



EASA COLLEGE

OF ENGINEERING & TECHNOLOGY (ECET)

ULTIMATE DESTINATION FOR TECHNICAL EXCELLENCE

APPROVED BY AICTE, NEW DELHI | AFFILIATED TO ANNA UNIVERSITY, CHENNAI

NH - 47, PALAKKAD MAIN ROAD, NAVAKKARAI (P.O), COIMBATORE, TAMIL NADU - 641105

Regulations 2017

Course Outcome Statements

Programme: B.E. Mechanical Engineering	
Year & Semester:	I & I
Course Code & Name:	C101&HS8151-Communicative English
Year of Study :	2017 – 2018

Course Code and Name : C101 & HS8151-Communicative English		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C101.1	Enable the development in sharing information about family and friends.	K3
C101.2	Strengthen general comprehending skills and present lucid skills in free writing.	K2
C101.3	Understand the basic grammar techniques and utilize it in enhancing language development.	K2
C101.4	Foster an environment for reading and develop good language skills.	K2
C101.5	Develop flair for any kind of writing with rich vocabulary and proper syntax.	K2

Programme: B.E. Mechanical Engineering	
Year & Semester:	I & I
Course Code & Name:	C102 & MA8151-Engineering Mathematics -1
Year of Study :	2017 – 2018

Course Code and Name :C102 & MA8151-Engineering Mathematics -1		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C102.1	Use both the limit definition and rules of differentiation to differentiate functions	K3
C102.2	Apply differentiation to solve maxima and minima problems.	K3
C102.3	Evaluate integrals both by using Riemann sums and by using the Fundamental Theorem of Calculus. Apply techniques of integration to compute multiple integrals and evaluate convergent improper Integrals	K3
C102.4	Apply integration to compute multiple integrals, area, volume, integrals in polar coordinates, in addition to change of order and change of variables.	K3
C102.5	Apply various techniques in solving differential equations	K3



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Programme: B.E. Mechanical Engineering	
Year & Semester:	I & I
Course Code & Name:	C103 & PH8151- Engineering Physics
Year of Study :	2017 – 2018

Course Code and Name :C103 & PH8151- Engineering Physics		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C103.1	Gain knowledge on the basics of properties of matter and its applications.	K2
C103.2	Acquire knowledge on the concepts of waves and optical devices and their application in fiber optics	K2
C103.3	Have adequate knowledge on the concepts of thermal properties of material and their in application in expansion joints and heat exchanger.	K3
C103.4	Got knowledge on advanced physics concepts of quantum theory and its applications in tunneling microscope.	K2
C103.5	Understand the basics of crystals, their structures and different crystal growth technique.	K2

Programme: B.E. Mechanical Engineering	
Year & Semester:	I & I
Course Code & Name:	C104 & CY8151- Engineering Chemistry
Year of Study :	2017 – 2018

Course Code and Name : C104 & CY8151- Engineering Chemistry		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C104.1	Understand about various water treatment technique and its uses.	K4
C104.2	Know the surface phenomena of molecules and its applications	K2
C104.3	Understand the phase diagram and predict the composition of alloys.	K2
C104.4	Analyze the quality of fuels and its various uses. Gain the knowledge about energy sources and its applications.	K4
C104.5	Gain the knowledge about energy sources and its applications.	K2



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Programme: B.E. Mechanical Engineering	
Year & Semester:	I & I
Course Code & Name:	C105 & GE8151-Problem solving and python programming
Year of Study :	2017 – 2018

Course Code and Name : C105 & GE8151-Problem solving and python programming		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C105.1	Develop algorithmic solutions to simple computational problems	K4
C105.2	Read, write, execute by hand simple Python programs and Structure simple Python programs for solving problems.	K4
C105.3	Decompose a Python program into functions.	K3
C105.4	Represent compound data using Python lists, tuples, dictionaries.	K3
C105.5	Read and write data from/to files in Python Programs.	K2

Programme: B.E. Mechanical Engineering	
Year & Semester:	I & I
Course Code & Name:	C106 & GE8152- Engineering graphics
Year of Study :	2017 – 2018

Course Code and Name : C106 & GE8152- Engineering graphics		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C106.1	Familiarize with fundamentals and standards of engineering graphics	K2
C106.2	Perform freehand sketching of basic geometrical constructions and multiple view of objects	K3
C106.3	Project orthographic projections of lines and planer surfaces	K2
C106.4	Draw projections of solids and development of surfaces	K3
C106.5	Visualize and to project isometric and perspective sections of simple solids.	K3



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Programme: B.E. Mechanical Engineering	
Year & Semester:	I & I
Course Code & Name:	C107 & GE8161-Problem solving and python programming laboratory
Year of Study :	2017 – 2018

Course Code and Name :C107 & GE8161-Problem solving and python programming laboratory		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C107.1	Write , test and debug simple python programs	K1
C107.2	Implement python programs with conditional and loops.	K3
C107.3	Develop python program step-wise by defining functions and calling them.	K4
C107.4	Use python list, tuples dictionaries for representing compound date.	K3
C107.5	Read and write the data from/ to files in pythons	K2

Programme: B.E. Mechanical Engineering	
Year & Semester:	I & I
Course Code & Name:	C108 & BS8161-Physics and chemistry laboratories
Year of Study :	2017 – 2018

