



# KARPAGA VINAYAGA

## COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai and Accredited by NAAC)  
GST Road, Chinnakolambakkam, Madhuranthagam Taluk, Chengalpattu District – 603 308, Tamil Nadu

## 2.6. STUDENT PERFORMANCE AND LEARNING OUTCOMES

### 2.6.2 Attainment of POs and COs are evaluated

S.No.	Title	Page Number
1.	Course Attainment for each Course (Sample Subject)	45
2.	CO attainment	50
3.	PO -PSO Direct Attainment	64
4.	PO-PSO Indirect Attainment	68
5.	PO – PSO attainment	69



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### Program outcomes (POs)

**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 analyse 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 modelling to complex engineering activities with an understanding of the limitations.

**PO6: The engineer and society:** Apply to reason 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 teamwork:** 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

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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.

**PO11: Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's 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 Specific Outcomes (PSOs)

**PSO1:** Our graduates will be able to apply knowledge of Design, Manufacturing, Thermal and Materials engineering to solve complex problems in mechanical engineering and its allied areas.

**PSO2:** Our graduates will be able to analyze, design and simulate mechanical engineering problems with the help of modern CAD/CAM/CAE tools while ensuring best engineering practices.

### Course Outcomes

Sl. No	Course Code	Subject Code	Subject Name	CO Code	CO Statements
1.	C101	HS6151	Technical English – I	C101.1	Listen, understand and respond to others in different situations.
				C101.2	write with clarity in simple, apt and flawless language with coherence and cohesion.
				C101.3	Explain the basic grammar techniques and utilise it in enhancing language development.
				C101.4	Read and comprehend a variety of texts adopting different reading skills.
				C101.5	Develop flair for any kind of writing with rich

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					vocabulary and proper syntax.
				C101.6	Write technical articles and present papers on any topic of any genre.
2.	C102	MA6151	Mathematics – I	C102.1	Apply matrix algebraic technique for practical application
				C102.2	Make use of infinite series approximation for solution arising in mathematical modeling
				C102.3	Apply differential calculus techniques for evolutes and envelopes
				C102.4	Apply differentiation to solve maxima or minima problems
				C102.5	Evaluate double and triple integrals by using fundamentals theorem of calculus
				C102.6	Formulate solutions for engineering problems by using differential and integral calculus
3.	C103	PH615	Engineering Physics – I	C103.1	Explain the Young's modulus and Rigidity modulus of elasticity of materials and its determination through experimental methods
				C103.2	Describe the characteristics of laser light and their application in semiconductor laser
				C103.3	Discuss the principle behind the propagation of light through an optical fibre and its application in sensors.
				C103.4	Explain the different modes of heat transfer
				C103.5	Relate and explain the quantum concepts in electron microscopes
				C103.6	Describe the unit cell characteristics and the growth of crystals
4.	C104	CY6151	Engineering Chemistry – I	C104.1	Explain basics of polymer chemistry
				C104.2	Describe the types of polymers, polymerization reactions, polymerization techniques and fabrication methods of polymers for engineering applications
				C104.3	Explain second law of thermodynamics and second law based derivations of importance in engineering applications in all disciplines
				C104.4	Explain phase rule in the alloying and the behaviour of one component and two component systems using phase diagram
				C104.5	Explain importance of photophysical and photochemical processes and spectroscopy

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				C104.6	Explain basics of nano materials, their properties and applications
5.	C105	GE6151	Computer Programming	C105.1	Elaborate the organization of digital computer and design the solution for simple computing problems using algorithm, flowchart and pseudo code.
				C105.2	Apply the different looping structure to solve simple scientific and statistical problems.
				C105.3	Identify the solutions for simple problems using arrays and strings
				C105.4	Demonstrate the usage of dynamic memory allocation and pointer variables.
				C105.5	Explain the concepts of structure and union with an example programs.
				C105.6	Develop simple software and applications
6.	C106	GE6152	Engineering Graphics	C106.1	Perform free hand sketching of basic geometrical construction and multiple views of objects
				C106.2	Construct orthographic projection of straight lines and planes surface
				C106.3	Construct orthographic views of simple solids
				C106.4	Develop lateral surfaces of sectioned solids
				C106.5	Build isometric and perspective views of simple solids
				C106.6	Develop graphic skills for communication of concept, ideas and design of engineering products
7.	C107	GE6161	Computer Practices Laboratory	C107.1	Explain fundamental concepts and basics commands in C
				C107.2	Develop, compile and debug programs in C language
				C107.3	Formulate problems and implement algorithms in C.
				C107.4	Select programming components that efficiently solve computing problems in real-world.
				C107.5	Apply good programming design methods for program development.
				C107.6	Develop recursive programs.
8.	C108	GE6162	Engineering Practices Laboratory	C108.1	Identify Tools and Techniques used for Sheet Metal Fabrication
				C108.2	Use welding equipment to join the structures.
				C108.3	Measure various electrical quantities
				C108.4	Explain the working of electronic components and its

