (i) The the working of Starter motor. (ii) The construction and working of alternator. (iii) What are the components that make up the charging system in an automobile and state the purpose of each?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO3	I am able to Explain: (i) What is the importance of ignition timing in an SI engine? (ii) Explain the working of lighting system in automobiles (iii) What are the various other lights used in automobiles other than head light? (iv) What are the various gauges used in automobiles?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO4	I am able to Explain: (i) The working of Hall effect sensor? (ii) How the engine crankshaft position is determined using the Crankshaft PositionSensor? (iii) What are the different types of actuators used in automobiles and state the application?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO5	I am able to Explain: (i) What is the difference between GDI and MPFI? (ii) What are the various sensors used in fuel injection system? (iii) What are the important vehicle management systems used in automobiles?
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5

CO->PO MAPPING - MUT301 - AUTO ELECTRICAL AND ELECTRONICS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												

CO4												
CO5												

CO->PSO MAPPING - MUT301 - AUTO ELECTRICAL AND ELECTRONICS

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - MUT301 - AUTO ELECTRICAL AND ELECTRONICS

MUT301/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - MUT301 - AUTO ELECTRICAL AND ELECTRONICS

MUT301/PSO	PSO1	PSO2	PSO3	PSO4

AUT303

Course Code	Course Name	L-T-P:C	Year of Introduction
AUT303	MANUFACTURING PROCESS	3-1-0:4	2019

No.	Course Outcome - AUT303 - MANUFACTURING PROCESS	Target
CO1	Understand the basic concept of foundry and casting	70%
CO2	Explain the different types of Metal joining process	70%
CO3	Discuss the different metal forming process	70%
CO4	Explain the non-conventional machining process	70%
CO5	Explain the advanced manufacturing technology	70%

COURSE END SURVEY - AUT303 - MANUFACTURING PROCESS

Sl.No	Questions & Options
CO1	Can you understand the basic concept of foundry and casting?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO2	Are you able to explain the different types of Metal joining process?

	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO3	Are you able to understand the different metal forming process?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO4	Are you able to explain the non-conventional machining process?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO5	Do you understand the advanced manufacturing technology used for manufacturing?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>

CO->PO MAPPING - AUT303 - MANUFACTURING PROCESS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1			3					2				2
CO2	2					2				3		
CO3	1				1				2			1
CO4	2			1			3				1	
CO5		2						3				

CO->PSO MAPPING - AUT303 - MANUFACTURING PROCESS

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1			2
CO2	1		2	
CO3		2		2
CO4		3		1
CO5	2		3	

COURSE->PO MAPPING - AUT303 - MANUFACTURING PROCESS

AUT303/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	2	3	1	1	2	3	3	2	3	1	2

COURSE->PSO MAPPING - AUT303 - MANUFACTURING PROCESS

AUT303/PSO	PSO1	PSO2	PSO3	PSO4
	2	3	3	2

MUT305

Course Code	Course Name	L-T-P:C	Year of Introduction
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MUT305	Vehicle Dynamics	3-1-0:4	2019
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No.	Course Outcome - MUT305 - Vehicle Dynamics	Target
CO1	To understand the vehicle system dynamics	50%
CO2	Evaluate the driving/ braking resistances and their influences on vehicle dynamics	50%
CO3	Identify and analyse the dynamics systems such as suspension systems, body vibrations, steering mechanisms	50%
CO4	To analyse and solve engineering problems related to vehicle dynamics	50%
CO5	Comparing and identifying the different types of control systems in automobiles	50%

COURSE END SURVEY - MUT305 - Vehicle Dynamics

Sl.No	Questions & Options
CO1	Are you able to classify / understand the vehicle system dynamics?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO2	Can you evaluate the driving/ braking resistances and their influences on vehicle dynamics?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO3	Can you identify and analyse the dynamics systems such as suspension systems, body vibrations, steering mechanisms?
	Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>
CO4	Are you able to analyse and solve engineering problems related to vehicle dynamics?
	Answer Choice- <i>5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5</i>
CO5	Can you able to compare classify / and identify the different types of control systems in automobiles?
	Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>

CO->PO MAPPING - MUT305 - Vehicle Dynamics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												
CO5												

CO->PSO MAPPING - MUT305 - Vehicle Dynamics

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				

CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - MUT305 - Vehicle Dynamics

MUT305/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - MUT305 - Vehicle Dynamics

MUT305/PSO	PSO1	PSO2	PSO3	PSO4

MUT307

Course Code	Course Name	L-T-P:C	Year of Introduction
MUT307	Auto Transmission	3-1-0:4	2019

No.	Course Outcome - MUT307 - Auto Transmission	Target
CO1	Understand and analyse the types of clutch and gearbox used in the automobiles	60%
CO2	Understand the basics of epicyclic gearbox and the propeller shaft	65%
CO3	Illustrate the working of epicyclic and hydrodynamic transmission system	60%
CO4	Understand the working of a hydrostatic transmission and Continuously Varying Transmission	60%
CO5	Understand the components and working of automatic transmissions used in the present-day vehicles	60%

COURSE END SURVEY - MUT307 - Auto Transmission

Sl.No	Questions & Options
CO1	Ability to explain the types of clutches and its working
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO2	The knowledge in driveline structure
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	Degree of knowledge in epicyclic and hydrodynamic transmission
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO4	knowledge about importance of CVT and its advantages
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO5	Describing the basic structure of transmissions
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>

CO->PO MAPPING - MUT307 - Auto Transmission

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3		3	2	3		1		2			
CO2	2	3		2	3			2			1	
CO3	3		3	2		2	2		3	1		
CO4	3	2		2		2		2		2		1
CO5	3		2		3	1	2		3		1	

CO->PSO MAPPING - MUT307 - Auto Transmission

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	1	2	3
CO2		2	3	2
CO3	1	3	2	3
CO4		2	3	
CO5			3	3

COURSE->PO MAPPING - MUT307 - Auto Transmission

MUT307/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	2	3	2	2	2	3	2	1	1

COURSE->PSO MAPPING - MUT307 - Auto Transmission

MUT307/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	3

HUT300

Course Code	Course Name	L-T-P:C	Year of Introduction
HUT300	INDUSTRIAL ECONOMICS & FOREIGN TRADE	3-0-0:3	2019

No.	Course Outcome - HUT300 - INDUSTRIAL ECONOMICS & FOREIGN TRADE	Target
CO1	Explain the problem of scarcity of resources and consumer behaviour, and to evaluate the impact of government policies on the general economic welfare. (Cognitive knowledge level: Understand)	65%
CO2	Take appropriate decisions regarding volume of output and to evaluate the social cost of production. (Cognitive knowledge level: Apply)	65%

CO3	Determine the functional requirement of a firm under various competitive conditions. (Cognitive knowledge level: Analyse)	65%
CO4	Examine the overall performance of the economy, and the regulation of economic fluctuations and its impact on various sections in the society. (Cognitive knowledge level: Analyse)	65%
CO5	Determine the impact of changes in global economic policies on the business opportunities of a firm. (Cognitive knowledge level: Analyse)	65%

COURSE END SURVEY - HUT300 - INDUSTRIAL ECONOMICS & FOREIGN TRADE

Sl.No	Questions & Options
CO1	CO2
CO3	CO4
CO5	

CO->PO MAPPING - HUT300 - INDUSTRIAL ECONOMICS & FOREIGN TRADE

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2										3	
CO2	2	2			2	2	3				3	
CO3	2	2	1								3	
CO4	2	2	1			1					3	
CO5	2	2	1								3	

CO->PSO MAPPING - HUT300 - INDUSTRIAL ECONOMICS & FOREIGN TRADE

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - HUT300 - INDUSTRIAL ECONOMICS & FOREIGN TRADE

HUT300/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	2	1		2	2	3				3	

COURSE->PSO MAPPING - HUT300 - INDUSTRIAL ECONOMICS & FOREIGN TRADE

HUT300/PSO	PSO1	PSO2	PSO3	PSO4

MCN301

Course Code	Course Name	L-T-P:C	Year of Introduction
MCN301	Disaster Management	2-0-0:2	2019

No.	Course Outcome - MCN301 - Disaster Management	Target
CO1	To understand the various terminologies in use in disaster management parlance and organize each of these terms in relation to the disaster management cycle	55%
CO2	To understand different hazard types and vulnerability types and do vulnerability assessment	55%
CO3	To understand the components and describe the process of risk assessment, and apply appropriate methodologies to assess risk.	55%
CO4	To apply the core elements and phases of Disaster Risk Management and develop possible measures to reduce disaster risks across sectors and communities.	55%
CO5	To understand the factors that determine the nature of disaster response and discuss the various disaster response actions.	55%
CO6	To understand the various legislations and best practices for disaster management and risk reduction at the national and international levels.	55%

COURSE END SURVEY - MCN301 - Disaster Management

Sl.No	Questions & Options
CO1	Can you understand the various terminologies in use in disaster management parlance and organize each of these terms in relation to the disaster management cycle? Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	Can you understand different hazard types and vulnerability types and do vulnerability assessment? Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO3	Can you understand the components and describe the process of risk assessment, and apply appropriate methodologies to assess risk? Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO4	Are you able to apply the core elements and phases of Disaster Risk Management and develop possible measures to reduce disaster risks across sectors and communities? Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO5	Can you understand the factors that determine the nature of disaster response and discuss the various disaster response actions? Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO6	

CO->PO MAPPING - MCN301 - Disaster Management

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		3			2		1					2

CO2		2				3			1			
CO3				1			3			1		1
CO4	1		3					3			2	
CO5	1					3				2		
CO6			2							1		

CO->PSO MAPPING - MCN301 - Disaster Management

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2			2
CO2	1		2	
CO3		1		2
CO4	1		2	3
CO5	3	1		3
CO6			1	

COURSE->PO MAPPING - MCN301 - Disaster Management

MCN301/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	1	3	3	1	2	3	3	3	1	2	2	2

COURSE->PSO MAPPING - MCN301 - Disaster Management

MCN301/PSO	PSO1	PSO2	PSO3	PSO4
	3	1	2	3

MUL331

Course Code	Course Name	L-T-P:C	Year of Introduction
MUL331	Production Engineering Lab	0-0-3:2	2019

No.	Course Outcome - MUL331 - Production Engineering Lab	Target
CO1	Identify the machining operation involved for a component	90%
CO2	Illustrate the manufacturing sequence for developing a component	90%
CO3	Apply and optimise different criteria for machining of a component	90%
CO4	Develop and analyse a CNC programme using simulation software	90%
CO5	Enhance research capabilities by carrying out different research oriented experiments	90%

COURSE END SURVEY - MUL331 - Production Engineering Lab

Sl.No	Questions & Options
CO1	Are you able to identify the machining operation involved for a component?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	Are you able to illustrate the manufacturing sequence for developing a component?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	Are you able to apply and optimize different criteria for machining of a component?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO4	Can you develop and analyse a CNC programme using simulation software?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO5	Are you able to enhance research capabilities by carrying out different research oriented experiments?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>

CO->PO MAPPING - MUL331 - Production Engineering Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		1		1			2					
CO2	3									2		1
CO3			2		2			3				
CO4						3			1		2	
CO5	2				3			1				

CO->PSO MAPPING - MUL331 - Production Engineering Lab

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2			2
CO2	2		3	
CO3	2	3		
CO4	1			2
CO5	3		1	

COURSE->PO MAPPING - MUL331 - Production Engineering Lab

MUL331/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	1	2	1	3	3	2	3	1	2	2	1

COURSE->PSO MAPPING - MUL331 - Production Engineering Lab

MUL331/PSO	PSO1	PSO2	PSO3	PSO4

	3	3	3	2
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MEL333

Course Code	Course Name	L-T-P:C	Year of Introduction
MEL333	THERMAL ENGINEERING LAB-I	0-0-3:2	2019

No.	Course Outcome - MEL333 - THERMAL ENGINEERING LAB-I	Target
CO1	Measure thermo-physical properties of solid, liquid and gaseous fuels	60%
CO2	Identify various systems and subsystems of Diesel and petrol engines	60%
CO3	Analyse the performance characteristics of internal combustion engines	60%
CO4	Investigate the emission characteristics of exhaust gases from IC Engines	60%
CO5	Interpret the performance characteristics of air compressors / blowers	60%

COURSE END SURVEY - MEL333 - THERMAL ENGINEERING LAB-I

Sl.No	Questions & Options
CO1	Can you measure thermo-physical properties of solid, liquid and gaseous fuels?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	Are you able to identify various systems and subsystems of Diesel and petrol engines?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	Will you be able to analyse the performance characteristics of internal combustion engines?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	Do you have the knowledge to investigate the emission characteristics of exhaust gases from IC Engines?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	Is it possible for you to interpret the performance characteristics of air compressors / blowers
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - MEL333 - THERMAL ENGINEERING LAB-I

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												

CO5												
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CO->PSO MAPPING - MEL333 - THERMAL ENGINEERING LAB-I

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - MEL333 - THERMAL ENGINEERING LAB-I

MEL333/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - MEL333 - THERMAL ENGINEERING LAB-I

MEL333/PSO	PSO1	PSO2	PSO3	PSO4

MUT393

Course Code	Course Name	L-T-P:C	Year of Introduction
MUT393	ADVANCED THEORY OF VIBRATIONS	3-1-0:4	2019

No.	Course Outcome - MUT393 - ADVANCED THEORY OF VIBRATIONS	Target
CO1	Identify and evaluate systems with single degrees of freedom.	60%
CO2	Elaborate on systems with two degrees of freedom	60%
CO3	Analyse and solve vibration with multiple degrees of freedom	60%
CO4	Identify the methods for the measurement of vibration and apply the methods to solve it	60%
CO5	Enumerate on transient and non linear vibrations in a system.	60%

COURSE END SURVEY - MUT393 - ADVANCED THEORY OF VIBRATIONS

Sl.No	Questions & Options
CO1	Are you able to identify and evaluate systems with single degrees of freedom?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	How much is your capability to elaborate on systems with two degrees of freedom?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO3	Can you analyse and solve vibration with multiple degrees of freedom?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	How much is your understanding about the methods for the measurement of vibration and apply the methods to solve it?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	Did you gain knowledge about transient and non linear vibrations in a system?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - MUT393 - ADVANCED THEORY OF VIBRATIONS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	1	1	2	1	2	2	2	1	1	2
CO2	1	1	1	2	1	2	2	2	1	1	2	3
CO3	1	1	1	2	1	2	2	1	2	2	3	1
CO4	1	3	1	1	3	1	2	2	1	1	1	2
CO5	2	1	1	2	1	1	1	1	2	2	2	2

CO->PSO MAPPING - MUT393 - ADVANCED THEORY OF VIBRATIONS

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	2	1	1
CO2	1	1	2	1
CO3	2	3	2	1
CO4	1	2	1	1
CO5	1	2	3	1