Course Code and Name :C108 & BS8161-Physics and chemistry laboratories		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C108.1	Determine Young's modulus of beam and Rigidity modulus.	K3
C108.2	Apply the principle of optics and Laser in engineering field	K3
C108.3	Calculate conductivity, and band gap of a semiconductor and velocity of sound waves.	K3
C108.4	Analysis the effect of chlorides in water DO present in sample water	K3
C108.5	Identify basicity , acidity and pH of the material	K2



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Programme: B.E. Mechanical Engineering	
Year & Semester:	I & II
Course Code & Name:	C109 & HS8251- Technical English
Year of Study :	2017 – 2018

Course Code and Name :C109 & HS8251- Technical English		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C109.1	Breakdown the ideas in to its elementary constituents, analyze and act after a meaning full thought process.	K2
C109.2	Analyze the phrase and passage and explicitly pass on the ideas meaning fully.	K3
C109.3	Manage to interpret the given phrase or the graphical rendering and review the contents well individually or as a group.	K3
C109.4	Concentrate on the communication aspect of complicated ideas and respond positively.	K2
C109.5	Debate the issues and find the rudiments of the problem individually and as a group.	K2

Programme: B.E. Mechanical Engineering	
Year & Semester:	I & II
Course Code & Name:	C110 & MA8251- Engineering Mathematics – II
Year of Study :	2017 – 2018

Course Code and Name :C110 & MA8251- Engineering Mathematics – II		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C110.1	Understand Eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices.	K2
C110.2	Understand Gradient, divergence and curl of a vector point function and related identities	K2
C110.3	Evaluation of line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification.	K2
C110.4	Understand Analytic functions, conformal mapping and complex integration.	K2
C110.5	Understand Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.	K2



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Programme: B.E. Mechanical Engineering	
Year & Semester:	I & II
Course Code & Name:	C111 & PH8252- Materials Science
Year of Study :	2017 – 2018

Course Code and Name : C111 & PH8252- Materials Science		
Course Code	CO Statements	Knowledge Level
The students will have		
C111.1	Knowledge on the various phase diagrams and their applications	K2
C111.2	Acquire knowledge on Fe-Fe ₃ C phase diagram, various microstructures and alloys	K2
C111.3	Get knowledge on mechanical properties of materials and their measurement	K3
C111.4	Gain knowledge on magnetic, dielectric and superconducting properties of materials	K1
C111.5	Understand the basics of ceramics, composites and nanomaterials	K2

Programme: B.E. Mechanical Engineering	
Year & Semester:	I & II
Course Code & Name:	C112 & BE8253-Basics Electrical & Electronics & Instrumentation Engineering
Year of Study :	2017 – 2018

Course Code and Name : C112 & BE8253-Basics Electrical & Electronics & Instrumentation Engineering		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C112.1	Understand electric circuits and its parameters	K2
C112.2	Understand AC electrical circuits and its parameters	K2
C112.3	Understand the working principles of electrical machines	K2
C112.4	Understand the concepts of various electronic devices	K2
C112.5	Choose appropriate instruments for electrical measurement for a specific application	K3



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Programme: B.E. Mechanical Engineering	
Year & Semester:	I & II
Course Code & Name:	C113 & GE8291-Environmental Science And Engineering
Year of Study :	2017 – 2018

Course Code and Name : C113 & GE8291-Environmental Science And Engineering		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C113.1	Realize the nature and facts of environment and bio-diversity.	K1
C113.2	Understand the Environmental Pollution (Causes, Effects and Control Measures)	K2
C113.3	Identify various natural recourses and save nature.	K2
C113.4	Inference on Social issues and the Environment.	K2
C113.5	Understand the population and technological effects on environment.	K2

Programme: B.E. Mechanical Engineering	
Year & Semester:	I & II
Course Code & Name:	C114 & GE8292-Engineering Mechanics
Year of Study :	2017 – 2018

Course Code and Name :C114 & GE8292-Engineering Mechanics		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C114.1	Illustrate the vectorial and scalar representation of forces and moments	K2
C114.2	Analyse the rigid body in equilibrium	K3
C114.3	Evaluate the properties of surfaces and solids	K3
C114.4	Calculate dynamic forces exerted in rigid body	K3
C114.5	Determine the friction and the effects by the laws of friction	K3



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Programme: B.E. Mechanical Engineering	
Year & Semester:	I & II
Course Code & Name:	C115 & GE8261- Engineering Practices Laboratory
Year of Study :	2017 – 2018

Course Code and Name : C115 & GE8261- Engineering Practices Laboratory		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C115.1	Fabricate carpentry components and pipe connections including plumbing works and Use welding equipments to join the structures.	K3
C115.2	Carry out the basic machining operations and Make the models using sheet metal works	K3
C115.3	Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundary and fittings.	K3
C115.4	Carry out basic home electrical works and appliances and Measure the electrical quantities	K3
C115.5	Elaborate on the components, gates, soldering practices.	K3

Programme: B.E. Mechanical Engineering	
Year & Semester:	I & II
Course Code & Name:	C116 & BE8261- Basic Electrical, Electronics and Instrumentation Engineering laboratory
Year of Study :	2017 – 2018