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				utilization
				C108.5 Apply electronic principles to develop circuits for primitive application
				C108.6 Demonstrate Plumbing requirements of domestic buildings.
9.	C109	GE6163	Physics and Chemistry Laboratory - I	C109.1 Assess optical fibre parameters using laser properties.
				C109.2 Measure the velocity of ultrasonic waves in a given liquid medium
				C109.3 Compute the wavelength of mercury spectrum using properties of light
				C109.4 Compute the thermal conductivity of a bad conductor using Lee's method.
				C109.5 Estimate acids and bases quantitatively based on the conductance of the solution
				C109.6 Estimate acids and bases quantitatively based on pH level of the solution
10.	C110	HS6251	Technical English – II	C110.1 Breakdown the ideas in to its elementary constituents, analyze and act after a meaning full thought process
				C110.2 Analyze the phrase and passage and explicitly pass on the ideas meaning fully
				C110.3 Manage to interpret the given phrase or the graphical rendering and review the contents well individually or as a group
				C110.4 Concentrate on the communication aspect of complicated ideas and respond positively
				C110.5 Debate the issues and find the rudiments of the problem individually and as a group.
				C110.6 Respond intelligently and seek clarification and understand completely.
11.	C111	MA6251	Mathematics – II	C111.1 Apply Laplace transform technique to solve the given ordinary differential equation
				C111.2 Explain concepts of vector calculus, needed for problems in all engineering disciplines.
				C111.3 Compute line, surface and volume integral using Gauss divergence, Green's and stoke's theorem.
				C111.4 Solve singularities and its corresponding residues for the given function.
				C111.5 Solve double integral over general areas and triple integral over general volumes

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				C111.6	Apply Gauss Divergence theorem for evaluating the surface integral.
12.	C112	PH6251	Engineering Physics – II	C112.1	Explain the use of magnetic materials.
				C112.2	Explain the use of semiconducting materials.
				C112.3	Describe modern engineering materials and its applications
				C112.4	Explain dielectric materials and its applications
				C112.5	Explain advance engineering materials and its applications
				C112.6	Explain various types of materials and their applications in engineering and technology
13.	C113	CY6251	Engineering Chemistry – II	C113.1	Discuss boiler feed water requirements, related problems and water treatment techniques
				C113.2	Explain reduction reactions as they relate to engineering applications, such as corrosion.
				C113.3	Describe principles of electrochemical reactions, redox reactions in corrosion of materials and methods for corrosion prevention and protection of materials
				C113.4	Explain Principles and generation of energy in batteries, nuclear reactors, solar cells, wind mills and fuel cells.
				C113.5	Discuss Preparation, properties and applications of engineering materials.
				C113.6	Explain Types of fuels, calorific value calculations, manufacture of solid, liquid and gaseous fuels
14.	C114	GE6252	Basic Electrical and Electronics Engineering	C114.1	Explain the basic theorems used in electrical circuits
				C114.2	Discuss the construction and operative principle of electrical machines
				C114.3	Explain the fundamentals of semiconductor and applications.
				C114.4	Explain the principles of digital electronics
				C114.5	Identify the electrical components explain the characteristics of electrical machines.
				C114.6	Identify electronics components and use of them to design circuits.
15.	C115	GE6253	Engineering	C115.1	Illustrate the equilibrium of a particle in space using