COURSE->PO MAPPING - MUT393 - ADVANCED THEORY OF VIBRATIONS

MUT393/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	3	1	2	3	2	2	2	2	2	3	3

COURSE->PSO MAPPING - MUT393 - ADVANCED THEORY OF VIBRATIONS

MUT393/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	1

SEMESTER-6**AU010601**

Course Code	Course Name	L-T-P:C	Year of Introduction
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AU010601	Mechanics of Machines	4-0-0:4	2010
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COURSE END SURVEY - AU010601 - Mechanics of Machines**CO->PO MAPPING - AU010601 - Mechanics of Machines**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU010601 - Mechanics of Machines

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - AU010601 - Mechanics of Machines

AU010601/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010601 - Mechanics of Machines

AU010601/PSO	PSO1	PSO2	PSO3	PSO4

AU010602

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010602	Heat and Mass Transfer	4-0-0:4	2010

COURSE END SURVEY - AU010602 - Heat and Mass Transfer**CO->PO MAPPING - AU010602 - Heat and Mass Transfer**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU010602 - Heat and Mass Transfer

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - AU010602 - Heat and Mass Transfer

AU010602/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010602 - Heat and Mass Transfer

AU010602/PSO	PSO1	PSO2	PSO3	PSO4

AU010603

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010603	Auto Transmission	4-0-0:4	2010

COURSE END SURVEY - AU010603 - Auto Transmission**CO->PO MAPPING - AU010603 - Auto Transmission**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU010603 - Auto Transmission

CO/PSO	PSO1	PSO2	PSO3	PSO4

COURSE->PO MAPPING - AU010603 - Auto Transmission

AU010603/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010603 - Auto Transmission

AU010603/PSO	PSO1	PSO2	PSO3	PSO4

AU010604

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010604	Metrology and Machine Tools	4-0-0:4	2010

COURSE END SURVEY - AU010604 - Metrology and Machine Tools**CO->PO MAPPING - AU010604 - Metrology and Machine Tools**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - AU010604 - Metrology and Machine Tools

CO/PSO	PSO1	PSO2	PSO3	PSO4

COURSE->PO MAPPING - AU010604 - Metrology and Machine Tools

AU010604/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010604 - Metrology and Machine Tools

AU010604/PSO	PSO1	PSO2	PSO3	PSO4

AU010606

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010606	Soft Computing	4-0-0:4	2010

COURSE END SURVEY - AU010606 - Soft Computing**CO->PO MAPPING - AU010606 - Soft Computing**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - AU010606 - Soft Computing

CO/PSO	PSO1	PSO2	PSO3	PSO4

COURSE->PO MAPPING - AU010606 - Soft Computing

AU010606/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

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COURSE->PSO MAPPING - AU010606 - Soft Computing

AU010606/PSO	PSO1	PSO2	PSO3	PSO4

AU010607

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010607	Heat Engines Laboratory	0-0-4:0	2010

COURSE END SURVEY - AU010607 - Heat Engines Laboratory**CO->PO MAPPING - AU010607 - Heat Engines Laboratory**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - AU010607 - Heat Engines Laboratory

CO/PSO	PSO1	PSO2	PSO3	PSO4

COURSE->PO MAPPING - AU010607 - Heat Engines Laboratory

AU010607/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010607 - Heat Engines Laboratory

AU010607/PSO	PSO1	PSO2	PSO3	PSO4

AU010605

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010605	Mechatronics & Control Systems	4-0-0:4	2010

COURSE END SURVEY - AU010605 - Mechatronics & Control Systems**CO->PO MAPPING - AU010605 - Mechatronics & Control Systems**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - AU010605 - Mechatronics & Control Systems

CO/PSO	PSO1	PSO2	PSO3	PSO4

COURSE->PO MAPPING - AU010605 - Mechatronics & Control Systems

AU010605/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010605 - Mechatronics & Control Systems

AU010605/PSO	PSO1	PSO2	PSO3	PSO4

AU010606L01

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010606L01	Vehicle Transport Management	4-0-0:4	2010

COURSE END SURVEY - AU010606L01 - Vehicle Transport Management**CO->PO MAPPING - AU010606L01 - Vehicle Transport Management**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU010606L01 - Vehicle Transport Management

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - AU010606L01 - Vehicle Transport Management

AU010606L01/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010606L01 - Vehicle Transport Management

AU010606L01/PSO	PSO1	PSO2	PSO3	PSO4

AU010606L05

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010606L05	Alternate Fuels and Energy Systems	4-0-0:4	2010

COURSE END SURVEY - AU010606L05 - Alternate Fuels and Energy Systems**CO->PO MAPPING - AU010606L05 - Alternate Fuels and Energy Systems**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU010606L05 - Alternate Fuels and Energy Systems

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - AU010606L05 - Alternate Fuels and Energy Systems

AU010606L05/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010606L05 - Alternate Fuels and Energy Systems

AU010606L05/PSO	PSO1	PSO2	PSO3	PSO4

AU010608

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010608	Machine Tool Lab	0-0-4:0	2010

COURSE END SURVEY - AU010608 - Machine Tool Lab**CO->PO MAPPING - AU010608 - Machine Tool Lab**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU010608 - Machine Tool Lab

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - AU010608 - Machine Tool Lab

AU010608/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010608 - Machine Tool Lab

AU010608/PSO	PSO1	PSO2	PSO3	PSO4

ME302

Course Code	Course Name	L-T-P:C	Year of Introduction
ME302	Heat and Mass Transfer	3-1-0:4	2016

No.	Course Outcome - ME302 - Heat and Mass Transfer	Target
CO1	Solve practical problems related to conduction of heat in solids and thermal insulation thickness for materials.	65%
CO2	Analyze importance of boundary layers and demonstrate the effects of laminar and turbulent flows.	65%
CO3	Design fins to achieve optimum heat transfer from surfaces.	65%
CO4	Design heat exchangers for necessary flow rates and rate of heat transfer.	65%
CO5	Illustrate heat transfer by radiation and solve practical problems in radiative heat transfer.	65%
CO6	Identify and explain mechanisms of mass transfer and compare it with heat transfer.	65%

COURSE END SURVEY - ME302 - Heat and Mass Transfer

Sl.No	Questions & Options
CO1	How far you are able to understand and solve problems related to heat conduction ?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO2	How far you are able to analyze importance of boundary layers and demonstrate the effects of laminar and turbulent flows ?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO3	How far you are able to design fins based on the concepts gained from the section ?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>

CO4	How far you are able to design and analyse the heat exchangers based on the concepts learned from the topic ?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO5	How far your basic concepts obtained on radiation heat transfer helped in solving problems related with the same ?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO6	How far you are able to identify and understand the concepts of mass transfer and its analogy with heat transfer ?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>

CO->PO MAPPING - ME302 - Heat and Mass Transfer

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	3	2	1	1				2	
CO2	3	2	3	2	2	2		1		2		
CO3	3	3	3								2	
CO4	3	3	3	2	1	2	2	2	1		1	
CO5	2	3	1		2					1		
CO6	3	2	3		2	1	2					1

CO->PSO MAPPING - ME302 - Heat and Mass Transfer

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1	1	1	1
CO2	1	1	1	1
CO3	1	1	1	1
CO4	1	1	1	1
CO5	1	1	1	1
CO6	1	1	1	1

COURSE->PO MAPPING - ME302 - Heat and Mass Transfer

ME302/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	2	2	2	2	1	2	2	1

COURSE->PSO MAPPING - ME302 - Heat and Mass Transfer

ME302/PSO	PSO1	PSO2	PSO3	PSO4
	1	1	1	1

ME304

Course Code	Course Name	L-T-P:C	Year of Introduction
ME304	Dynamics of Machinery	2-1-0:3	2016

No.	Course Outcome - ME304 - Dynamics of Machinery	Target
CO1	Interpret and analyze different forces acting on different mechanisms when they are stationary or in motion.	60%
CO2	Analyze the forces acting on different types of gears under working conditions.	60%
CO3	Interpret the balancing of rotating and reciprocating masses and examine balancing multi- cylinder engines and balancing of machines.	60%
CO4	Identify gyroscopic action on vehicles, airplanes and ships, so as to conclude about stability of the same while they are taking a turn.	60%
CO5	Interpret and solve the problems related to vibration of machineries in industries after evaluating the causes of vibrations and resonance.	60%

COURSE END SURVEY - ME304 - Dynamics of Machinery

Sl.No	Questions & Options
CO1	How far you have been able to interpret and analyze different forces acting on different mechanisms when they are stationary or in motion?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	How far this course has helped you in analyzing the forces acting on different types of gears under working conditions?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	How far this course has helped you in interpreting the balancing of rotating and reciprocating masses and examine balancing multi- cylinder engines?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	How far you are capable of identifying gyroscopic action on vehicles, airplanes and ships, so as to conclude about stability of the same while they are taking a turn?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	How far this course has helped you in solving the problems related to vibration of machineries in industries after evaluating the causes of vibrations and resonance?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - ME304 - Dynamics of Machinery

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	1	1	1		1			1		2
CO2	1	1		2	3		1			2		1

CO3	2	2	3	3	2		1			2		
CO4	3	2	2		3		1			2		2
CO5	3	2	2	2	2	1				2		

CO->PSO MAPPING - ME304 - Dynamics of Machinery

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1	1		1
CO2	1	1		1
CO3	1	1		1
CO4	1	1		1
CO5	1	1		1

COURSE->PO MAPPING - ME304 - Dynamics of Machinery

ME304/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	1	1			2		2

COURSE->PSO MAPPING - ME304 - Dynamics of Machinery

ME304/PSO	PSO1	PSO2	PSO3	PSO4
	1	1		1

ME314

Course Code	Course Name	L-T-P:C	Year of Introduction
ME314	MACHINE DESIGN-II	3-0-0:3	2016

No.	Course Outcome - ME314 - MACHINE DESIGN-II	Target
CO1	Analyze different theories, design factors and factors which are involved in machine design	65%
CO2	Design shafts and welded joints used in different applications	65%
CO3	Design the clutch and brake system for a mechanical system	65%
CO4	Select the suitable bearing for the specified application	65%
CO5	Design gears for different automobile and mechanical applications	65%
CO6	Design the components of an engine to fulfil its performance	65%

COURSE END SURVEY - ME314 - MACHINE DESIGN-II

Sl.No	Questions & Options
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CO1	Can you identify the factors and theories associated with a specific design process?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO2	Can you find the size of the shaft and the welding conditions for a specified loading parameters
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO3	To what degree you can say that you can design a clutch and brake for an automobile in a scale of 5
	Answer Choice- <i>5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5</i>
CO4	Are you capable of finding a suitable bearing for a specific application?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO5	Can you design a gear for the specific engine and application?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO6	Can you design the engine components based on the power output and other parameters?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>

CO->PO MAPPING - ME314 - MACHINE DESIGN-II

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	2	2	2	2	3	2	1	2	1	2
CO2	3	2	1	2		1	2	1		3	1	2
CO3	3	2	1	2		1	2	1	2	3	1	2
CO4	3	3	3	2	2	1	1	2	1	2	2	
CO5	3	3	2	3	1	1	2	2	1	3	2	1
CO6	3	3	3	3	2	2	1	2	2	2	2	1

CO->PSO MAPPING - ME314 - MACHINE DESIGN-II

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	2		3
CO2	2	2	2	2
CO3	2	2	2	3
CO4	2	2	2	2
CO5	2	3	2	2
CO6	1	3	3	2

COURSE->PO MAPPING - ME314 - MACHINE DESIGN-II

ME314/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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	3	3	3	3	2	2	3	2	2	3	2	2
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COURSE->PSO MAPPING - ME314 - MACHINE DESIGN-II

ME314/PSO	PSO1	PSO2	PSO3	PSO4
	2	3	3	3

AU302

Course Code	Course Name	L-T-P:C	Year of Introduction
AU302	AUTOMOTIVE ELECTRICAL AND ELECTRONICS	3-0-0:3	2016

No.	Course Outcome - AU302 - AUTOMOTIVE ELECTRICAL AND ELECTRONICS	Target
CO1	Explain the reaction happening in an automotive battery and types of battery	60%
CO2	Define basic circuits used in an automobile like starting, charging, etc.	60%
CO3	To familiarise the working of conventional ignition system and to understand the evolution and working of programmed ignition system	60%
CO4	Define the technology of automotive lighting and its circuits	60%
CO5	To familiarise the working of various sensors used in automobile	60%
CO6	Define electronic fuel injection systems and its types	60%

COURSE END SURVEY - AU302 - AUTOMOTIVE ELECTRICAL AND ELECTRONICS

Sl.No	Questions & Options
CO1	To what extent you are able to explain the reaction happening in different automotive batteries?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extent you are able to understand the working of starting and charging system in an automobile?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extent you are able to differentiate the conventional and programmed ignition system in automobile?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	To what extent you are able to identify the different technologies used in automotive lighting?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extent you have familiarized the working of various sensors used in automobile?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	To what extent you are able to describe the different types of fuel injection systems in automobile?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - AU302 - AUTOMOTIVE ELECTRICAL AND ELECTRONICS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1				1				1	
CO2	2	1					1				1	
CO3	2			1			1				1	
CO4	2			1			1				1	
CO5	2	1					1				1	
CO6	2	1	1				1				1	

CO->PSO MAPPING - AU302 - AUTOMOTIVE ELECTRICAL AND ELECTRONICS

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	2		
CO2	2			2
CO3	2			
CO4		3		
CO5		3		
CO6		3		

COURSE->PO MAPPING - AU302 - AUTOMOTIVE ELECTRICAL AND ELECTRONICS

AU302/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	1	1	1			1				1	

COURSE->PSO MAPPING - AU302 - AUTOMOTIVE ELECTRICAL AND ELECTRONICS

AU302/PSO	PSO1	PSO2	PSO3	PSO4
	2	3		2

HS300

Course Code	Course Name	L-T-P:C	Year of Introduction
HS300	Principles of Management	3-0-0:3	2016

No.	Course Outcome - HS300 - Principles of Management	Target
CO1	Manage people, organisation and environment for achieving competitive advantage	66%
CO2	Critically analyse, evaluate and manipulate management theories and practices	66%
CO3	Prepare an organizational plan and execute planning process based on the goals and objectives	66%

CO4	Design organizational structure and establish the relationship among departments.	66%
CO5	Demonstrate staffing and related human resource development functions to manage and appraise employees.	66%
CO6	Lead employees, subordinates and propose control activities in organisations.	66%

COURSE END SURVEY - HS300 - Principles of Management

Sl.No	Questions & Options
CO1	To what extent are you be able to manage people, organisation and environment for achieving competitive advantage?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO2	To what extent can you critically analyse, evaluate and manipulate management theories and practices
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO3	To what extent can you prepare an organizational plan and execute planning process based on the goals and objectives
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO4	To what extent can you design organizational structure and establish the relationship among departments.
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO5	To what extent can you demonstrate staffing and related human resource development functions to manage and appraise employees.
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO6	To what extent can you lead employees, subordinates and propose control activities in organisations.
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>