Course Code and Name : C116 & BE8261- Basic Electrical, Electronics and Instrumentation Engineering laboratory		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C116.1	Determine the load characteristic of different electrical machines.	K4
C116.2	Verify the electrical laws and theorems in circuits.	K4
C116.3	Design simple circuits involving diodes.	K4
C116.4	Design simple circuits involving transistors.	K4
C116.5	Use of electrical tools for the measure of Mechanical Parameters.	K4



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Programme: B.E. Mechanical Engineering	
Year & Semester:	II & III
Course Code & Name:	C201 & MA8353 - Transforms and Partial Differential Equations
Year of Study :	2018 – 2019

Course Code and Name : C201 & MA8353 - Transforms and Partial Differential Equations		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C201.1	Understand how to solve the given standard partial differential equations.	K2
C201.2	Solve differential equations using Fourier series analysis which plays a vital role in engineering applications.	K3
C201.3	Appreciate the physical significance of Fourier series techniques in solving one and two dimensional heat flow problems and one dimensional wave equations.	K3
C201.4	Understand the mathematical principles on transforms and partial differential equations would provide them the ability to formulate and solve some of the physical problems of engineering.	K2
C201.5	Use the effective mathematical tools for the solutions of partial differential equations by using Z transform techniques for discrete time systems.	K3

Programme: B.E. Mechanical Engineering	
Year & Semester:	II & III
Course Code & Name:	C202 & ME8391 - Engineering Thermodynamics
Year of Study :	2018 – 2019

Course Code and Name : C202 & ME8391 - Engineering Thermodynamics		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C202.1	Apply the first law of thermodynamics for simple open and closed systems under steady and unsteady conditions.	K3
C202.2	Apply second law of thermodynamics to open and closed systems and calculate entropy and availability.	K3
C202.3	Apply Rankine cycle to steam power plant and compare few cycle improvement methods.	K3
C202.4	Derive simple thermodynamic relations of ideal and real gases.	K2
C202.5	Calculate the properties of gas mixtures and moist air and its use in psychometric processes.	K2



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Programme: B.E. Mechanical Engineering	
Year & Semester:	II & III
Course Code & Name:	C203 & CE8394-Fluid Mechanics and Machinery
Year of Study :	2018 – 2019

Course Code and Name : C203 & CE8394-Fluid Mechanics and Machinery		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C203.1	Apply mathematical knowledge to predict the properties and characteristic of a fluid.	K3
C203.2	Can analyse and calculate major and minor losses associated with pipe flow in piping Networks.	K4
C203.3	Can mathematically predict the nature of physical quantities	K2
C203.4	Can critically analyse the performance of pumps	K4
C203.5	Can critically analyse the performance of turbines.	K4

Programme: B.E. Mechanical Engineering	
Year & Semester:	II& III
Course Code & Name:	C204 & ME 8351 Manufacturing Technology-I
Year of Study :	2018 – 2019

Course Code and Name :C204 & ME 8351 Manufacturing Technology-I		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C204.1	Explain different metal casting processes, associated defects, merits and demerits	K2
C204.2	Compare different metal joining processes.	K2
C204.3	Summarize various hot working and cold working methods of metals.	K3
C204.4	Explain various sheet metal making processes.	K2
C204.5	Distinguish various methods of manufacturing plastic components	K2



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Programme: B.E. Mechanical Engineering	
Year & Semester:	II& III
Course Code & Name:	C 205-EE8353- Electrical Drives and Controls
Year of Study :	2018 – 2019

Course Code and Name : C205-EE8353- Electrical Drives and Controls		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C205.1	Associate the various electrical drive and its power rating for different loading conditions	K2
C205.2	Discuss the characteristics of DC and AC Machines	K2
C205.3	Explain the starting method of DC and AC Machines	K2
C205.4	Discuss the conventional and solid state speed control of DC drives	K2
C205.5	Explain the conventional and solid state speed control of AC drives	K2

Programme: B.E. Computer Science and Engineering	
Year & Semester:	II& III
Course Code & Name:	C206 & ME8361-Manufacturing Technology Laboratory
Year of Study :	2018 – 2019

Course Code and Name : C206 & ME8361-Manufacturing Technology Laboratory		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C206.1	Demonstrate the safety precautions exercised in the mechanical workshop.	K2
C206.2	Make the workpiece as per given shape and size using lathe.	K4
C206.3	Joining two metal using arc welding.	K4
C206.4	Use of sheet metal fabrication tools and make simple tray and funnel.	K4
C206.5	Use of different moulding tools, patterns and prepare sand moulds.	K4



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Programme: B.E. Mechanical Engineering	
Year & Semester:	II& III
Course Code & Name:	C207 & ME8381-Computer Aided Machine Drawing
Year of Study :	2018 – 2019

Course Code and Name :C207 & ME8381-Computer Aided Machine Drawing		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C207.1	Explain the drawing standards & fits and tolerances	K2
C207.2	Execute the different 2D drafting tool commands to do the mechanical component drawing	K3
C207.3	Execute the different 3D commands to do the mechanical component drawing	K3
C207.4	Sketch part drawings, sectional views and assembly drawings as per standards using CAD packages	K3
C207.5	Create part drawings, sectional views and assembly drawings as per standards using CAD packages	K3

Programme: B.E. Mechanical Engineering	
Year & Semester:	II& III
Course Code & Name:	C208 & EE8361-Electrical Engineering Laboratory
Year of Study :	2018 – 2019