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			<b>Mechanics</b>		principle of laws of mechanics
				C115.2	Analyse the equilibrium of rigid bodies in two dimensions and in three dimensions.
				C115.3	Determine the properties of the surfaces and solid
				C115.4	Calculate dynamic forces exerted in rigid bodies
				C115.5	Formulate the effect of friction on moving bodies
				C115.6	Predict the effect of force and motion of rigid bodies
16.	C116	GE6261	<b>Computer Aided Drafting and Modeling Laboratory</b>	C116.1	Demonstrate the capabilities of software that are used for Drafting and Modeling
				C116.2	Construct the different conic curves and simple solids by using drafting software
				C116.3	Develop the orthographic views for different machine component
				C116.4	Construct sectional and isometric views of simple solids
				C116.5	Design the plan for residential building
				C116.6	Create 2D and 3D model of various engineering components
17.	C117	GE6262	<b>Physics and Chemistry Laboratory - II</b>	C117.1	Demonstrate the application of a diode laser to determine the characteristics of a given optical fibre
				C117.2	Demonstrate the estimation of hydrochloric acid present in the given solution using pH meter
				C117.3	Estimate the mixture of acids by conductometry
				C117.4	Determine Coefficient of viscosity of a liquid using Poiseuille's method
				C117.5	Determine Rigidity modulus using torsion pendulum
				C117.6	Determine CaO in cement
18.	C201	MA6351	<b>Transforms and Partial Differential Equations</b>	C201.1	Solve the given standard partial differential equations
				C201.2	Appreciate the physical significance of Fourier series techniques in solving one and two dimensional heat flow problems
				C201.3	Apply partial differential equation for the solution of physical engineering problems
				C201.4	Evaluate the given integral using Fourier transform

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					technique
				C201.5	Solve partial differential equation by using Z transform techniques for discrete time system
				C201.6	Apply mathematical principle on transform and partial differential equation to solve mechanical Engineering problem
19.	C202	CE6306	Strength of Materials	C202.1	Determine the deformation behaviour of simple structures
				C202.2	Construct the shear force and bending moment diagram under various load conditions
				C202.3	Examine the stresses in Circular Shafts and springs.
				C202.4	Analyze different types of loads and its consequent deflections of structures
				C202.5	Solve for various stresses in thin and thick cylinders.
				C202.6	Assess the concepts of strength of materials to obtain solutions to real time engineering problems
20.	C203	ME6301	Engineering Thermodynamics	C203.1	Apply the first law of thermodynamics towards flow and non flow process
				C203.2	Predict the performance of energy systems using second law of thermodynamics
				C203.3	Apply Rankine cycle to steam power plant and compare few cycle improvement methods
				C203.4	Apply simple thermodynamic relations of ideal and real gases
				C203.5	Analyze the properties of gas mixtures and moist air and its use in psychrometric processes
				C203.6	Apply the Thermodynamic Principles to Mechanical Engineering Application.
21.	C204	CE6451	Fluid Mechanics and Machinery	C204.1	Predict the fluid properties and characteristics at stagnant and dynamic conditions.
				C204.2	Determine major and minor losses associated with pipe flow in piping networks.
				C204.3	apply the mathematical knowledge to validate the flow properties by dimensional analysis
				C204.4	Analyze the performance characteristics of various types of pumps

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				C204.5	Select the suitable turbine for specific applications based on the performance characteristics.
				C204.6	Examine the various parts of hydraulic machines and types of flows.
22.	C205	ME6302	Manufacturing Technology - I	C205.1	Identify various types and defects in metal casting process
				C205.2	Compare different metal joining processes.
				C205.3	Summarize the various hot working and cold working process.
				C205.4	Explain various sheet metal making processes.
				C205.5	Distinguish the various manufacturing process for plastic components.
				C205.6	Fabricate different types of components using the machine tools
23.	C206	EE6351	Electrical Drives and Controls	C206.1	Explain the basics of electrical motors
				C206.2	Predict the drive motor characteristic and performances
				C206.3	Choose the starting methods for different motors
				C206.4	Explain the solid-state speed control for DC motors
				C206.5	Explain the solid-state speed control for AC motors
				C206.6	Compare different types of electrical machines and their performance
24.	C207	ME6311	Manufacturing Technology Laboratory - I	C207.1	Demonstrate the safety precautions exercised in the mechanical workshop
				C207.2	Make the workpiece as per given shape and size using Lathe.
				C207.3	Perform the thread cutting operations in the given workpiece.
				C207.4	Make use of knurling tool to prepare model as per the given size.
				C207.5	Perform the machining operations using milling and shaping machine tools.
				C207.6	fabricate different types of mechanical components using the machine tools
25.	C208	CE6461	Fluid Mechanics and Machinery Laboratory	C208.1	Calculate the coefficient of discharge for Orifice meter and Venturimeter
				C208.2	Determine the friction factor for flow through pipes