CO->PO MAPPING - HS300 - Principles of Management

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	2	2	2	2	2	2	2	2	2	2
CO2	1	1	1	2	2	2	3	2	2	2	2	3
CO3	1	1	1	2	2	2	2	2	2	3	1	2
CO4	1	2	3	2	2	2	2	3	2	2	1	3
CO5	1	1	1	2	2	2	2	3	2	2	1	3
CO6	2	1	2	2	2	2	2	2	2	2	2	2

CO->PSO MAPPING - HS300 - Principles of Management

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	2	2

CO2	2	2	2	2
CO3	2	2	2	2
CO4	2	2	2	2
CO5	2	2	2	2
CO6	2	2	2	2

COURSE->PO MAPPING - HS300 - Principles of Management

HS300/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	2	3	2	2	2	3	3	2	3	2	3

COURSE->PSO MAPPING - HS300 - Principles of Management

HS300/PSO	PSO1	PSO2	PSO3	PSO4
	2	2	2	2

AU362

Course Code	Course Name	L-T-P:C	Year of Introduction
AU362	Hybrid and Fuel Cell Vehicles	3-0-0:3	2016

No.	Course Outcome - AU362 - Hybrid and Fuel Cell Vehicles	Target
CO1	Students will understand an overview of hybrid vehicles	62%
CO2	Students will comprehend the electric machines used in electric vehicles and hybrid vehicles	57%
CO3	Students will understand various energy storage systems used in automobiles.	57%
CO4	students will have an understating about electronic engine management of electric vehicles	57%
CO5	students will get an overview about fuel cell vehicles	57%
CO6	Students will understand short term energy storage devices and methods of kinetic energy recovery	57%

COURSE END SURVEY - AU362 - Hybrid and Fuel Cell Vehicles

Sl.No	Questions & Options
CO1	Did you get a broad understading of different classification of HEV
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO2	Compherending the applications of electric machines for EV and HEV(Scale of 5)
	Answer Choice- <i>5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5</i>
CO3	How much did you understand on Energy storage systems in HEV

	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	How much you understood about different subsystem management in HEV
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	On a scale of 5 rate the understanding of Fuel Cell Vehicles
	Answer Choice- <i>5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5</i>
CO6	On a scale of 5, rate the understanding of energy storage systems and kinetic energy recovery techniques in automobiles
	Answer Choice- <i>5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5</i>

CO->PO MAPPING - AU362 - Hybrid and Fuel Cell Vehicles

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1			3									
CO2		1										
CO3	2											
CO4	1											
CO5							3					
CO6				2								

CO->PSO MAPPING - AU362 - Hybrid and Fuel Cell Vehicles

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1			
CO2		1		
CO3			1	
CO4			1	
CO5	1			1
CO6				1

COURSE->PO MAPPING - AU362 - Hybrid and Fuel Cell Vehicles

AU362/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	1	3	2			3					

COURSE->PSO MAPPING - AU362 - Hybrid and Fuel Cell Vehicles

AU362/PSO	PSO1	PSO2	PSO3	PSO4
	1	1	1	1

AU364

Course Code	Course Name	L-T-P:C	Year of Introduction
AU364	Vehicle Performance and Testing	3-0-0:3	2016

No.	Course Outcome - AU364 - Vehicle Performance and Testing	Target
CO1	Describe the modern technologies used for vehicle performance based on various parameters	65%
CO2	Categorize the various testing methods used for testing a vehicle based on the requirement of data	65%
CO3	Analyze various Vehicle Performance Characteristics	65%
CO4	Demonstrate different analysis methods for checking the vehicle performance parameters	65%
CO5	Identify various performance analysis parameters required for research in industries	65%
CO6	Analyze the fitness of commercial as well as passenger vehicles	65%

COURSE END SURVEY - AU364 - Vehicle Performance and Testing

Sl.No	Questions & Options
CO1	Rate the level of understanding about the modern testing technologies on following scale
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	Are you able to categorize various testing methods used for testing a vehicle based on the requirement of data?
	Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>
CO3	You are now able to satisfy an industrial need in performance analysis of a vehicle in all aspect
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO4	Whether the methods you studied is helpful in industry point of view?
	Answer Choice- <i>Most acceptable/Moderately Acceptable Acceptable/Less acceptable/Not acceptable</i>
CO5	Whether you can Identify various performance analysis parameters required for research in industries
	Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>
CO6	You are now able to conduct a fitness test on a commercial vehicle in real life
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>

CO->PO MAPPING - AU364 - Vehicle Performance and Testing

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		1	3	2	3		3	1		1		
CO2	2	3		2	3	1	3		2	2		
CO3	2	3	3		2	3		3	2	3	2	

CO4	3	2	3	3	2	3	3	2	3		3	
CO5	2	2	3	3	2	3	3	1	2	3	3	
CO6	2	2	3	3		2	3	3	3	2	3	1

CO->PSO MAPPING - AU364 - Vehicle Performance and Testing

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1	1	1	1
CO2	1	1		1
CO3	1	3		1
CO4	1	2	1	1
CO5		1	1	1
CO6	1	1		1

COURSE->PO MAPPING - AU364 - Vehicle Performance and Testing

AU364/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3	3	3	3	3	3	1

COURSE->PSO MAPPING - AU364 - Vehicle Performance and Testing

AU364/PSO	PSO1	PSO2	PSO3	PSO4
	1	3	1	1

ME332

Course Code	Course Name	L-T-P:C	Year of Introduction
ME332	Computer Aided Design and Analysis Lab	0-0-3:1	2016

No.	Course Outcome - ME332 - Computer Aided Design and Analysis Lab	Target
CO1	Explain 3-D Computer Aided Design methods and procedures	60%
CO2	Demonstrate and draw assembly drawings and working drawings	60%
CO3	Convert orthographic views to three dimensional views using 3D Software	60%
CO4	Illustrate the basic principles of finite element analysis	50%
CO5	Solve structural, heat and fluid flow problems using finite element analysis software	50%

COURSE END SURVEY - ME332 - Computer Aided Design and Analysis Lab

Sl.No	Questions & Options
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CO1	How far you are able to apply 3D CAD procedures?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	How far you are able to generate assembly drawings
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	How far you are able to convert a 2D drawing to 3D drawing?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	How far you are able to to evaluate the analytics behind FEM?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	How far you are able to solve the physics behind a simple structural , heat transfer or fluid flow problems
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - ME332 - Computer Aided Design and Analysis Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3									
CO2	2	3	1		3							
CO3	3	3	2									
CO4	3	2	3									
CO5	3	2	2	3								

CO->PSO MAPPING - ME332 - Computer Aided Design and Analysis Lab

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	3		3
CO2	3	3		3
CO3	3		3	3
CO4	3	3		3
CO5	3	3		3

COURSE->PO MAPPING - ME332 - Computer Aided Design and Analysis Lab

ME332/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3							

COURSE->PSO MAPPING - ME332 - Computer Aided Design and Analysis Lab

ME332/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	3

AU332

Course Code	Course Name	L-T-P:C	Year of Introduction
AU332	Auto Electrical and Electronics Lab	0-0-3:1	2016

No.	Course Outcome - AU332 - Auto Electrical and Electronics Lab	Target
CO1	To familiarize the constructional details and testing methods of lead acid battery	60%
CO2	To familiarize the constructional details and working of alternator	60%
CO3	To understand the wiring of starting circuit	60%
CO4	To familiarize and design the various ignition circuits in automobiles	60%
CO5	To understand the circuit diagram of automotive lighting system	60%
CO6	To familiarize the working of wiper system and to assemble them in a car	60%

COURSE END SURVEY - AU332 - Auto Electrical and Electronics Lab

Sl.No	Questions & Options
CO1	To what extent are you able to test the condition of a lead acid battery?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extent are you able to identify the various components in an alternator and to troubleshoot problems in them?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	How well can you troubleshoot a problem associated with the starting circuit
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	How do you rate your understanding about the various ignition systems in automobiles?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extent will you be able to wire a lighting system and troubleshoot problems associated with it?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	To what extent do you understand the mechanism of a wiper in a car?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - AU332 - Auto Electrical and Electronics Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1			2							1	
CO2	1			2				3				
CO3	1											

CO4	1			2						3		
CO5	1											
CO6	1			2							1	

CO->PSO MAPPING - AU332 - Auto Electrical and Electronics Lab

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2		2	
CO2	2		2	
CO3	2		2	
CO4	2		2	
CO5	2		2	
CO6	2		2	

COURSE->PO MAPPING - AU332 - Auto Electrical and Electronics Lab

AU332/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	1			2				3		3	1	

COURSE->PSO MAPPING - AU332 - Auto Electrical and Electronics Lab

AU332/PSO	PSO1	PSO2	PSO3	PSO4
	2		2	

AU352

Course Code	Course Name	L-T-P:C	Year of Introduction
AU352	Comprehensive Exam	0-1-1:2	2016

No.	Course Outcome - AU352 - Comprehensive Exam	Target
CO1	Discuss the fundamental aspects of any engineering problem/situation and give answers in dealing with them	72%
CO2	Impart comprehensive knowledge in basic courses relevant to the branch of study	72%
CO3	Comprehend the questions asked and answer them with confidence.	72%
CO4	Take oral as well as competitive examinations with confidence	72%
CO5	Demonstrate competence in the subject by taking viva voce examination	72%
CO6	Face job interviews with confidence	72%

COURSE END SURVEY - AU352 - Comprehensive Exam

Sl.No	Questions & Options
CO1	To what extent you can answer questions on fundamental aspects of any engineering problem/situation?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	How thorough are you in the basics of courses you have taken?
	Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>
CO3	You have full confidence about your competence in the contents of the courses you have taken.
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO4	You can take an oral and/or competitive examination with confidence.
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO5	You can demonstrate competence in the subject by taking viva-voce examinations?
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO6	Rate your level of confidence to face job interviews.
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - AU352 - Comprehensive Exam

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1		2	3	3	3	2	3	3	2
CO2	2	2	2	1	3	2	3	2	2	3	3	2
CO3	2		1	2	1	3	2	3	1	3	3	3
CO4	3	2	2	3	3	2	3	3	2	3	3	2
CO5	3	2	2	1	2	2	3		1	2	3	2
CO6	1	1	2	1	2	3	3	2	1	2	1	3

CO->PSO MAPPING - AU352 - Comprehensive Exam

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1	1	1	1
CO2	1		1	1
CO3	1	1		1
CO4	1	1	1	1
CO5	1	1	1	1
CO6	1	1	1	1

COURSE->PO MAPPING - AU352 - Comprehensive Exam

AU352/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	2	3	3	3	3	3	2	3	3	3

COURSE->PSO MAPPING - AU352 - Comprehensive Exam

AU352/PSO	PSO1	PSO2	PSO3	PSO4
	1	1	1	1

AU352

Course Code	Course Name	L-T-P:C	Year of Introduction
AU352	Comprehensive Exam	0-1-1:2	2016

COURSE END SURVEY - AU352 - Comprehensive Exam**CO->PO MAPPING - AU352 - Comprehensive Exam**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU352 - Comprehensive Exam

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - AU352 - Comprehensive Exam

AU352/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU352 - Comprehensive Exam

AU352/PSO	PSO1	PSO2	PSO3	PSO4

ME316

Course Code	Course Name	L-T-P:C	Year of Introduction
ME316	Principles of Machine Design	3-0-0:3	2016

No.	Course Outcome - ME316 - Principles of Machine Design	Target
CO1	Illustrate the design methodology and its applications	60%
CO2	Analyse the conditions pertaining to fluctuating load and its design implications	60%
CO3	Implement the methodologies for the design of detachable and welded joints	60%
CO4	Design rivetted joints for a structure or a mechanism	55%
CO5	Design the shaft based on the different loads it has to carry	55%
CO6	Design a spring for a specific application	55%

COURSE END SURVEY - ME316 - Principles of Machine Design

Sl.No	Questions & Options
CO1	Are you able to conceive the methodology for designing a system?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO2	Can you design a system for fatigue and creep load?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO3	Can you design a welded joint for the required purpose?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO4	Can you design a rivetted joint for a system?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO5	Can you design a shaft for a specified application?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO6	Can you identify and design a sprig for specific applications?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>

CO->PO MAPPING - ME316 - Principles of Machine Design

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	3	1		1			1		1
CO2	3	2	3	3	1		1			2		1
CO3	3	2	3	3	1		1		1	1		1
CO4	3	2	3	3	1		1		1	1		1
CO5	3	2	3	3	1		1			1		1
CO6	3	2	3	3	1		1			1		1

CO->PSO MAPPING - ME316 - Principles of Machine Design

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	2		2
CO2	3	2		1
CO3	3	1		1
CO4	3	1		1
CO5	2	2		1
CO6	3	2		1

COURSE->PO MAPPING - ME316 - Principles of Machine Design

ME316/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	3	3	1		1		1	2		1

COURSE->PSO MAPPING - ME316 - Principles of Machine Design

ME316/PSO	PSO1	PSO2	PSO3	PSO4
	3	2		2

EE312

Course Code	Course Name	L-T-P:C	Year of Introduction
EE312	Electrical and Electronics Engineering	3-0-0:3	2016

No.	Course Outcome - EE312 - Electrical and Electronics Engineering	Target
CO1	Demonstrate the principle of operation, construction, testing and applications of transformers.	50%
CO2	Describe the construction and working of single and three phase induction motors, and analyze their performance.	50%
CO3	Illustrate the construction and working of different types of DC machines (DC Generator and DC Motor).	50%
CO4	. Outline the principle of operation and requirements of RPC systems, Geneva cam reluctance motors and stepper motors	50%
CO5	Identify the most suitable type of motor drive combination and its specifications for efficient conversion and control of electric power	50%
CO6	Imbibe and demonstrate the concepts of various types of power converters and inverters	50%

COURSE END SURVEY - EE312 - Electrical and Electronics Engineering

Sl.No	Questions & Options
CO1	Students able to demonstrate the principle of operation, construction, testing and applications of transformers.
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>
CO2	Students able to describe the construction and working of single and three phase induction motors, and analyze their performance.
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>
CO3	Students able to illustrate the construction and working of different types of DC machines (DC Generator and DC Motor).
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>
CO4	Students able to outline the principle of operation and requirements of RPC systems, Geneva cam reluctance motors and stepper motors

	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>
CO5	Students able to identify the most suitable type of motor drive combination and its specifications for efficient conversion and control of electric power
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>
CO6	Students able to imbibe and demonstrate the concepts of various types of power converters and inverters
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>