Course Code and Name :C208 & EE8361-Electrical Engineering Laboratory		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C208.1	Execute the performance characteristics and Load test on DC motor and DC Generator	K3
C208.2	Illustrate the performance characteristics and Load test on Transformer	K3
C208.3	Perform the Characteristics curves of synchronous motors.	K3
C208.4	Demonstrate the performance, Characteristics and Load test on AC motor and Alternator	K3
C208.5	Explain the working principle of starters	K2



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Programme: B.E. Mechanical Engineering	
Year & Semester:	II & III
Course Code & Name:	C209 & HS8381-Interpersonal skill / listening & speaking
Year of Study :	2018 – 2019

Course Code and Name :C 209 & HS8381-Interpersonal skill / listening &speaking		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C209.1	Listen and react by giving verbal and non verbal feedback.	K2
C209.2	Speak about personal activities with appropriate pronunciations.	K2
C209.3	Listen and respond to various academic dialogues and discussions.	K2
C209.4	Participate in conversations and group discussions	K2
C209.5	Participate confidently and appropriately in conversations both formal and informal	K2

Programme: B.E. Mechanical Engineering	
Year & Semester:	II&IV
Course Code & Name:	C 210 & MA8452-Statistics and Numerical Control
Year of Study :	2018 – 2019

Course Code and Name : C210 & MA8452-Statistics and Numerical Control		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C210.1	Apply the concept of testing of hypothesis for small and large samples in real life problems.	K2
C210.2	Apply the basic concepts of classifications of design of experiments in the field of agriculture.	K3
C210.3	Appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems.	K4
C210.4	Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations.	K2
C210.5	Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications	K3



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Programme: B.E. Mechanical Engineering	
Year & Semester:	II & IV
Course Code & Name:	C211 & ME8492-Kinematics of Machinery
Year of Study :	2018 – 2019

Course Code and Name : C211 & ME8492-Kinematics of Machinery		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C211.1	Discuss the basics of mechanism	K3
C211.2	Calculate velocity and acceleration in simple mechanisms	K3
C211.3	Develop CAM profiles	K4
C211.4	Solve problems on gears and gear trains	K3
C211.5	Examine friction in machine elements	K3

Programme: B.E. Mechanical Engineering	
Year & Semester:	II & IV
Course Code & Name:	C212&ME8451-Manufacturing Technology-II
Year of Study :	2018 – 2019

Course Code and Name : C212 & ME8451-Manufacturing Technology-II		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C212.1	Explain the mechanism of material removal processes.	K2
C212.2	Describe the constructional and operational features of centre lathe and other special purpose lathes.	K2
C212.3	Describe the constructional and operational features of shaper, planner, milling, drilling, sawing and broaching machines.	K2
C212.4	Explain the types of grinding and other super finishing processes apart from gear manufacturing processes.	K2
C212.5	Summarize numerical control of machine tools and write a part program.	K3



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Programme: B.E. Mechanical Engineering	
Year & Semester:	II&IV
Course Code & Name:	C213 & ME8491-Engineering Metallurgy
Year of Study :	2018 – 2019

Course Code and Name :C213 & ME8491-Engineering Metallurgy		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C213.1	Explain alloys and phase diagram, Iron-Iron carbon diagram and steel classification.	K2
C213.2	Explain isothermal transformation, continuous cooling diagrams and different heat treatment processes.	K2
C213.3	Clarify the effect of alloying elements on ferrous and non-ferrous metals	K1
C213.4	Summarize the properties and applications of non metallic materials.	K1
C213.5	Explain the testing of mechanical properties.	K2

Programme: B.E. Mechanical Engineering	
Year & Semester:	II & IV
Course Code & Name:	C214 & CE8395-Strength Of Materials For Mechanical Engineers
Year of Study :	2018 – 2019

Course Code and Name : C214 & CE8395-Strength Of Materials For Mechanical Engineers		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C214.1	Understand the concepts of stress and strain in simple and compound bars, the importance of principal stresses and principal planes.	K2
C214.2	Understand the load transferring mechanism in beams and stress distribution due to shearing force and bending moment.	K2
C214.3	Apply basic equation of simple torsion in designing of shafts and helical spring	K3
C214.4	Calculate the slope and deflection in beams using different methods	K4
C214.5	Analyze and design thin and thick shells for the applied internal and external pressures.	K4



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NH - 47, PALAKKAD MAIN ROAD, NAVAKKARAI (P.O), COIMBATORE, TAMIL NADU - 641105

Programme: B.E. Mechanical Engineering	
Year & Semester:	II&IV
Course Code & Name:	C215 & ME8493-Thermal Engineering-I
Year of Study :	2018 – 2019

Course Code and Name : C215 & ME8493-Thermal Engineering-I		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C215.1	Apply thermodynamic concepts to different air standard cycles and solve problems.	K3
C215.2	Solve problems in single stage and multistage air compressors	K2
C215.3	Explain the functioning and features of IC engines, components and auxiliaries.	K2
C215.4	Calculate performance parameters of IC Engines	K3
C215.5	Explain the flow in Gas turbines and solve problems.	K3

Programme: B.E. Mechanical Engineering	
Year & Semester:	II&IV
Course Code & Name:	C216 & ME8462-Manufacturing Technology Laboratory-II
Year of Study :	2018 – 2019