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				C208.3	Estimate the performance characteristics of centrifugal pump and submergible pump
				C208.4	Construct the performance characteristics curves for reciprocating pump and gear pump.
				C208.5	Identify the performance characteristics of turbines
				C208.6	Predict the properties and characteristics of a fluid.
26.	C209	EE6365	Electrical Engineering Laboratory	C209.1	Demonstrate the load test, OCC, load characteristics and speed control of DC shunt and DC series motor
				C209.2	Experiment with load test, OC and SC test on a single phase transformer
				C209.3	Explain the regulation of an alternator by EMF and MMF methods
				C209.4	Perform load test, speed control on various phase of induction motor
				C209.5	Interpret the DC and AC starters
				C209.6	Construct the V curves and inverted V curves of synchronous Motor
27.	C210	MA6452	Statistics and Numerical Methods	C210.1	Apply the concept of testing of hypothesis for small and large samples in real life problems.
				C210.2	Apply the basic concepts of classifications of design of experiments in the field of mechanical Engineering.
				C210.3	Distinguish between numerical differentiation and numerical integration.
				C210.4	Distinguish between numerical differentiation and numerical integration.
				C210.5	Solve the partial and ordinary differential equations with initial and boundary conditions for various engineering applications
				C210.6	Determine the solutions for the problems drawn from the mechanical engineering industry using statistical and numerical techniques.
28.	C211	ME6401	Kinematics of Machinery	C211.1	Explain the fundamental concepts of machines, mechanisms and related terminologies.
				C211.2	Calculate velocity and acceleration of various linkage mechanisms.
				C211.3	Develop cam profile for specified output motions
				C211.4	Solve problems on gears and gear trains.
				C211.5	Calculate the friction in motion transmission and

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					machine components.
				C211.6	Utilize analytical, mathematical and graphical aspects of kinematics of Machines for optimum design.
29.	C212	ME6402	Manufacturing Technology- II	C212.1	Explain the mechanism of material removal processes
				C212.2	Describe the constructional and operational features of centre lathe and other special purpose lathes.
				C212.3	Describe the constructional and operational features of shaper, milling and gear cutting machines.
				C212.4	Explain the types of grinding and other super finishing processes
				C212.5	Summarize numerical control of machine tools and write a part program
				C212.6	Compare the functions and applications of different metal cutting tools
30.	C213	ME6403	Engineering Materials and Metallurgy	C213.1	Explain the phase diagrams and iron carbon equilibrium diagram
				C213.2	Categorize the various heat treatment processes and cooling curves
				C213.3	Clarify the effect of alloying elements on ferrous and non-ferrous metals
				C213.4	Summarize the properties and applications of non-metallic materials.
				C213.5	Explain the mechanical properties of different materials.
				C213.6	Apply the different materials, their processing, heat treatments in suitable application in mechanical engineering fields
31.	C214	GE6351	Environmental Science and Engineering	C214.1	Extend the knowledge about ecosystem and biodiversity at local, national and global level.
				C214.2	Summarize causes, effects, preventive and control measures of various types of pollution.
				C214.3	Explain the different natural resources and the need for their conservation.
				C214.4	Interpret the social issues and how to solve the issues.
				C214.5	Illustrate sustainable development, relationship between human population and environment.
				C214.6	Appreciate the importance of environment by assessing