CO->PO MAPPING - EE312 - Electrical and Electronics Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	2	1	2	2	3	2
CO2	3	3	3	3	3	3	3	2	1	1	2	3
CO3	3	3	3	2	3	3	3	1	1	2	1	2
CO4	3	3	3	3	3	2	3	2	2	2	2	2
CO5	3	3	3	3	2	1	1	3	1	2	2	3
CO6	3	3	3	3	2	3	1	2	3	2	3	1

CO->PSO MAPPING - EE312 - Electrical and Electronics Engineering

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	3	3	1
CO2	3	3	2	1
CO3	3	3	3	2
CO4	3	3	3	3
CO5	3	3	2	1
CO6	3	3	3	2

COURSE->PO MAPPING - EE312 - Electrical and Electronics Engineering

EE312/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3	3	3	3	2	3	3

COURSE->PSO MAPPING - EE312 - Electrical and Electronics Engineering

EE312/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	3

ME308

Course Code	Course Name	L-T-P:C	Year of Introduction
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ME308	Computer Aided Design and Analysis	3-0-0:3	2016
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No.	Course Outcome - ME308 - Computer Aided Design and Analysis	Target
CO1	Explain how computer and CAD software are being used in mechanical component design.	65%
CO2	Describe the applications of Computer Aided Design and various graphics images can be created on the computer and its representation standards.	65%
CO3	Identify the algorithms behind CAD package and drawing of spline curves.	65%
CO4	Construct solid models and representation scheme and describe various co-ordinate systems for solid model.	65%
CO5	Demonstrate Finite Element Analysis and use 1D and 2D element stiffness matrices and load vectors from various methods to solve for displacements and stresses.	65%
CO6	Describe Interpolation and show how to solve 2D plane stress solid mechanics problems.	65%

COURSE END SURVEY - ME308 - Computer Aided Design and Analysis

Sl.No	Questions & Options
CO1	How far you are able to explain computer and CAD software are being used in mechanical component design?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO2	How far you are able to describe the applications of Computer Aided Design and various graphics images can be created on the computer and its representation standards?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	How far you are able to identify the algorithms behind CAD package and drawing of spline curves.
	Answer Choice- <i>Most acceptable/Moderately Acceptable Acceptable/Less acceptable/Not acceptable</i>
CO4	How far you are able to construct solid models and representation scheme and describe various co-ordinate systems for solid model?
	Answer Choice- <i>Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied</i>
CO5	How far you are able to demonstrate Finite Element Analysis and use 1D and 2D element stiffness matrices and load vectors from various methods to solve for displacements and stresses?
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO6	How far you are able to describe Interpolation and show how to solve 2D plane stress solid mechanics problems?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>

CO->PO MAPPING - ME308 - Computer Aided Design and Analysis

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												

CO3												
CO4												
CO5												
CO6												

CO->PSO MAPPING - ME308 - Computer Aided Design and Analysis

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

COURSE->PO MAPPING - ME308 - Computer Aided Design and Analysis

ME308/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - ME308 - Computer Aided Design and Analysis

ME308/PSO	PSO1	PSO2	PSO3	PSO4

AU334

Course Code	Course Name	L-T-P:C	Year of Introduction
AU334	Vehicle Testing Lab	0-0-3:1	2016

No.	Course Outcome - AU334 - Vehicle Testing Lab	Target
CO1	Explain the purpose of various equipment's to test the performance of automobiles	70%
CO2	Understanding various testing methods for automobiles for its smooth operations	70%
CO3	Familiarize with the test processes for diagnosing a fault	70%
CO4	Trouble shooting in various systems in automobiles	70%
CO5	Explain the periodic and preventive maintenance procedures for a vehicle	70%

COURSE END SURVEY - AU334 - Vehicle Testing Lab

Sl.No	Questions & Options
	To what extend you will be able to test the performance of automobiles

CO1	
	Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>
CO2	To what extend you understand various testing methods for automobiles for its smooth operations
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO3	How familiarized are you with the test processes for diagnosing a fault
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extend you will be able to trouble shoot in various systems in automobiles
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO5	To what extend you will be able to explain the periodic and preventive maintenance procedures for a vehicle
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>

CO->PO MAPPING - AU334 - Vehicle Testing Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	1		2							3
CO2	2		2	1	3							3
CO3	1	2	2	3	3	1						2
CO4	2	3	3	1			1					2
CO5	2	1	2	1		1	1					

CO->PSO MAPPING - AU334 - Vehicle Testing Lab

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1			2
CO2	3	1		2
CO3	1	1		3
CO4	2	1	1	3
CO5				

COURSE->PO MAPPING - AU334 - Vehicle Testing Lab

AU334/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	3	3	3	3	1	1					3

COURSE->PSO MAPPING - AU334 - Vehicle Testing Lab

AU334/PSO	PSO1	PSO2	PSO3	PSO4
	3	1	1	3

AU368

Course Code	Course Name	L-T-P:C	Year of Introduction
AU368	Tractors and Farm Equipment	3-0-0:3	2016

No.	Course Outcome - AU368 - Tractors and Farm Equipment	Target
CO1	Describe various Tractors and their applications	60%
CO2	Illustrate the working of tractors and their layout	60%
CO3	Describe various systems in a tractor and farm equipment	60%
CO4	Describe transmission systems and maintenance of tractors	60%
CO5	Illustrate various tillage equipment and tractor attachments	60%
CO6	Describe various harvesting machineries used in modern farming	60%

COURSE END SURVEY - AU368 - Tractors and Farm Equipment

Sl.No	Questions & Options
CO1	Are you aware of basic tractor types and its layout
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO2	Ability to explain tractor layout and working
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	The depth of knowledge in cooling and lubrication systems in tractors
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO4	Can explain the maintenance of tractor transmission
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO5	Depth of knowledge in various tillage machines
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO6	The harvesting machines are one of the most acceptable invention of the century
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>

CO->PO MAPPING - AU368 - Tractors and Farm Equipment

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	2	2	2	1				1	1
CO2	2	1	3	2	2	1				1		
CO3	3	2	3	3	2		1	1		2		1

CO4	2	3	2	1	2	3	3			1		3
CO5	3	2	3	2			3		1		2	
CO6	3	2	3	2	2		3			1		2

CO->PSO MAPPING - AU368 - Tractors and Farm Equipment

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	2		3
CO2		1	1	2
CO3	2			3
CO4	2	1		2
CO5	3	1	1	1
CO6	2			2

COURSE->PO MAPPING - AU368 - Tractors and Farm Equipment

AU368/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	2	3	3	1	1	2	2	3

COURSE->PSO MAPPING - AU368 - Tractors and Farm Equipment

AU368/PSO	PSO1	PSO2	PSO3	PSO4
	3	2	1	3

SEMESTER-7**AU010701**

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010701	DESIGN OF MACHINE ELEMENTS	4-0-0:4	2010

COURSE END SURVEY - AU010701 - DESIGN OF MACHINE ELEMENTS**CO->PO MAPPING - AU010701 - DESIGN OF MACHINE ELEMENTS**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU010701 - DESIGN OF MACHINE ELEMENTS

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - AU010701 - DESIGN OF MACHINE ELEMENTS

AU010701/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010701 - DESIGN OF MACHINE ELEMENTS

AU010701/PSO	PSO1	PSO2	PSO3	PSO4

AU010705

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010705	Industrial Engineering	4-0-0:4	2010

COURSE END SURVEY - AU010705 - Industrial Engineering**CO->PO MAPPING - AU010705 - Industrial Engineering**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - AU010705 - Industrial Engineering

CO/PSO	PSO1	PSO2	PSO3	PSO4

COURSE->PO MAPPING - AU010705 - Industrial Engineering

AU010705/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010705 - Industrial Engineering

AU010705/PSO	PSO1	PSO2	PSO3	PSO4

AU010706

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010706	Elective II	4-0-0:4	2010

COURSE END SURVEY - AU010706 - Elective II**CO->PO MAPPING - AU010706 - Elective II**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - AU010706 - Elective II

CO/PSO	PSO1	PSO2	PSO3	PSO4

COURSE->PO MAPPING - AU010706 - Elective II

AU010706/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010706 - Elective II

AU010706/PSO	PSO1	PSO2	PSO3	PSO4

AU010707

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010707	MECHANICAL MEASUREMENTS LABORATORY	0-0-4:0	2010

COURSE END SURVEY - AU010707 - MECHANICAL MEASUREMENTS LABORATORY
CO->PO MAPPING - AU010707 - MECHANICAL MEASUREMENTS LABORATORY

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU010707 - MECHANICAL MEASUREMENTS LABORATORY

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - AU010707 - MECHANICAL MEASUREMENTS LABORATORY

AU010707/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010707 - MECHANICAL MEASUREMENTS LABORATORY

AU010707/PSO	PSO1	PSO2	PSO3	PSO4

AU010708

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010708	Seminar	0-0-4:0	2010

COURSE END SURVEY - AU010708 - Seminar
CO->PO MAPPING - AU010708 - Seminar

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU010708 - Seminar

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - AU010708 - Seminar

AU010708/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010708 - Seminar

AU010708/PSO	PSO1	PSO2	PSO3	PSO4

AU010710

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010710	Project	0-0-4:0	2010

COURSE END SURVEY - AU010710 - Project
CO->PO MAPPING - AU010710 - Project

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU010710 - Project

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - AU010710 - Project

AU010710/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010710 - Project

AU010710/PSO	PSO1	PSO2	PSO3	PSO4

AU010702

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010702	ADVANCED AUTOMOTIVE TECHNOLOGY	4-0-0:4	2010

COURSE END SURVEY - AU010702 - ADVANCED AUTOMOTIVE TECHNOLOGY**CO->PO MAPPING - AU010702 - ADVANCED AUTOMOTIVE TECHNOLOGY**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU010702 - ADVANCED AUTOMOTIVE TECHNOLOGY

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - AU010702 - ADVANCED AUTOMOTIVE TECHNOLOGY

AU010702/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010702 - ADVANCED AUTOMOTIVE TECHNOLOGY

AU010702/PSO	PSO1	PSO2	PSO3	PSO4

AU010704

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010704	Refrigeration and Air Conditioning	4-0-0:4	2010

COURSE END SURVEY - AU010704 - Refrigeration and Air Conditioning**CO->PO MAPPING - AU010704 - Refrigeration and Air Conditioning**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU010704 - Refrigeration and Air Conditioning

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - AU010704 - Refrigeration and Air Conditioning

AU010704/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010704 - Refrigeration and Air Conditioning

AU010704/PSO	PSO1	PSO2	PSO3	PSO4

AU010703

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010703	AUTO ELECTRICAL AND ELECTRONICS	4-0-0:4	2010

COURSE END SURVEY - AU010703 - AUTO ELECTRICAL AND ELECTRONICS**CO->PO MAPPING - AU010703 - AUTO ELECTRICAL AND ELECTRONICS**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - AU010703 - AUTO ELECTRICAL AND ELECTRONICS

CO/PSO	PSO1	PSO2	PSO3	PSO4

COURSE->PO MAPPING - AU010703 - AUTO ELECTRICAL AND ELECTRONICS

AU010703/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010703 - AUTO ELECTRICAL AND ELECTRONICS

AU010703/PSO	PSO1	PSO2	PSO3	PSO4

AU010709

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010709	Seminar	0-0-4:0	2010

COURSE END SURVEY - AU010709 - Seminar**CO->PO MAPPING - AU010709 - Seminar**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - AU010709 - Seminar

CO/PSO	PSO1	PSO2	PSO3	PSO4

COURSE->PO MAPPING - AU010709 - Seminar

AU010709/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010709 - Seminar

AU010709/PSO	PSO1	PSO2	PSO3	PSO4

AU010706L01

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010706L01	Vehicle Body Engineering	4-0-0:4	2010

COURSE END SURVEY - AU010706L01 - Vehicle Body Engineering**CO->PO MAPPING - AU010706L01 - Vehicle Body Engineering**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - AU010706L01 - Vehicle Body Engineering

CO/PSO	PSO1	PSO2	PSO3	PSO4

COURSE->PO MAPPING - AU010706L01 - Vehicle Body Engineering

AU010706L01/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010706L01 - Vehicle Body Engineering

AU010706L01/PSO	PSO1	PSO2	PSO3	PSO4

AU010706L02

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010706L02	Vehicle Performance and Testing	4-0-0:4	2010

COURSE END SURVEY - AU010706L02 - Vehicle Performance and Testing**CO->PO MAPPING - AU010706L02 - Vehicle Performance and Testing**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - AU010706L02 - Vehicle Performance and Testing

CO/PSO	PSO1	PSO2	PSO3	PSO4

COURSE->PO MAPPING - AU010706L02 - Vehicle Performance and Testing

AU010706L02/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010706L02 - Vehicle Performance and Testing

AU010706L02/PSO	PSO1	PSO2	PSO3	PSO4

AU010710

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010710	Project	4-0-0:4	2010

COURSE END SURVEY - AU010710 - Project**CO->PO MAPPING - AU010710 - Project**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU010710 - Project

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - AU010710 - Project

AU010710/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010710 - Project

AU010710/PSO	PSO1	PSO2	PSO3	PSO4

AU010709

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010709	Seminar	4-0-0:4	2010

COURSE END SURVEY - AU010709 - Seminar**CO->PO MAPPING - AU010709 - Seminar**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU010709 - Seminar

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - AU010709 - Seminar

AU010709/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010709 - Seminar

AU010709/PSO	PSO1	PSO2	PSO3	PSO4

AU401

Course Code	Course Name	L-T-P:C	Year of Introduction
AU401	Automotive System Design	4-0-0:4	2016

No.	Course Outcome - AU401 - Automotive System Design	Target
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CO1	THE STUDENT IS IMPARTED WITH BASIC KNOWLEDGE AND ASSUMPTIONS IN DESIGN OF VEHICLE	65%
CO2	DESIGN THE VALVE TRAIN AND THE INTAKE PORT OF AN ENGINE	65%
CO3	CAPABLE OF ASSUMING AND CALCULATING THE PARAMETERS IN THE ENGINE DESIGN OF A MULTI-CYLINDER ENGINE	66%
CO4	DESIGN OF ENGINE COOLING SYSTEMS	65%
CO5	Design a proper lubrication system for the engine to optimize its performance	65%
CO6	CAPABILITY TO DESIGN A POWER TRAIN OF AN ENGINE BASED ON THE VEHICLE NEED	66%

COURSE END SURVEY - AU401 - Automotive System Design

Sl.No	Questions & Options
CO1	Are you able to identify the different criteria for initiating the design of a vehicle?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO2	Are you capable of identifying the valve timing and valve dimensions based on the inputs given?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO3	Are you able to compare two engines based on the design parameters and find the output of both engines
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO4	Can you suggest a cooling system for the engine based on the engine parameters?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO5	Can you identify the lubrication levels and quantity based on the engine parameters?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO6	Can you design the gearbox and gear ratios of the vehicle with input parameters of engine and vehicle?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>

CO->PO MAPPING - AU401 - Automotive System Design

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	1	2	3	2	1			2	1	
CO2	3	2	3	2	1	1	1	2	2	1		
CO3	3	3	2	3	2	1	1	1		3		
CO4	3	3	2	3	3	2	1	2	2	2	2	2
CO5	3	3	3	2	2	2	2	2	2	3	1	
CO6	3	3	3	3	1	2	2	2	1	2	1	

CO->PSO MAPPING - AU401 - Automotive System Design

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	2		2
CO2	3	3		3
CO3	3	3		3
CO4	3	3		3
CO5	3	3		3
CO6	3	2		3

COURSE->PO MAPPING - AU401 - Automotive System Design

AU401/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	2	2	2	2	3	2	2

COURSE->PSO MAPPING - AU401 - Automotive System Design

AU401/PSO	PSO1	PSO2	PSO3	PSO4
	3	3		3

AU403

Course Code	Course Name	L-T-P:C	Year of Introduction
AU403	Vehicle Dynamics	3-0-0:3	2016

No.	Course Outcome - AU403 - Vehicle Dynamics	Target
CO1	Understand the basic science behind the vehicle stability and propulsion.	64%
CO2	Understand and analyze the vibration as theoretical problems and vehicle cases.	64%
CO3	Understand resistances and engine power to overcome them for vehicle movement.	64%
CO4	Analyze the importance of tyre dynamics in vehicle performance and stability.	64%
CO5	Determine the performance and stability of a vehicle in a given condition.	64%
CO6	Analyze the performance of braking in a given set theoretical conditions.	64%

COURSE END SURVEY - AU403 - Vehicle Dynamics

Sl.No	Questions & Options
CO1	Whether the topics helped you to have an idea about stability of vehicles?
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>
CO2	What is the extent of understanding in case of vehicle vibration?