Course Code and Name :C216 & ME8462-Manufacturing Technology Laboratory-II		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C216.1	Use different machine tools to manufacturing gears	K3
C216.2	Ability to use different machine tools to manufacturing gears.	K3
C216.3	Ability to use different machine tools for finishing operations	K3
C216.4	Ability to manufacture tools using cutter grinder	K3
C216.5	Develop CNC part programming	K4



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Programme: B.E. Mechanical Engineering	
Year & Semester:	II&IV
Course Code & Name:	C217 & CE8381 - Strength of Materials and Fluid Mechanics and Machinery Laboratory
Year of Study :	2018 – 2019

Course Code and Name : C217-CE8381-Strength of Materials and Fluid Mechanics and Machinery Laboratory		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C217.1	Perform Tension, Torsion, Hardness, Compression, and Deformation test on Solid materials	K2
C217.2	Analyse the effect of Heat treatment parameters on the mechanical properties of Materials.	K3
C217.3	Interpret the microscopic examinations	K3
C217.4	Use the measurement equipments for flow measurement	K2
C217.5	Perform test on different fluid machinery	K3

Programme: B.E. Mechanical Engineering	
Year & Semester:	II & IV
Course Code & Name:	C218 & HS8461-Advanced Reading And Writing
Year of Study :	2018 – 2019

Course Code and Name : C218 & HS8461-Advanced Reading And Writing		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C218.1	Read and evaluate the text intelligently. .	K2
C218.2	Understand parts of speech and use appropriate connectives in writing a paragraph	K1
C218.3	Write effective job application letter.	K3
C218.4	Implement speed reading techniques.	K1
C218.5	Perform critical thinking in various professional contexts	K3



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Programme: B.E. Mechanical Engineering	
Year & Semester:	III & V
Course Code & Name:	C301 & ME8595-Thermal Engineering-II
Year of Study :	2019 – 2020

Course Code and Name :C301 & ME8595-Thermal Engineering-II		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C301.1	Solve problems in Steam Nozzle	K3
C301.2	Explain the functioning and features of different types of Boilers and auxiliaries and calculate performance parameters	K3
C301.3	Explain the flow in steam turbines, draw velocity diagrams for steam turbines and solve problems.	K3
C301.4	Summarize the concept of Cogeneration, Working features of Heat pumps and Heat exchangers	K2
C301.5	Solve problems using refrigerant table / charts and psychrometric charts	K3

Programme: B.E. Mechanical Engineering	
Year & Semester:	III& V
Course Code & Name:	C302 & ME8593-Design of Machine Elements
Year of Study :	2019 – 2020

Course Code and Name :C302 & ME8593-Design of Machine Elements		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C302.1	Explain the influence of steady and variable stresses in machine component design.	K2
C302.2	Apply the concepts of design to shafts, keys and couplings.	K3
C302.3	Apply the concepts of design to temporary and permanent joints.	K3
C302.4	Apply the concepts of design to energy absorbing members, connecting rod and crankshaft.	K3
C302.5	Apply the concepts of design to bearings.	K3



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Programme: B.E. Mechanical Engineering	
Year & Semester:	III & V
Course Code & Name:	C303 & ME8501-Metrology and Measurements
Year of Study :	2019 – 2020

Course Code and Name : C303 & ME8501-Metrology And Measurements		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C303.1	Describe the concepts of measurements to apply in various metrological instruments.	K2
C303.2	Outline the principles of linear and angular measurement tools used for industrial applications.	K3
C303.3	Explain the procedure for conducting computer aided inspection.	K2
C303.4	Demonstrate the techniques of form measurement used for industrial components.	K2
C303.5	Discuss various measuring techniques of mechanical properties in industrial applications.	K2

Programme: B.E. Mechanical Engineering	
Year & Semester:	III & V
Course Code & Name:	C304 & ME8594-Dynamics Of Machines
Year of Study :	2019 – 2020

Course Code and Name :C303 & ME8594-Dynamics of Machines		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C304.1	Calculate static and dynamic forces of mechanisms.	K3
C304.2	Calculate the balancing masses and their locations of reciprocating and rotating masses.	K3
C304.3	Compute the frequency of free vibration.	K3
C304.4	Compute the frequency of forced vibration and damping coefficient.	K3
C304.5	Calculate the speed and lift of the governor and estimate the gyroscopic effect on automobiles, ships and airplanes.	K3



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Programme: B.E. Mechanical Engineering	
Year & Semester:	III & V
Course Code & Name:	C305 & ORO551 Renewable Energy Sources
Year of Study :	2019 – 2020

Course Code and Name : C305 & ORO551 Renewable Energy Sources		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C305.1	Understanding the physics of solar radiation.	K2
C305.2	Classify the solar energy collectors and methodologies of storing solar energy.	K2
C305.3	Knowledge in applying solar energy in a useful way.	K3
C305.4	Knowledge in wind energy and biomass with its economic aspects.	K2
C305.5	Knowledge in capturing and applying other forms of energy sources like wind, biogas and geothermal energies.	K2

Programme: B.E. Mechanical Engineering	
Year & Semester:	III & V
Course Code & Name:	C306 & ME8511-Kinematics And Dynamics Laboratory
Year of Study :	2019 – 2020

Course Code and Name : C306 & ME8511-Kinematics And Dynamics Laboratory		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C306.1	Explain gear parameters, kinematics of mechanisms, gyroscopic effect and working of lab equipments.	K2
C306.2	Determine mass moment of inertia of mechanical element, critical speeds of shafts.	K3
C306.3	Find Governor effort and range sensitivity.	K3
C306.4	Calculate Natural frequency and damping coefficient, torsional frequency.	K3
C306.5	Determine balancing mass of rotating and reciprocating masses, and transmissibility ratio.	K3



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Programme: B.E. Mechanical Engineering	
Year & Semester:	III & V
Course Code & Name:	C307 & ME8512-Thermal Engineering Laboratory
Year of Study :	2019 – 2020

Course Code and Name : C307 & ME8512-Thermal Engineering Laboratory		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C307.1	Analyze the various performance data of IC Engines. Conduct.	K4
C307.2	Conduct the performance test on steam generator and turbines.	K3
C307.3	Determination of various heat transfer parameters by experimentation.	K3
C307.4	Determination of various psychometric parameters by experimentation.	K3
C307.5	Conduct test on reciprocating air compressor.	K3

Programme: B.E. Mechanical Engineering	
Year & Semester:	III& V
Course Code & Name:	C308 & ME8513-Metrology and Measurements Laboratory
Year of Study :	2019 – 2020

Course Code and Name :C308 &ME8513-Metrology and Measurements Laboratory		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C308.1	Calibrate the vernier, micrometer and slip gauges	K4
C308.2	Setting up the comparator for the inspection	K4
C308.3	Measure the gear tooth dimensions, angle using sine bar & Bevel protractor, straightness and flatness.	K4
C308.4	Measure the thread parameters screw thread micrometers and surface measurements,	K4
C308.5	Measure the Force, displacement, torque and vibration. temperature using thermocouple,	K4



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Programme: B.E. Mechanical Engineering	
Year & Semester:	III & VI
Course Code & Name:	C309 & ME8651-Design of Transmission Systems
Year of Study :	2019 – 2020

Course Code and Name : C309 & ME8651-Design of Transmission Systems		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C309.1	Apply the concepts of design to belts, chains and rope drives.	K3
C309.2	Apply the concepts of design to spur, helical gears.	K3
C309.3	Apply the concepts of design to worm and bevel gears.	K3
C309.4	Apply the concepts of design to gear boxes.	K3
C309.5	Apply the concepts of design to cams, brakes and clutches.	K3

Programme: B.E. Mechanical Engineering	
Year & Semester:	III & VI
Course Code & Name:	C310 & ME8691-Computer Aided Design and Manufacturing
Year of Study :	2019 – 2020

Course Code and Name :C310 & ME8691-Computer Aided Design and Manufacturing		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C310.1	Explain the 2D and 3D transformations, clipping algorithm, Manufacturing models and Metrics	K2
C310.2	Explain the fundamentals of parametric curves, surfaces and Solids	K2
C310.3	Summarize the different types of Standard systems used in CAD	K2
C310.4	Apply NC & CNC programming concepts to develop part programme for Lathe & Milling Machines	K3
C310.5	Summarize the different types of techniques used in Cellular Manufacturing and FMS	K2



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Programme: B.E. Mechanical Engineering	
Year & Semester:	III & VI
Course Code & Name:	C311 & ME8693-Heat and Mass Transfer
Year of Study :	2019 – 2020

Course Code and Name : C311 & ME8693-Heat and Mass Transfer		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C311.1	Apply heat conduction equations to different surface configurations under steady state and transient conditions and solve problems.	K3
C311.2	Apply free and forced convective heat transfer correlations to internal and external flows through/over various surface configurations and solve problems	K3
C311.3	Explain the phenomena of boiling and condensation, apply LMTD and NTU methods of thermal analysis to different types of heat exchanger configurations and solve problems	K2
C311.4	Explain basic laws for Radiation and apply these principles to radiative heat transfer between different types of surfaces to solve problems	K2
C311.5	Apply diffusive and convective mass transfer equations and correlations to solve problems for different applications	K3

Programme: B.E. Mechanical Engineering	
Year & Semester:	III & VI
Course Code & Name:	C312 & ME8692-Finite Element Analysis
Year of Study :	2019 – 2020

Course Code and Name :C312 & ME8692-Finite Element Analysis		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C312.1	Summarize the basics of finite element formulation.	K3
C312.2	Apply finite element formulations to solve one dimensional Problems	K3
C312.3	Apply finite element formulations to solve two dimensional scalar Problems	K3
C312.4	Apply finite element method to solve two dimensional Vector problems.	K3
C312.5	Apply finite element method to solve problems on ISO parametric element and dynamic Problems	K3



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Programme: B.E. Mechanical Engineering	
Year & Semester:	III& VI
Course Code & Name:	C313& ME8694 - Hydraulics and Pneumatics
Year of Study :	2019 – 2020

Course Code and Name : C313& ME8694 - Hydraulics and Pneumatics		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C313.1	Explain the Fluid power and operation of different types of pumps.	K2
C313.2	Summarize the features and functions of Hydraulic motors, actuators and Flow control valves.	K2
C313.3	Explain the different types of Hydraulic circuits and systems.	K2
C313.4	Explain the working of different pneumatic circuits and systems.	K2
C313.5	Summarize the various trouble shooting methods and applications of hydraulic and pneumatic systems.	K2