	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	What is the knowledge level in engine power delivery and other running parameters?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO4	Extend of knowledge in tire dynamics and its analysis is?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO5	Now you are able to analyse the stability and performance of a vehicle in various running conditions
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO6	Whether you gained enough knowledge in automotive brakes?
	Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>

CO->PO MAPPING - AU403 - Vehicle Dynamics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		3	1	2	3	3			1		1	3
CO2	2	3	1	2	3			1	1		2	2
CO3	3	2	1	2	1		1	3	1		1	
CO4	2	2	3	3	2		2		1	3	2	1
CO5	3	2		3	2	1	3	1		2		1
CO6	3	2	1	2	3		1	1		1	1	

CO->PSO MAPPING - AU403 - Vehicle Dynamics

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	2		2
CO2				3
CO3	3	1	2	2
CO4	3			2
CO5	2	3	2	3
CO6	3		1	1

COURSE->PO MAPPING - AU403 - Vehicle Dynamics

AU403/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3	3	3	1	3	2	3

COURSE->PSO MAPPING - AU403 - Vehicle Dynamics

	PSO1	PSO2	PSO3	PSO4

AU403/PSO	3	3	2	3
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AU405

Course Code	Course Name	L-T-P:C	Year of Introduction
AU405	Automotive Refrigeration & Air Conditioning	3-0-0:3	2016

No.	Course Outcome - AU405 - Automotive Refrigeration & Air Conditioning	Target
CO1	The students will be able to explain the principles and thermodynamics of refrigeration	60%
CO2	The students will be able to describe the classification and various components of an air conditioning system	60%
CO3	The students will be able to do refrigeration and air conditioning load calculation	60%
CO4	The students will be able to explain air distribution system in an air conditioning system	60%
CO5	The students will be able to explain air routing and temperature control in an air conditioning system	60%
CO6	The students will be able to explain the service and maintenance of an air conditioning system	60%

COURSE END SURVEY - AU405 - Automotive Refrigeration & Air Conditioning

Sl.No	Questions & Options
CO1	To what extent are you able to explain the principles and thermodynamics of refrigeration
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	To what extent are you able to describe the classification and various components of an air conditioning system
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	To what extent are you able to do refrigeration and air conditioning load calculation
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extent are you able to explain air distribution system in an air conditioning system
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extent are you able to explain air routing and temperature control in an air conditioning system
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO6	To what extent are you able to explain the service and maintenance of an air conditioning system
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - AU405 - Automotive Refrigeration & Air Conditioning

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO1	2	3	2	3	1	1	2	2	2	3	2	3
CO2	2	3	3	2	1	1	2	1	2	2	2	3
CO3	3	3	2	3	1	2	2	3	2	3	2	3
CO4	2	3	2	3	2	2	2	2	2	3	2	3
CO5	2	3	2	3	2	2	2	1	2	3	2	3
CO6	3	3	2	2	2	2	2	2	3	3	3	3

CO->PSO MAPPING - AU405 - Automotive Refrigeration & Air Conditioning

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	1	2
CO2	2	2	1	1
CO3	3	3	2	2
CO4	3	2	1	2
CO5	2	2	1	2
CO6	3	2	3	3

COURSE->PO MAPPING - AU405 - Automotive Refrigeration & Air Conditioning

AU405/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	2	2	2	3	3	3	3	3

COURSE->PSO MAPPING - AU405 - Automotive Refrigeration & Air Conditioning

AU405/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	3

AU407

Course Code	Course Name	L-T-P:C	Year of Introduction
AU407	Advanced I C Engines	3-0-0:3	2016

No.	Course Outcome - AU407 - Advanced I C Engines	Target
CO1	Demonstrate the basic concepts of non-conventional IC Engines	62%
CO2	Evaluate dual fuel and multi fuel engine technology	62%
CO3	Illustrate the lean burn technology developments and advancements in the field of IC engines	62%
CO4	Evaluate gas turbine plants and its application in automotive industry	62%

CO5	Evaluate stratified charged engines and other special types of engines	62%
CO6	Describe the working of HCCI and CAI engines	62%

COURSE END SURVEY - AU407 - Advanced I C Engines

Sl.No	Questions & Options
CO1	To what extend you are able to apply the knowledge of non-conventional IC Engines
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO2	To what extend you are able to justify the use of dual fuel and multi fuel engine technology and engine technologies
	Answer Choice- <i>Most acceptable/Moderately Acceptable Acceptable/Less acceptable/Not acceptable</i>
CO3	how well you can apply the knowledge of lean combustion
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	how well you are assess the worth of Gas Turbine as an advanced IC Engine
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	How you grade stratified charged engines and other special types of engines for automotive application
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	what is your level of understanding about of HCCI and CAI engines
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - AU407 - Advanced I C Engines

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	1						1		1
CO2	3	2	1	1						1		1
CO3	3	2	1	1						1		1
CO4	3	2	1	1						1		1
CO5	3	2	1	1						1		1
CO6	3	2	1	1						1		1

CO->PSO MAPPING - AU407 - Advanced I C Engines

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	1		2
CO2	3	1		2
CO3	3	1		2
CO4	3	1		2

CO5	3	1		2
CO6	3	1		2

COURSE->PO MAPPING - AU407 - Advanced I C Engines

AU407/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	1	1						1		1

COURSE->PSO MAPPING - AU407 - Advanced I C Engines

AU407/PSO	PSO1	PSO2	PSO3	PSO4
	3	1		2

AU409

Course Code	Course Name	L-T-P:C	Year of Introduction
AU409	Simulation & Analysis of IC Engine Processes	3-0-0:3	2016

No.	Course Outcome - AU409 - Simulation & Analysis of IC Engine Processes	Target
CO1	Demonstrate a knowledge on the thermodynamics of combustion in IC engines	60%
CO2	Analyse the Ideal Otto cycle and simulate processes with air as working medium	60%
CO3	Analyse the Ideal diesel cycle and simulate with air under different induction conditions	60%
CO4	Illustrate the knowledge about gas exchange process and importance of valve parameters	60%
CO5	Distinguish the working of two stroke engines with the working of different port systems	60%
CO6	Define the effect of heat transfer and friction on heat engine cycles	60%

COURSE END SURVEY - AU409 - Simulation & Analysis of IC Engine Processes

Sl.No	Questions & Options
CO1	How far the course is helpful you to understand the concept of combustion processes in a thermodynamic aspect
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	Did the course was helpful to understand the simulation of Otto cycle in its ideal state
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>
CO3	Diesel engine simulation helped you to understand the processes to what extend
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO4	How the important of gas exchange and valve parameters helped you to understand IC engines
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>

CO5	How come the knowledge of two stroke engines and characteristics helped you to understand the problems in it
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>
CO6	To what degree the heat transfer and friction course was helpful
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>

CO->PO MAPPING - AU409 - Simulation & Analysis of IC Engine Processes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	1	1		1		1	1		2
CO2	3	2		2	1			1		2	1	
CO3	3	2		1	1		1		2	2		2
CO4	3	2	1	2	1		1		1	2	1	2
CO5	2	2		1	1	1	1	1		2	1	1
CO6	2	2	1	1	1		1		1	1		1

CO->PSO MAPPING - AU409 - Simulation & Analysis of IC Engine Processes

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1	2		2
CO2	2	1	1	2
CO3	2	1		2
CO4	2	2	2	2
CO5		1	1	2
CO6	1	2	1	2

COURSE->PO MAPPING - AU409 - Simulation & Analysis of IC Engine Processes

AU409/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	1	2	1	1	1	1	2	2	1	2

COURSE->PSO MAPPING - AU409 - Simulation & Analysis of IC Engine Processes

AU409/PSO	PSO1	PSO2	PSO3	PSO4
	2	2	2	2

AU451

Course Code	Course Name	L-T-P:C	Year of Introduction
AU451	Seminar & Project Preliminary	0-1-4:2	2016

No.	Course Outcome - AU451 - Seminar & Project Preliminary	Target
CO1	Analyse a current topic of technical interest and present it before an audience	66%
CO2	Identify an engineering problem, analyse it and propose a work plan to solve it.	66%
CO3	Develop skills in doing literature survey, technical presentation and report preparation	66%
CO4	Enable project identification and execution of preliminary works for final semester project	70%
CO5	Build confidence to carry out research and make presentation on a specified topic.	65%

COURSE END SURVEY - AU451 - Seminar & Project Preliminary

Sl.No	Questions & Options
CO1	ability to present a topic in front of audience
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	The extent of knowledge in designing a solution for an engineering problem
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO3	Ability to spot out needed data from a literature
	Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>
CO4	The level of execution of finalised design
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO5	The extent of confidence to carry forward the work to a practical research
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>

CO->PO MAPPING - AU451 - Seminar & Project Preliminary

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	3	2	2	1	1	2	3	1	3
CO2	3	3	2	3	1		3	1	1	2	2	3
CO3	2	2	2	2	2		2			3	3	3
CO4	1	3	3	3	2		2					2
CO5		2	1	2	3		2		2		2	3

CO->PSO MAPPING - AU451 - Seminar & Project Preliminary

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	3	1	3
CO2	3	3	1	3
CO3	3	3	3	2

CO4	2	2	2	1
CO5	1	2	3	3

COURSE->PO MAPPING - AU451 - Seminar & Project Preliminary

AU451/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	2	3	1	2	3	3	3

COURSE->PSO MAPPING - AU451 - Seminar & Project Preliminary

AU451/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	3

AU431

Course Code	Course Name	L-T-P:C	Year of Introduction
AU431	Autotronics Lab	0-0-3:1	2016

No.	Course Outcome - AU431 - Autotronics Lab	Target
CO1	Perform hands-on-experiments in auto electrical systems and fault diagnostics	90%
CO2	Demonstrate the use of various sensors used in Automobiles.	90%
CO3	Design electronic circuits for automotive systems.	90%
CO4	Identify and suggest solutions to possible electrical faults	90%
CO5	Design an appropriate circuit to perform a function in an automobile.	90%

COURSE END SURVEY - AU431 - Autotronics Lab

Sl.No	Questions & Options
CO1	Upto what extend you are able to understand auto electrical systems
	Answer Choice- 5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5
CO2	To what extend you are able to demonstrate the use of various sensors used in Automobiles
	Answer Choice- Excellent/Very Good/Good Satisfactory/Needs improvement
CO3	To what extend you are able to design electronic circuits for automotive systems.
	Answer Choice- Excellent/Very Good/Good Satisfactory/Needs improvement
CO4	To what extend you are able to suggest solutions to possible electrical faults
	Answer Choice- Excellent/Very Good/Good Satisfactory/Needs improvement
CO5	To what extend you are able to design an appropriate circuit to perform a function in an automobile.

Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - AU431 - Autotronics Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1											
CO2		2								2		
CO3			1									
CO4							3					1
CO5					3							

CO->PSO MAPPING - AU431 - Autotronics Lab

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2			
CO2		3		
CO3			3	
CO4				2
CO5			1	

COURSE->PO MAPPING - AU431 - Autotronics Lab

AU431/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	1	2	1		3		3			2		1

COURSE->PSO MAPPING - AU431 - Autotronics Lab

AU431/PSO	PSO1	PSO2	PSO3	PSO4
	2	3	3	2

AU463

Course Code	Course Name	L-T-P:C	Year of Introduction
AU463	Operation Management in Auto Industry	3-0-0:3	2016

No.	Course Outcome - AU463 - Operation Management in Auto Industry	Target
CO1	Identify various management tasks in automotive industry.	66%
CO2	Demonstrate the importance of strategic planning and standardization in project setup.	67%
CO3	Design plant operations for better man and machine utilization.	67%
CO4	Evaluate the concept of maintenance of plant machinery for reliability.	67%

CO5	Evaluate the role of logistics and identify performance indicators in logistics.	67%
CO6	Evaluate purchase related activities and various quality improvement methods.	67%

COURSE END SURVEY - AU463 - Operation Management in Auto Industry

Sl.No	Questions & Options
CO1	Can you understand various management tasks in automotive industry
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	Can you demonstrate the importance of strategic planning and standardization in project setup?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	Can you design plant operations for better man and machine utilization?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	Can you evaluate the concept of maintenance of plant machinery for reliability?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	Can you understand the role of logistics and identify performance indicators in logistics?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>
CO6	Can you evaluate purchase related activities and various quality improvement methods?
	Answer Choice- <i>Excellent/Very Good/Good Satisfactory/Needs improvement</i>

CO->PO MAPPING - AU463 - Operation Management in Auto Industry

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	1		2	1		2		1	1	2
CO2	1	2	3	1	2		3	3			2	
CO3	2	1	2	2		1	2		3	2		2
CO4	1	3	2	3		3	2		2		1	
CO5	1	2		2		1	2		2			3
CO6	2	2		3		2			1	2		1

CO->PSO MAPPING - AU463 - Operation Management in Auto Industry

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1		2	1
CO2	3	2		1
CO3	3	2	1	2
CO4		1		3