Programme: B.E. Mechanical Engineering	
Year & Semester:	III & VI
Course Code & Name:	C314 & ME8091 Automobile Engineering
Year of Study :	2019 – 2020

Course Code and Name : C314 & ME8091 Automobile Engineering		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C314.1	Recognize the various parts of the automobile and their functions and materials.	K2
C314.2	Discuss the engine auxiliary systems and engine emission control.	K2
C314.3	Distinguish the working of different types of transmission systems.	K3
C314.4	Explain the Steering, Brakes and Suspension Systems.	K2
C314.5	Predict possible alternate sources of energy for IC Engines.	K3



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Programme: B.E. Mechanical Engineering	
Year & Semester:	III & VI
Course Code & Name:	C315 & ME8681-CAD/ CAD Laboratory
Year of Study :	2020 – 2021

Course Code and Name : C315 & ME8681-CAD/ CAD Laboratory		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C315.1	Utilize standard software tools to create 2D drafting part.	K3
C315.2	Draw 3D parts from using CAD software	K4
C315.3	Draw Assembly drawing using CAD software	K4
C315.4	Utilize the concepts of G and M codes	K3
C315.5	Demonstrate manual part programming with G and M codes using CAM software.	K3

Programme: B.E. Mechanical Engineering	
Year & Semester:	III & VI
Course Code & Name:	C316 & ME8682- Design And Fabrication Project
Year of Study :	2019 – 2020

Course Code and Name : C316 & ME8682- Design And Fabrication Project		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C316.1	Develop the concept for the project.	K4
C316.2	Apply the Engineering knowledge in design.	K3
C316.3	Estimate the time frame and cost for the project execution and completion.	K3
C316.4	Implement Economically manufacturing of components to support the society need.	K3
C316.5	Demonstrate the project functionality along with report and presentation.	K3



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Programme: B.E. Mechanical Engineering	
Year & Semester:	III & VI
Course Code & Name:	C317 & HS8581-Professional Communication
Year of Study :	2019 – 2020

Course Code and Name : C317 & HS8581-Professional Communication		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C317.1	Classify the content material and make effective presentations.	K2
C317.2	Employ adequate soft skills to successfully execute the job on hand	K2
C317.3	Respond favorably to the values of others opinion and manage difficult situations in group discussions wisely.	K2
C317.4	Execute various skills in grooming for any profession.	K2
C317.5	Display the body language in a very pleasant manner and react to even tough situations with ease.	K2

Programme: B.E. Mechanical Engineering	
Year & Semester:	IV & VII
Course Code & Name:	C401 & ME8792- Power Plant Engineering
Year of Study :	2020 – 2021

Course Code and Name : C401& ME8792- Power Plant Engineering		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C401.1	Explain about coal based thermal power plant	K2
C401.2	Summarize about Diesel, Gas and Combined cycle power plants	K2
C401.3	Explain the concepts of nuclear power plants	K2
C401.4	Demonstrate Renewable energy power plants	K2
C401.5	Explain the power plant economics and environmental hazards	K2



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Programme: B.E. Mechanical Engineering	
Year & Semester:	IV & VII
Course Code & Name:	C402 & ME8793 - Process Planning And Cost Estimation
Year of Study :	2020 – 2021

Course Code and Name : C402 & ME8793-Process Planning And Cost Estimation		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C402.1	Select the process, equipment and tools for various industrial products.	K2
C402.2	Prepare process planning activity chart.	K2
C402.3	Explain the concept of cost estimation.	K2
C402.4	Compute the job order cost for different type of shop floor.	K3
C402.5	Calculate the machining time for various machining operations.	K3

Programme: B.E. Mechanical Engineering	
Year & Semester:	IV & VII
Course Code & Name:	C403 & ME8791-Mechatronics
Year of Study :	2020 – 2021

Course Code and Name : C403 & ME8791 - Mechatronics		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C403.1	Discuss the interdisciplinary applications of Electronics, Electrical, Mechanical and Computer Systems for the Control of Mechanical, Electronic Systems and sensor technology.	K2
C403.2	Discuss the architecture of Microprocessor and Microcontroller, Pin Diagram, Addressing Modes of Microprocessor and Microcontroller	K2
C403.3	Discuss Programmable Peripheral Interface, Architecture of 8255 PPI, and various device interfacing	K2
C403.4	Explain the architecture, programming and application of programmable logic controllers.	K2
C403.5	Discuss various Actuators and Mechatronics system using the knowledge and skills acquired.	K2



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Programme: B.E. Mechanical Engineering	
Year & Semester:	IV & VII
Course Code & Name:	C404 & OIE751-Robotics
Year of Study :	2020 – 2021

Course Code and Name : C404 & OIE751-Robotics		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C404.1	Explain the concepts of industrial robots, classification, specifications and coordinate systems. Also summarize the need and application of robots in different sectors.	K2
C404.2	Illustrate the different types of robot drive systems as well as robot end effectors.	K2
C404.3	Apply the different sensors and image processing techniques in robotics to improve the ability of robots.	K3
C404.4	Develop robotic programs for different tasks and familiarize with the kinematics motions of robot.	K4
C404.5	Examine the implementation of robots in various industrial sectors and interpolate the economic analysis of robots.	K3

Programme: B.E. Mechanical Engineering	
Year & Semester:	IV & VII
Course Code & Name:	C405 & MF8071 Additive Manufacturing
Year of Study :	2020 – 2021

Course Code and Name : C405 & MF8071 Additive Manufacturing		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C405.1	Explain the needs of additive manufacturing technology techniques	K2
C405.2	Explain the concept using CAD tools for component design of additive manufacturing.	K2
C405.3	Differentiate between liquid based and power based additive manufacturing systems.	K2
C405.4	Illustrate the process of extrusion and laminate processing.	K2
C405.5	Explain the bio-additive manufacturing, computer aided tissue engineering	K2



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Programme: B.E. Mechanical Engineering	
Year & Semester:	IV & VII
Course Code & Name:	C406 & ME8097- Non Destructive Testing and Evaluation
Year of Study :	2020 – 2021

Course Code and Name : C406& ME8097- Non Destructive Testing and Evaluation		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C406.1	Explain the fundamental concepts of NDT	K2
C406.2	Discuss the different methods of NDE	K2
C406.3	Explain the concept of Thermography and Eddy current testing	K2
C406.4	Explain the concept of Ultrasonic Testing and Acoustic Emission	K2
C406.5	Explain the concept of Radiography	K3

Programme: B.E. Mechanical Engineering	
Year & Semester:	IV & VII
Course Code & Name:	C407 & ME8711 - Simulation and Analysis Laboratory
Year of Study :	2020 – 2021

Course Code and Name : C408 & ME8711-Simulation and Analysis Laboratory		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C407.1	Simulate the working principle of air conditioning system and hydraulic cylinder using MATLAB	K2
C407.2	Simulate the working principle of pneumatic cylinder and cam follower mechanisms using MATLAB	K2
C407.3	Analyze the stresses and strains induced in plates, brackets and beams and heat transfer problems.	K4
C407.4	Calculate the natural frequency and mode shape analysis of 2D components	K2
C407.5	Calculate the natural frequency and mode shape analysis of beams	K2



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Programme: B.E. Mechanical Engineering	
Year & Semester:	IV & VII
Course Code & Name:	C408 & ME8781-Mechatronics Laboratory
Year of Study :	2020 – 2021

Course Code and Name :C408 & ME8781-Mechatronics Laboratory		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C408.1	Demonstrate the programming of 8085 microprocessor for various mathematic operations	K3
C408.2	Demonstrate the interfacing of Mechatronics system.	K3
C408.3	Demonstrate the functioning of various types of transducers.	K3
C408.4	Modelling and analysis of basic hydraulic, pneumatic and electrical circuits using Software.	K3
C408.5	Study of PLC and Image Processing technique.	K3

Programme: B.E. Mechanical Engineering	
Year & Semester:	IV& VII
Course Code & Name:	C409 & ME8712-Technical Seminar
Year of Study :	2020 – 2021

Course Code and Name : C409 & ME8712-Technical Seminar		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C409.1	Establish motivation for any topic of interest and develop a thought process for technical presentation.	K3
C409.2	Organize a detailed literature survey and build a document with respect to technical publications.	K2
C409.3	Analysis and comprehension of proof-of-concept and related data.	K3
C409.4	Make use of new and recent technology for creating technical reports	K2
C409.5	Present Effectively and improve soft skills.	K3



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Programme: B.E. Mechanical Engineering	
Year & Semester:	IV & VIII
Course Code & Name:	C410 & MG8591-Principles of Management
Year of Study :	2020 – 2021

Course Code and Name : C410 & MG8591-Principles of Management		
Course Code	CO Statements	Knowledge Level
The students should be able to have		
C410.1	Understand about Management principles and Organizations.	K2
C410.2	Understanding about planning of management	K2
C410.3	Understanding about organizing and staffing of Organisation	K2
C410.4	Understanding about leading and directing of Management	K2
C410.5	Understanding about controlling and on international aspect of management	K2

Programme: B.E. Mechanical Engineering	
Year & Semester:	IV & VIII
Course Code & Name:	C411 & GE6075 Professional Ethics in Engineering
Year of Study :	2020 – 2021

Course Code and Name : C411 & GE6075 Professional Ethics in Engineering		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C411.1	Outline the principles of human values	K2
C411.2	Demonstrate the techniques and theories of Engineering Ethics	K2
C411.3	Explain the procedure for Engineering As Social Experimentation	K2
C411.4	Summarize the concept of Safety, Responsibilities And Rights	K2
C411.5	Recapitulate the different Global Issues	K2



EASA COLLEGE

OF ENGINEERING & TECHNOLOGY (ECET)

— ULTIMATE DESTINATION FOR TECHNICAL EXCELLENCE —

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NH - 47, PALAKKAD MAIN ROAD, NAVAKKARAI (P.O), COIMBATORE, TAMIL NADU - 641105

Programme: B.E. Mechanical Engineering	
Year & Semester:	IV & VIII
Course Code & Name:	C412 & ME8811-Project Work
Year of Study :	2020 – 2021

Course Code and Name :C412 & ME8811-Project Work		
Course Code	CO Statements	Knowledge Level
The students should be able to		
C412.1	Use literature to identify the objective, scope and the concept of the work.	K2
C412.2	Apply suitable methods and materials to carry out experiments by conserving eco-system	K3
C412.3	Discuss the results obtained to derive conclusions	K4
C412.4	Defend the work by preparing a report as per the University format.	K5
C412.5	Compile the experimental information to publish in journals/conference	K4