CO5	2	1	2	2
CO6	2		1	2

COURSE->PO MAPPING - AU463 - Operation Management in Auto Industry

AU463/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	3	3	3	2	3	3	3	3	2	2	3

COURSE->PSO MAPPING - AU463 - Operation Management in Auto Industry

AU463/PSO	PSO1	PSO2	PSO3	PSO4
	3	2	2	3

AU410

Course Code	Course Name	L-T-P:C	Year of Introduction
AU410	Vehicle Transport & Fleet Management	3-0-0:3	2016

No.	Course Outcome - AU410 - Vehicle Transport & Fleet Management	Target
CO1	Impart knowledge of managing a commercial fleet or transport firm management	62%
CO2	Gain knowledge of road construction used in the country and methods of construction	61.5%
CO3	Describe various transport halt stations and its design	61.5%
CO4	Explains various billing and payment systems used in transport systems	66%
CO5	Describes various maintenance schemes used in commercial fleet firms	66.5%
CO6	Create concepts of various passenger transport services used in public as well as private sector enterprises	65.8%

COURSE END SURVEY - AU410 - Vehicle Transport & Fleet Management

Sl.No	Questions & Options
CO1	Did the course imparted enough guidance to operate a fleet?
	Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>
CO2	Methods of construction of roads is a must to learn topic for an automotive engineer
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO3	Transport halt station design is very important in transport management
	Answer Choice- <i>Most acceptable/Moderately Acceptable Acceptable/Less acceptable/Not acceptable</i>
CO4	Studying billing methods and payment methods is
	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>

CO5	Vehicle maintenance is very important in fleet management
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO6	The need of new transport system is?
	Answer Choice- <i>Most acceptable/Moderately Acceptable Acceptable/Less acceptable/Not acceptable</i>

CO->PO MAPPING - AU410 - Vehicle Transport & Fleet Management

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	1	1	3	3	3	2	1		1	3
CO2		1	2	1	3	3	1	3	1	1	3	2
CO3	1	1	3	1	2		1	2				2
CO4	3	3	1		3		1	2		1	2	1
CO5	3	1	2	2	3	2	3	2	2	1		1
CO6	3	2	2	3	1	3	1	3	3	3	1	2

CO->PSO MAPPING - AU410 - Vehicle Transport & Fleet Management

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3		3	3
CO2	3	1		3
CO3	2		1	2
CO4	2	1	1	1
CO5	3	1	2	3
CO6	1	2	1	3

COURSE->PO MAPPING - AU410 - Vehicle Transport & Fleet Management

AU410/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3	3	3	3	3	3	3

COURSE->PSO MAPPING - AU410 - Vehicle Transport & Fleet Management

AU410/PSO	PSO1	PSO2	PSO3	PSO4
	3	2	3	3

AU411

Course Code	Course Name	L-T-P:C	Year of Introduction
AU411	Engine and Drive Line Design	3-1-0:4	2016

No.	Course Outcome - AU411 - Engine and Drive Line Design	Target
CO1	Evaluate and design different IC engine components	65%
CO2	Design a journal bearing as per the requirement	65%
CO3	Design a rolling contact bearing according to the requirement	65%
CO4	Design a clutch based on the application	65%
CO5	Design a brake for the required application	65%
CO6	Design gears according to the application and requirement	65%

COURSE END SURVEY - AU411 - Engine and Drive Line Design

Sl.No	Questions & Options
CO1	Can you design an IC engine component based on the inputs?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO2	Are you able to design a journal bearing according to the requirement?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO3	Can you design a rolling contact bearing according to the requirement?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO4	Can you identify and design the clutch for the specific applications?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO5	Are you able to identify and design the brakes for the required application?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO6	Can you identify the type of gears and design it for the specific application?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>

CO->PO MAPPING - AU411 - Engine and Drive Line Design

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2		1		2		2		1
CO2	3	3	3	3		1				2		1
CO3	3	3	3	3		1				2		1
CO4	3	3	3	3		1	1			2		1
CO5	3	3	3	3			1			1		1
CO6	3	3	3	3			1			1		2

CO->PSO MAPPING - AU411 - Engine and Drive Line Design

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	2		3
CO2	3	2		2
CO3	3	3		2
CO4	3	2		2
CO5	3	2		2
CO6	3	2		2

COURSE->PO MAPPING - AU411 - Engine and Drive Line Design

AU411/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3		1	1	2		2		2

COURSE->PSO MAPPING - AU411 - Engine and Drive Line Design

AU411/PSO	PSO1	PSO2	PSO3	PSO4
	3	3		3

AU413

Course Code	Course Name	L-T-P:C	Year of Introduction
AU413	Automotive Mechatronics	3-0-0:3	2016

No.	Course Outcome - AU413 - Automotive Mechatronics	Target
CO1	Introduction to Mechatronics	65%
CO2	Actuators: Hydraulic and Pneumatic actuators	65%
CO3	Application of sensors in Automobiles:	65%
CO4	Fundamentals of Automotive Electronics and Microprocessor control system:	65%
CO5	Engine Management system I	65%
CO6	Engine Management system II: Electronic ignition systems and spark timing control.	65%

COURSE END SURVEY - AU413 - Automotive Mechatronics

Sl.No	Questions & Options
CO1	CO2
CO3	CO4
CO5	CO6

CO->PO MAPPING - AU413 - Automotive Mechatronics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2										
CO2	3											
CO3	2											
CO4	2								2	2		
CO5	2									2	2	
CO6	3											

CO->PSO MAPPING - AU413 - Automotive Mechatronics

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

COURSE->PO MAPPING - AU413 - Automotive Mechatronics

AU413/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2							2	2	2	

COURSE->PSO MAPPING - AU413 - Automotive Mechatronics

AU413/PSO	PSO1	PSO2	PSO3	PSO4

AU415

Course Code	Course Name	L-T-P:C	Year of Introduction
AU415	Automotive Pollution & Control	3-0-0:3	2016

No.	Course Outcome - AU415 - Automotive Pollution & Control	Target
CO1	To get knowledge on automotive pollution formation	75%
CO2	To know about formation and control techniques of pollutants like UBHC, CO, NOx, particulate matter and smoke for SI	73%
CO3	To know about formation and control techniques of pollutants for CI Engines	73%

CO4	To introduce test procedures and emission standards	76%
CO5	To impart knowledge on automotive pollution control and control techniques	73%
CO6	To introduce measurement standards and instruments for pollution measurement	72%

COURSE END SURVEY - AU415 - Automotive Pollution & Control

Sl.No	Questions & Options
CO1	To what extend you know about the formation of automotive emissions
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	How much knowledge do you have about the formation and control techniques in SI Engines?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	In CI Engines, how much did you learn about the formation and control techniques?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extend do you know about the various test procedures and emission standards for Automotive pollution control
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extend you about the automotive pollution control and control techniques?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO6	How much knowledge did you gain about the measurement standards and instruments for pollution measurement.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - AU415 - Automotive Pollution & Control

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1											
CO2		2										
CO3												
CO4												
CO5												
CO6												

CO->PSO MAPPING - AU415 - Automotive Pollution & Control

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				

CO3				
CO4				
CO5				
CO6				

COURSE->PO MAPPING - AU415 - Automotive Pollution & Control

AU415/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	1	2										

COURSE->PSO MAPPING - AU415 - Automotive Pollution & Control

AU415/PSO	PSO1	PSO2	PSO3	PSO4

AU461

Course Code	Course Name	L-T-P:C	Year of Introduction
AU461	Automotive Comfort & Safety Engineering	3-0-0:3	2016

No.	Course Outcome - AU461 - Automotive Comfort & Safety Engineering	Target
CO1	The students will be able to understand the basic concepts of automotive ergonomics	60%
CO2	To impart the basic concepts of creating workspace for driver	60%
CO3	To impart the idea and problems during entrance and exit	72%
CO4	The students will be able to understand the basic concepts of driving and non-driving tasks	71%
CO5	To impart knowledge on Vehicle evaluation methods of data collection and analysis	71%
CO6	To impart the idea of automotive safety	71%

COURSE END SURVEY - AU461 - Automotive Comfort & Safety Engineering

Sl.No	Questions & Options
CO1	To what extend you are able to understand the basic concepts of automotive ergonomics Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	CO3
CO4	CO5
CO6	

CO->PO MAPPING - AU461 - Automotive Comfort & Safety Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO1	2						2					
CO2		2						1				
CO3	3						2					
CO4					3							
CO5	3											
CO6												

CO->PSO MAPPING - AU461 - Automotive Comfort & Safety Engineering

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2			
CO2				
CO3			1	
CO4		2		
CO5				
CO6		1		

COURSE->PO MAPPING - AU461 - Automotive Comfort & Safety Engineering

AU461/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2			3		2	1				

COURSE->PSO MAPPING - AU461 - Automotive Comfort & Safety Engineering

AU461/PSO	PSO1	PSO2	PSO3	PSO4
	2	2	1	

AU469

Course Code	Course Name	L-T-P:C	Year of Introduction
AU469	Earth Moving Equipment	3-0-0:3	2016

No.	Course Outcome - AU469 - Earth Moving Equipment	Target
CO1	Students are able to understand about power plants for earth moving equipments	75%
CO2	Students were able to understand about performance characteristics of earth moving equipments	75%
CO3	Students were able to understand about different types of trucks used for the movement of earth	75%
CO4	Students were able to understand about power and capacity of earth moving machines	75%

CO5	Students were able to understand about the working of shovels and ditchers.	75%
CO6	Students were able to understand about construction and industrial equipments	75%

COURSE END SURVEY - AU469 - Earth Moving Equipment

Sl.No	Questions & Options
CO1	To what extend students were able to understand about power plants used in earth moving equipments
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	To what extend students were able to understand about the performance characteristics of different earth moving equipments
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	To what extend, students were able to understand about different types of trucks used for the movement of earth
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	Students were able to understand about power and capacity of earth moving machines
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extend, students were able to understand about the working of shovels and ditchers.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO6	To what extend students were able to understand about construction and industrial equipments
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - AU469 - Earth Moving Equipment

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1					1		1		2		
CO2			2				3				1	
CO3		1			3			2				
CO4				2						1	1	
CO5				2		3		2				2
CO6						2			3		2	

CO->PSO MAPPING - AU469 - Earth Moving Equipment

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1		2	
CO2		2		
CO3				2

CO4		2		
CO5	1	3		
CO6			1	

COURSE->PO MAPPING - AU469 - Earth Moving Equipment

AU469/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	1	1	2	2	3	3	3	2	3	2	2	2

COURSE->PSO MAPPING - AU469 - Earth Moving Equipment

AU469/PSO	PSO1	PSO2	PSO3	PSO4
	1	3	2	2

AU433

Course Code	Course Name	L-T-P:C	Year of Introduction
AU433	Automotive Mechatronics Lab	0-0-3:1	2016

COURSE END SURVEY - AU433 - Automotive Mechatronics Lab**CO->PO MAPPING - AU433 - Automotive Mechatronics Lab**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU433 - Automotive Mechatronics Lab

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - AU433 - Automotive Mechatronics Lab

AU433/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU433 - Automotive Mechatronics Lab

AU433/PSO	PSO1	PSO2	PSO3	PSO4

SEMESTER-8**AU010801**

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010801	Design of Transmission Elements	0-0-0:0	2014

No.	Course Outcome - AU010801 - Design of Transmission Elements	Target
CO1	Design different types of bearings for static and dynamic load	60%

CO2	Applying design considerations for proper designing of clutches and brakes	60%
CO3	Analyze the different forces acting on gears and designing gears based on application	60%
CO4	Illustrate design recommendations for forgings, casting, welded products, rolled sections, turned parts	55%
CO5	Design a system ,component or a process to meet desired needs within realistic constraints such as economical, safety, manufacturability and sustainability	65%

COURSE END SURVEY - AU010801 - Design of Transmission Elements

Sl.No	Questions & Options
CO1	To what extend design of different types of bearings for static and dynamic load
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	How far you able to apply design considerations for proper designing of clutches and brakes
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	How far the course helped to analyze the different forces acting on gears and designing gears based on application
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	to what extent the design recommendations for forgings, casting, welded products, rolled sections, turned parts
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	How far you able to design a system ,component or a process to meet desired needs within realistic constraints such as economical, safety, manufacturability and sustainability
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - AU010801 - Design of Transmission Elements

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	1	3	1		1			1	1	1
CO2	3	2	1		1		1			1	1	1
CO3	2	2	1	2			1			1	1	1
CO4	2	1	2	2			1			1	1	1
CO5	2	1	3	1	1		1			1	1	1

CO->PSO MAPPING - AU010801 - Design of Transmission Elements

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	2		2
CO2	3	2		2
CO3	3	2		2

CO4	2	2		2
CO5	2	2		2

COURSE->PO MAPPING - AU010801 - Design of Transmission Elements

AU010801/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	1		1			1	1	1

COURSE->PSO MAPPING - AU010801 - Design of Transmission Elements

AU010801/PSO	PSO1	PSO2	PSO3	PSO4
	3	2		2

AU010802

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010802	Operations Management	0-0-0:0	2014

No.	Course Outcome - AU010802 - Operations Management	Target
CO1	Acquire a sound knowledge on the principles of Operations Management.	50%
CO2	Interpret the use forecasting methods, scheduling and Sequencing methods, maintenance planning and control and supply chain management concepts in Operations Management.	50%
CO3	Utilize an appropriate principles/methods/ techniques/ modern concepts with reference to given application/situation in the mechanical systems/ project management and finance.	50%
CO4	Develop and implement new ideas/ modern concepts with reference to given application/situation for best manufacturing practices.	50%
CO5	Formulate the ability to engage in independent and life-long learning in the context of technological change in Operations Management.	50%

COURSE END SURVEY - AU010802 - Operations Management

Sl.No	Questions & Options
CO1	To what extent you are able to understand the concept of Operations Management? Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extent you are able to understand the applications of scheduling and sequencing problems? Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	To what extent you are able to use OM principles/methods/ techniques/ modern concepts with reference to given application/situation in the mechanical systems/ project management and finance. Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extent you are able to apply new ideas/ modern concepts with reference to given application/situation for best manufacturing practices?

	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extent you are able to recognize the ability to engage in independent and life-long learning in the context of technological change in Operations Management?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - AU010802 - Operations Management

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1		1		2	2		1		2	1	2
CO2	3		2	1		1	1		1		2	2
CO3	1	2		1	2	2		2		1		3
CO4	2		3		1	1	3		3	1		1
CO5	2	1		3		2		1			3	2

CO->PSO MAPPING - AU010802 - Operations Management

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1	1	1	1
CO2	1	2	1	2
CO3	1	1	2	1
CO4	1	1	3	2
CO5	2	1		1

COURSE->PO MAPPING - AU010802 - Operations Management

AU010802/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	3	3	2	2	3	2	3	2	3	3

COURSE->PSO MAPPING - AU010802 - Operations Management

AU010802/PSO	PSO1	PSO2	PSO3	PSO4
	2	2	3	2

AU010804

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010804	ELECTIVE III	4-0-0:4	2010

COURSE END SURVEY - AU010804 - ELECTIVE III**CO->PO MAPPING - AU010804 - ELECTIVE III**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU010804 - ELECTIVE III

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - AU010804 - ELECTIVE III

AU010804/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010804 - ELECTIVE III

AU010804/PSO	PSO1	PSO2	PSO3	PSO4

AU010805

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010805	ELECTIVE IV	4-0-0:4	2010

COURSE END SURVEY - AU010805 - ELECTIVE IV**CO->PO MAPPING - AU010805 - ELECTIVE IV**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU010805 - ELECTIVE IV

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - AU010805 - ELECTIVE IV

AU010805/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010805 - ELECTIVE IV

AU010805/PSO	PSO1	PSO2	PSO3	PSO4

AU010807

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010807	Project	0-0-0:0	2014

No.	Course Outcome - AU010807 - Project	Target
CO1	develop plans with relevant people to achieve the projects goals	50%
CO2	break work down into tasks and determine handover procedures	50%
CO3	identify links and dependencies, and schedule to achieve deliverables	50%
CO4	estimate and cost the human and physical resources required, and make plans to obtain the necessary resources	50%

CO5	allocate roles with clear lines of responsibility and accountability.	50%
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COURSE END SURVEY - AU010807 - Project

Sl.No	Questions & Options	
CO1	CO2	how effectively you have planned project objectives and divided tasks among the group members
Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>		
CO3	On a scale of 4, How effectively you managed time and learned to follow the schedule	
	Answer Choice- <i>5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5</i>	
CO4	How effectively you learned time and miney management	
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>	
CO5	How effectively you managed documentation and project progress tracking	
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>	

CO->PO MAPPING - AU010807 - Project

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1							2	3			
CO2	2		3	2							2	
CO3												3
CO4			2			2		1				2
CO5					2	2						

CO->PSO MAPPING - AU010807 - Project

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	2	
CO2	2		2	
CO3				2
CO4	2			

CO5			2	
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COURSE->PO MAPPING - AU010807 - Project

AU010807/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2		3	2	2	2		2	3		2	3

COURSE->PSO MAPPING - AU010807 - Project

AU010807/PSO	PSO1	PSO2	PSO3	PSO4
	2	2	2	2

AU010804L02

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010804L02	Engineering Economics and Cost Estimation	4-0-0:4	2010

COURSE END SURVEY - AU010804L02 - Engineering Economics and Cost Estimation**CO->PO MAPPING - AU010804L02 - Engineering Economics and Cost Estimation**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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CO->PSO MAPPING - AU010804L02 - Engineering Economics and Cost Estimation

CO/PSO	PSO1	PSO2	PSO3	PSO4
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COURSE->PO MAPPING - AU010804L02 - Engineering Economics and Cost Estimation

AU010804L02/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU010804L02 - Engineering Economics and Cost Estimation

AU010804L02/PSO	PSO1	PSO2	PSO3	PSO4

AU010803

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010803	Special Types of Vehicles	0-0-0:0	2014

No.	Course Outcome - AU010803 - Special Types of Vehicles	Target
CO1	Describe various earthmoving equipments and its applications	55%
CO2	Define Lift technology and types of cranes	55%
CO3	Gain knowledge and research in tractor and its attachments	50%
CO4	Calculation of load carrying capacity and other expense calculation of machineries	50%

CO5	Define the difference and similarity of special type of vehicles with ordinary vehicles	50%
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COURSE END SURVEY - AU010803 - Special Types of Vehicles

Sl.No	Questions & Options
CO1	Are you able to understand the different earth moving equipments and their applications
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO2	whether your understanding on fork lifts and cranes helpful for practical applications ?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO3	Whether the knowledge gained in tractor and its attachments helpful for practical applications ?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO4	Are you able to calculate the load carrying capacity of the special machinery given ?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO5	Are you able to identify the technical similarity and difference between special types of vehicles and normal vehicles ?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>

CO->PO MAPPING - AU010803 - Special Types of Vehicles

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		3	3		2							
CO2	3	1	1				2					
CO3	3	3				2						
CO4		2	1						1			
CO5	2	3		1			2					

CO->PSO MAPPING - AU010803 - Special Types of Vehicles

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1	1		1
CO2	1	1	1	1
CO3	1	1	1	1
CO4	1	1	1	
CO5	1	1	1	

COURSE->PO MAPPING - AU010803 - Special Types of Vehicles

AU010803/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	1	2	2	2		1			

COURSE->PSO MAPPING - AU010803 - Special Types of Vehicles

AU010803/PSO	PSO1	PSO2	PSO3	PSO4
	1	1	1	1

AU010804L01

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010804L01	Elective III (Transort Refrigeration and Air Conditioning)	0-0-0:0	2014

No.	Course Outcome - AU010804L01 - Elective III (Transort Refrigeration and Air Conditioning)	Target
CO1	Explain the fundamentals of air conditioning and refrigeration, air conditioning systems, components.	80%
CO2	Describe design considerations, heating and cooling load calculations.	80%
CO3	Describe air distribution system for automobiles and their impact on load calculations.	80%
CO4	Explain air handling systems and air conditioning control.	80%
CO5	Explain air conditioning fault diagnostics, maintenance and service	80%

COURSE END SURVEY - AU010804L01 - Elective III (Transort Refrigeration and Air Conditioning)

Sl.No	Questions & Options
CO1	To what extend you are able to identify the fundamentals of air conditioning and refrigeration, air conditioning systems, components.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO2	To what extend you are able to describe the fundamentals of air conditioning and refrigeration, air conditioning systems, components.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	To what extend you are able to describe about air distribution system for automobiles and their impact on load calculations.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extend you are able to explain about air handling systems and air conditioning control.
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO5	To what extent you are able explain about the air conditioning fault diagnostics, maintenance and service
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - AU010804L01 - Elective III (Transort Refrigeration and Air Conditioning)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2		1		2						

CO2	3	1	1		3							
CO3	2	1		3	2							
CO4		1	2		1							
CO5	1			3								

CO->PSO MAPPING - AU010804L01 - Elective III (Transort Refrigeration and Air Conditioning)

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - AU010804L01 - Elective III (Transort Refrigeration and Air Conditioning)

AU010804L01/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	2	3	3	2						

COURSE->PSO MAPPING - AU010804L01 - Elective III (Transort Refrigeration and Air Conditioning)

AU010804L01/PSO	PSO1	PSO2	PSO3	PSO4

AU010805G03

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010805G03	Elective IV (Farm Machinery and Equipments)	0-0-0:0	2014

No.	Course Outcome - AU010805G03 - Elective IV (Farm Machinery and Equipments)	Target
CO1	Gain knowledge and research in tractor and its attachments	50%
CO2	Define and explain the purpose of special types of vehicles used in daily scenario	55%
CO3	Define various spraying machineries and special equipments	50%
CO4	Describe various earthmoving equipments and its applications	50%
CO5	Calculation of load carrying capacity and other expense calculation of machineries	55%

COURSE END SURVEY - AU010805G03 - Elective IV (Farm Machinery and Equipments)

Sl.No	Questions & Options
CO1	Whether you understood the scope and functioning of various attachments used in farm tractors?

	Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>
CO2	Are you able to explain the purpose of a special type vehicle which is given to you?
	Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>
CO3	To what extent you can define the purpose and working of a spraying machinery?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO4	Rate the level of understanding about various earth moving equipment?
	Answer Choice- <i>Most acceptable/Moderately Acceptable Acceptable/Less acceptable/Not acceptable</i>
CO5	To what level you are able to calculate the load carrying capacity of any farm equipment?
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - AU010805G03 - Elective IV (Farm Machinery and Equipments)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1			2		3		2			2	3	1
CO2	2		3	1	3	3	2		2		3	3
CO3		1	3	3	3						1	
CO4	1		3		3	1	3			3		1
CO5	3	3	2	1	3		1			1		3

CO->PSO MAPPING - AU010805G03 - Elective IV (Farm Machinery and Equipments)

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	1	3	1
CO2	1	3	1	1
CO3	1	3	3	1
CO4	1	1	3	1
CO5	1	1	1	1

COURSE->PO MAPPING - AU010805G03 - Elective IV (Farm Machinery and Equipments)

AU010805G03/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3	3		2	3	3	3

COURSE->PSO MAPPING - AU010805G03 - Elective IV (Farm Machinery and Equipments)

AU010805G03/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	1

AU010806

Course Code	Course Name	L-T-P:C	Year of Introduction
AU010806	Auto Workshop III	0-0-0:0	2014

No.	Course Outcome - AU010806 - Auto Workshop III	Target
CO1	To familiarize the constructional details and testing methods of lead acid battery	60%
CO2	To familiarize the constructional details and working of alternator	60%
CO3	To understand the wiring of starting circuit	60%
CO4	To familiarize and design the various ignition circuits in automobiles	60%
CO5	To understand the working principle and to calibrate various sensors in automobiles	60%
CO6	To familiarize 8085 micro-controller programming	60%

COURSE END SURVEY - AU010806 - Auto Workshop III

Sl.No	Questions & Options
CO1	To what extent are you able to test the condition of a lead acid battery?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extent are you able to identify the various components in an alternator and to troubleshoot problems in them?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	How well can you troubleshoot a problem associated with the starting circuit?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	How do you rate your understanding about the various ignition systems in automobiles?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extent can you calibrate a new sensor and obtain correct measurement from them?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO6	How strong are you in 8085 assembly language programming?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - AU010806 - Auto Workshop III

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1				2								
CO2	1			2								
CO3		1										
CO4	1			2								

CO5	1											
CO6					3							

CO->PSO MAPPING - AU010806 - Auto Workshop III

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	1		1	
CO2	1	1	1	
CO3	1			
CO4		1		
CO5		1		
CO6		1		

COURSE->PO MAPPING - AU010806 - Auto Workshop III

AU010806/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	1	1		2	3							

COURSE->PSO MAPPING - AU010806 - Auto Workshop III

AU010806/PSO	PSO1	PSO2	PSO3	PSO4
	1	1	1	

AU402

Course Code	Course Name	L-T-P:C	Year of Introduction
AU402	Two and Three Wheelers	3-0-0:3	2016

No.	Course Outcome - AU402 - Two and Three Wheelers	Target
CO1	Describe basic technologies used in two wheeler designs	60%
CO2	Evaluate various manufacturing processes used in two and three wheeler manufacturing	60%
CO3	Analyse various systems of small automobiles and their operation	60%
CO4	Demonstrate the suspension and comfort systems of two and three wheelers	60%
CO5	Illustrate balancing methods used in two wheelers and describe their concepts	60%
CO6	Design body and various other systems used in two and three wheelers	60%

COURSE END SURVEY - AU402 - Two and Three Wheelers

Sl.No	Questions & Options
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CO1	The extent of understanding of basic structure of a two wheeler
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	Ability to explain various manufacturing processes used in two wheeler manufacturing
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	The beneficiary can identify and rectify any complaints regarding two wheelers
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO4	The working and construction of the suspension is clearly understood
	Answer Choice- <i>Strongly Agree/Agree/Neutral Disagree/Strongly disagree</i>
CO5	Extent of knowledge in balancing of two wheelers
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO6	Extent of knowledge in various systems of two wheelers
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>

CO->PO MAPPING - AU402 - Two and Three Wheelers

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1			3		2	1	3	2	3			2
CO2	1	1	3	1	3	1	2	1		1		3
CO3	2	1	2		3	3	1		1	2		2
CO4	1		3	1	1	1	3	2	1			3
CO5	2	3	3	1	1		2					1
CO6	2	3	1	3	2		1	1				2

CO->PSO MAPPING - AU402 - Two and Three Wheelers

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	2	3	3
CO2	3	2	1	1
CO3	3	2	3	2
CO4	2	3	3	3
CO5	1	2	3	3
CO6	2	3	2	2

COURSE->PO MAPPING - AU402 - Two and Three Wheelers

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

AU402/PO	2	3	3	3	3	3	3	2	3	2		3
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COURSE->PSO MAPPING - AU402 - Two and Three Wheelers

AU402/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	3

AU404

Course Code	Course Name	L-T-P:C	Year of Introduction
AU404	Engine And Vehicle Management Systems	3-0-0:3	2016

No.	Course Outcome - AU404 - Engine And Vehicle Management Systems	Target
CO1	To understand the basics of control system in automobile	70%
CO2	To understand various engine parameters and its control	70%
CO3	To understand the control aspects in fuel injection system	70%
CO4	To analyse the effect of spark timing in engine performance	70%
CO5	To familiarise the working of electronic transmission control	70%
CO6	To familiarise the working of modern vehicle management systems	70%

COURSE END SURVEY - AU404 - Engine And Vehicle Management Systems

Sl.No	Questions & Options
CO1	To what extend you are able to apply the concept of control systems in automobile systems
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extend you are able to understand various engine parameters and its control
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	To what extend you are able to understand the fuel injection system
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO4	To what extend you are able to analyse the effect of spark timing in engine performance
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	To what extend you familiarized the working of electronic transmission control
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO6	To what extend you will be able to describe the working model of modern vehicle management systems
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>

CO->PO MAPPING - AU404 - Engine And Vehicle Management Systems

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1											
CO2				2								
CO3							1					
CO4								1				
CO5	1											
CO6	1											

CO->PSO MAPPING - AU404 - Engine And Vehicle Management Systems

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2			
CO2	2			
CO3	1			
CO4	1			
CO5			1	
CO6		2		

COURSE->PO MAPPING - AU404 - Engine And Vehicle Management Systems

AU404/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	1			2			1	1				

COURSE->PSO MAPPING - AU404 - Engine And Vehicle Management Systems

AU404/PSO	PSO1	PSO2	PSO3	PSO4
	2	2	1	

IE488

Course Code	Course Name	L-T-P:C	Year of Introduction
IE488	Total quality management	3-0-0:3	2016

No.	Course Outcome - IE488 - Total quality management	Target
CO1	Illustrate the need and requirement of quality	65%
CO2	Analyze the application and after-effects of quality management in view of sustainability of the product	60%
CO3	Evaluate the applications and implications of quality assurance in a work place	65%

CO4	Create an awareness on the methodology adopted for the quality planning and its implications	60%
CO5	Apply different tools and methodologies adopted for Quality assurance	60%
CO6	Describe the different international and Indian standards for quality assurance	70%

COURSE END SURVEY - IE488 - Total quality management

Sl.No	Questions & Options
CO1	Are you capable of identifying the requirement of quality?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO2	Will you be able to make a product sustainable by imparting quality assurance?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO3	Can you convey the importance of quality assurance to a third person?
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO4	Can you create your own quality planning for a product?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO5	Are you able to successfully apply the tools for obtaining the quality assurance of a product?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO6	Are you able to understand the different rules prevailing in different parts of the world for quality assurance?
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - IE488 - Total quality management

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	2	1	1	2	2		1		2	1
CO2		2			1		2		3		1	1
CO3	1		2		3		1	1		2		3
CO4	2		1	1		3	2		3		2	1
CO5	2		3	2			2		1		2	3
CO6	1		2		1		3		1		3	2

CO->PSO MAPPING - IE488 - Total quality management

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	2		1
CO2		2	1	
CO3	1			2

CO4		3	2	1
CO5	2		2	1
CO6	1		2	1

COURSE->PO MAPPING - IE488 - Total quality management

IE488/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	2	3	2	3	3	3	1	3	2	3	3

COURSE->PSO MAPPING - IE488 - Total quality management

IE488/PSO	PSO1	PSO2	PSO3	PSO4
	2	3	2	2

ME482

Course Code	Course Name	L-T-P:C	Year of Introduction
ME482	Energy Conservation and Management	3-0-0:3	2016

No.	Course Outcome - ME482 - Energy Conservation and Management	Target
CO1	Demonstrate energy auditing methodologies and procedures for energy savings	60%
CO2	Analyze energy utilization systems from a perspective of supply and demand.	60%
CO3	Apply knowledge of energy conservation opportunities in a range of thermal utilities	60%
CO4	Design and develop innovative energy efficient solutions for electrical utilities	60%
CO5	Demonstrate competence in energy auditing techniques and energy conservation planning and practices	60%
CO6	Evaluate the techno-economic feasibility of an adopted energy conservation technique	60%

COURSE END SURVEY - ME482 - Energy Conservation and Management

Sl.No	Questions & Options
CO1	How much your are familiar with the energy auditing methodologies and procedures for energy savings
	Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>
CO2	Are you able to analyse energy utilization systems from a perspective of supply and demand
	Answer Choice- <i>Excellent/Very Good/Good/Satisfactory/Poor</i>
CO3	To what extent you can apply energy conservation opportunities to thermal utilities
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
	Can you design and develop innovative energy efficient solutions for electrical utilities

CO4	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO5	How far you are competent in energy auditing techniques and energy conservation planning and practices
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO6	Can you evaluate the techno-economic feasibility of an adopted energy conservation technique
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>

CO->PO MAPPING - ME482 - Energy Conservation and Management

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	1	1		2	3	2	2	2	2
CO2		1	2	1	1	2	3	3	3	3	2	2
CO3		2	1	2	3	3	2	2	2	3	1	
CO4	2	1	2		3			2	2	2	2	2
CO5	2	2	3	3		3	2	1	2	1	2	
CO6	2		1	2	1		1	3	3	1	1	

CO->PSO MAPPING - ME482 - Energy Conservation and Management

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	2	2	2	1
CO3	2	2	2	2
CO4	2	2	2	2
CO5	2	3	1	2
CO6	2	1	2	2

COURSE->PO MAPPING - ME482 - Energy Conservation and Management

ME482/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3	3	3	3	3	2	2

COURSE->PSO MAPPING - ME482 - Energy Conservation and Management

ME482/PSO	PSO1	PSO2	PSO3	PSO4
	2	3	3	2

AU492

Course Code	Course Name	L-T-P:C	Year of Introduction
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AU492	Project	0-0-9:6	2016
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No.	Course Outcome - AU492 - Project	Target
CO1	Analyse a current topic of professional interest and present it before an audience	68%
CO2	Develop creative thinking in finding viable solutions to engineering problems	70%
CO3	Apply knowledge gained in solving real life engineering problems	68%
CO4	Think innovatively on the development of components, products, processes or technologies in engineering field	60%
CO5	Build confidence to carry out research and make presentation on a specified topic.	60%

COURSE END SURVEY - AU492 - Project

Sl.No	Questions & Options
CO1	Ability to figure out the problem before a specified audience
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>
CO2	choosing a feasible solution for the presented problem
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	Applying a practical solution for existing problem
	Answer Choice- <i>Very advanced/Advanced/Proficient/Basic/ Minimal</i>
CO4	suggesting a final solution for the existing problem
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO5	Ability to present the solution in front of an expert panel
	Answer Choice- <i>Very high degree/High Degree/Moderate degree/Small Degree/Not at all</i>

CO->PO MAPPING - AU492 - Project

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												
CO5												

CO->PSO MAPPING - AU492 - Project

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1				

CO2				
CO3				
CO4				
CO5				

COURSE->PO MAPPING - AU492 - Project

AU492/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU492 - Project

AU492/PSO	PSO1	PSO2	PSO3	PSO4

AU492

Course Code	Course Name	L-T-P:C	Year of Introduction
AU492	Project	0-0-0:6	2016

COURSE END SURVEY - AU492 - Project**CO->PO MAPPING - AU492 - Project**

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - AU492 - Project

CO/PSO	PSO1	PSO2	PSO3	PSO4

COURSE->PO MAPPING - AU492 - Project

AU492/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - AU492 - Project

AU492/PSO	PSO1	PSO2	PSO3	PSO4

AU472

Course Code	Course Name	L-T-P:C	Year of Introduction
AU472	Metrology and Instrumentation	3-0-0:3	2016

No.	Course Outcome - AU472 - Metrology and Instrumentation	Target
CO1	Demonstrate the basic principles of metrology	72%
CO2	Evaluate the components of different gauges used for measurements	63%

CO3	Apply different methodologies for measuring surface finish of a component	67%
CO4	Evaluate the latest developments in checking components of measuring systems	67%
CO5	Demonstrate different methods for mechanical measurements	63%
CO6	Carry out measurement of of pressure and vibration in a system	63%

COURSE END SURVEY - AU472 - Metrology and Instrumentation

Sl.No	Questions & Options
CO1	Are you able to understand the importance of metrology in present industrial scenario?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO2	Can you check the component with the drawing and identify the gauges required?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO3	Can you identify the instrument required for the checking of surface finish of a component?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>
CO4	Can you identify the components which will be requiring the latest measuring techniques?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO5	Can you identify the measurements other than dimensions of a component, based on the application?
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO6	Can you identify whether a component require vibration check or pressure check based on its application?
	Answer Choice- <i>Very frequently/Frequently/Rarely Very rarely/Never</i>

CO->PO MAPPING - AU472 - Metrology and Instrumentation

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	3	1			1		3		2	
CO2	2	3			1	3		3			1	2
CO3	1		3		3	2			1		2	1
CO4	2		1	1		2	2	1		1		1
CO5		3			1	3		1		1	1	2
CO6	2		3		1	3		2		1	2	3

CO->PSO MAPPING - AU472 - Metrology and Instrumentation

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	2	3
CO2	2	1	3	2

CO3	1	1	2	2
CO4	3	1		2
CO5	2		1	3
CO6	3		2	2

COURSE->PO MAPPING - AU472 - Metrology and Instrumentation

AU472/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	3	3	1	3	3	2	3	3	1	2	3

COURSE->PSO MAPPING - AU472 - Metrology and Instrumentation

AU472/PSO	PSO1	PSO2	PSO3	PSO4
	3	2	3	3

AU464

Course Code	Course Name	L-T-P:C	Year of Introduction
AU464	Special Type of Vehicles	3-0-0:3	2016

No.	Course Outcome - AU464 - Special Type of Vehicles	Target
CO1	Understand basic theory and working of undercarriages, including steering mechanisms, suspension systems of tracked and wheeled vehicles	60%
CO2	Understand working and types of PTO and hydraulics of these typical classes of vehicles.	60%
CO3	Understand the fundamentals of excavation equipments like diggers and shovels, surface levelling and finishing machines like graders, their types and management in the real time	65%
CO4	Understand how haulage vehicles are used and which type is best for a selected job. Also usage of lift trucks in material handling with attachments	60%
CO5	Understand how different types of cranes are working and how to select one for a particular job	60%
CO6	Understand how scraping machines operates, applications of dozing machines and blades used to it, and how front end loaders use their buckets to fill or haul loads	60%

COURSE END SURVEY - AU464 - Special Type of Vehicles

Sl.No	Questions & Options
CO1	Are you able to Understand basic theory and working of undercarriages, including steering mechanisms, suspension systems of tracked and wheeled vehicles Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO2	How much the section was helpful in understanding the working and types of PTO and hydraulics of these typical classes of vehicles.

	Answer Choice- <i>Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful</i>
CO3	Is your fundamentals on CLO[2] Understand the fundamentals of excavation equipments like diggers and shovels, surface levelling and finishing machines like graders, their types and management in the real time clear
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO4	Are you able to understand how haulage vehicles are used and which type is best for a selected job. Also usage of lift trucks in material handling with attachments
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO5	Are you able to understand how different types of cranes are working and how to select one for a particular job
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>
CO6	Are you able to understand how scraping machines operates, applications of dozing machines and blades used to it, and how front end loaders use their buckets to fill or haul loads
	Answer Choice- <i>Always/Very often/Sometimes/Rarely/Never</i>

CO->PO MAPPING - AU464 - Special Type of Vehicles

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	2	2	2	1	3	2	1	1	2	2
CO2	1	2	2	1	1	3	2	1	2	3	3	3
CO3	1	2	2	2	3	3	3	2	1	2	1	3
CO4	2	1	2	1	2	3	1	3	2	2	2	3
CO5	2	1	2	3	1	3	2	3	1	2	2	3
CO6	2	2	3	1	3	1	1	2	2	1	3	2

CO->PSO MAPPING - AU464 - Special Type of Vehicles

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	3	3	1	3
CO2	3	3	2	2
CO3	3	2	1	3
CO4	3	2	1	3
CO5	2	3	1	2
CO6	2	2	3	2

COURSE->PO MAPPING - AU464 - Special Type of Vehicles

AU464/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	2	3	3	3	3	3	3	2	3	3	3

COURSE->PSO MAPPING - AU464 - Special Type of Vehicles

AU464/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	3

AU462

Course Code	Course Name	L-T-P:C	Year of Introduction
AU462	Vehicle Maintenance	3-0-0:3	2016

No.	Course Outcome - AU462 - Vehicle Maintenance	Target
CO1	To impart knowledge on type of maintenance	62%
CO2	To impart knowledge on maintenance and servicing of chassis	62%
CO3	To impart knowledge engine overhauling and repairing	62%
CO4	To learn about Vehicle body repair and maintenance	62%
CO5	To impart knowledge on Maintenance of auxiliaries and maintenance of new generation vehicles	62%

COURSE END SURVEY - AU462 - Vehicle Maintenance

Sl.No	Questions & Options
CO1	how far you have been able to learn the different types of maintenance
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO2	To what extend you understand the maintenance and servicing of automobile chassis
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO3	How far this course has helped you to impart knowledge engine overhauling and repairing
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO4	How far this course has helped you to impart knowledge on vehicle repair and maintenance
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>
CO5	How far this course has helped you to impart knowledge on Maintenance of auxiliaries and maintenance of new generation vehicles
	Answer Choice- <i>Excellent/Very Good/Good/Fair/Poor</i>

CO->PO MAPPING - AU462 - Vehicle Maintenance

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	3	1	3	2	3	2	2	2	3	3
CO2	3	2	3	1	3	2	3	3	2	2	2	2

CO3	2	3	2	2	2	1	3	3	2	3	3	1
CO4	2	1	3	3	3	1	2	3	1	3	1	2
CO5	3	3	3	3	2	2	1	2	1	3	3	3

CO->PSO MAPPING - AU462 - Vehicle Maintenance

CO/PSO	PSO1	PSO2	PSO3	PSO4
CO1	2	3	1	3
CO2	3	2	3	2
CO3	1	3	2	2
CO4	3	3	2	1
CO5	3	3	2	2

COURSE->PO MAPPING - AU462 - Vehicle Maintenance

AU462/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	2	3	3	2	3	3	3

COURSE->PSO MAPPING - AU462 - Vehicle Maintenance

AU462/PSO	PSO1	PSO2	PSO3	PSO4
	3	3	3	3

CONTINUOUS IMPROVEMENT IMPLEMENTED

Measures identified & Implemented Via AddOn, Bridge, MOOC, Conference, Workshop, Internship & Project

No	Course	Type
1	Auto Chassis	Remedial Course
2	Extra Class for S3 LET Students	Remedial Course
3	Extra Class for S3 LET Students	Remedial Course
4	Auto Chassis	Remedial Course
5	Automobile Chassis	Remedial Course
6	Mechanics of Solids	Remedial Course
7	Training on Two Wheeler Technology	Add-on Course
8	Training on Two Wheeler Technology	Add-on Course

Auto Chassis

Type:	Remedial Course
Details	As the exams are delayed, refresher course for students
Mode of Instruction:	Online Live Class
Staff(s) Associated	Sree Ram H
Course(s) Associated	MUT203 - Auto Chassis

Extra Class for S3 LET Students

Type:	Remedial Course
Details	Remedial class for LET students
Mode of Instruction:	Lecture, Tutorial
Staff(s) Associated	Jinson Paul
Course(s) Associated	MUT201 - FLUID MECHANICS AND MACHINERY

Extra Class for S3 LET Students

Type:	Remedial Course
Details	Extra class for LET students
Mode of Instruction:	Lecture, Tutorial
Staff(s) Associated	Jinson Paul

Course(s) Associated	MUT201 - FLUID MECHANICS AND MACHINERY
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Auto Chassis

Type:	Remedial Course
Details	For supporting the students with supplementary
Mode of Instruction:	Online Live Class
Staff(s) Associated	Sree Ram H
Course(s) Associated	AU203 - Auto Chassis

Automobile Chassis

Type:	Remedial Course
Details	For supplementary students
Mode of Instruction:	Online Live Class
Staff(s) Associated	Sree Ram H
Course(s) Associated	AU205 - AUTOMOTIVE CHASSIS

Mechanics of Solids

Type:	Remedial Course
Details	For supplementary students
Mode of Instruction:	Online Live Class
Staff(s) Associated	Tony Varghese Sree Ram H
Course(s) Associated	ME201 - Mechanics of Solids

Training on Two Wheeler Technology

Type:	Add-on Course
Details	Royal Enfield Certified training
Mode of Instruction:	Demonstration, Group Activities, Tutorial
Staff(s) Associated	A M Sabu Nibin George Sree Ram H Alfred Mathew Sarath C S
Course(s) Associated	AU206 - Auto Transmission AU234 - Vehicle Systems Lab

Training on Two Wheeler Technology

Type:	Add-on Course
Details	Royal Enfield Certified training
Mode of Instruction:	Demonstration, Group Activities, Tutorial
Staff(s) Associated	A M Sabu Sree Ram H
Course(s) Associated	AU206 - Auto Transmission AU234 - Vehicle Systems Lab