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					its impact on the human world
32.	C215	ME6404	Thermal Engineering	C215.1	Apply thermodynamic concepts to different air standard cycles.
				C215.2	Demonstrate the performance and features of IC engines, components and auxiliaries.
				C215.3	Construct velocity diagrams for steam turbines.
				C215.4	Calculate the performance parameters of air compressors
				C215.5	Analyse the performance of Refrigeration and Air Conditioning system.
				C215.6	apply the different gas power cycles in IC and R&AC applications.
33.	C216	ME6411	Manufacturing Technology Laboratory-II	C216.1	Describe various machining operations in special purpose machines.
				C216.2	Demonstrate various special purpose machines such as vertical and horizontal milling, grinding and gear hobbing machines.
				C216.3	Make use of different machine tools for manufacturing gears
				C216.4	Employ different machine tools for finishing operations.
				C216.5	Develop CNC part programming
				C216.6	Equip with the practical knowledge required in the core industries special purpose machines
34.	C217	ME6412	Thermal Engineering Laboratory – I	C217.1	Experiment with IC engines to measure power, efficiency, fuel consumption and emissions
				C217.2	Measure fuel properties such as viscosity, flash point and fire point.
				C217.3	Conduct performance test on reciprocating air compressor.
				C217.4	Appraise the performance of steam generator and steam turbines
				C217.5	Construct the valve timing diagrams of IC engines.
				C217.6	Apply mathematical knowledge to draw the heat balance characteristics of engines
35.	C218	CE6315	Strength of Materials Laboratory	C218.1	Predict the tensile, compression and bending stresses
				C218.2	Determine hardness of different materials

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				C218.3	Experiment with torsion test to find the modulus of rigidity of a given specimen
				C218.4	Check the stiffness of the open coil and closed coil spring and grade them.
				C218.5	Identify the microstructure and characteristics of specimen.
				C218.6	Predict the mechanical strength of different materials at various loading conditions.
36.	C301	ME6501	Computer Aided Design	C301.1	Understand the fundamentals of computer program
				C301.2	Classify the different basic curves and solid modelling techniques
				C301.3	Explain the procedures of the solid removal algorithm
				C301.4	Describe the assembly of the mechanical parts and mechanism simulation
				C301.5	Identify different CAD standard to design the mechanical component
				C301.6	Explain the data exchange standard and communication standard
37.	C302	ME6502	Heat and Mass Transfer	C302.1	Interpret the mechanisms of heat transfer under steady and transient conditions.
				C302.2	Interpret the concepts of heat transfer through extended surfaces.
				C302.3	Explain the phase change heat transfer and heat exchanger
				C302.4	Describe the block body radiation and grey body radiation
				C302.5	Apply the Fick's Law of Diffusion and evaluate the convective mass transfer
				C302.6	Apply different heat and mass transfer principles of different applications
38.	C303	ME6503	Design of Machine Elements	C303.1	Explain the influence if study and variable stresses in machine component design
				C303.2	Design the components for transmission like shafts and coupling couplings.
				C303.3	Apply the concept of design to temporary and permanent joints
				C303.4	Apply the concept of design to energy storing elements

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					and engine components.
				C303.5	Select suitable bearings for various Engineering applications.
				C303.6	Apply the concept of design for evaluating the shape and dimensions of machine components
39.	C304	ME6504	Metrology and Measurements	C304.1	Describe the concept of measurements in various metrological instruments
				C304.2	Outline the principles of linear and angular measurement tools used for industrial application
				C304.3	Explain the procedure for conducting computer aided inspection
				C304.4	Demonstrate the techniques of form measurements used for industrial components
				C304.5	Discuss various measuring techniques of mechanical properties in industrial applications
				C304.6	Demonstrate different measurement technologies and its application in industries
40.	C305	ME6505	Dynamics of Machines	C305.1	Solve certain common dynamical problems developed in the machines / engines due to dynamic forces.
				C305.2	Identify the undesirable effects of unbalances resulting from any mechanical systems.
				C305.3	Calculate the effects of Dynamics of undesirable free vibrations.
				C305.4	Analyze the forces in mechanical systems and evaluate the dynamics of forced vibrations.
				C305.5	Calculate the speed and stability control in mechanical systems using the principles of governor and gyroscope.
				C305.6	Interpret the computed results in machine dynamics to improve the design of a mechanism.
41.	C306	GE6075	Professional Ethics in Engineering	C306.1	Distinguish between Moral and Ethics
				C306.2	Summarize the moral theories and ethical inquiries
				C306.3	Appraise the result of the engineering projects by applying ethical theories
				C306.4	Discuss about professional rights, employ rights and intellectual property rights, safety and risk involved in engineering projects
				C306.5	Judge the role of engineer in environmental issues, computer applications, weapons development,

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					multinational corporations and Corporate Social Responsibility.
				C306.6	Differentiate the Environmental Ethics & Computer Ethics
42.	C307	ME6511	Dynamics Laboratory	C307.1	Check the various types of gears, gear trains, kinematic mechanisms, and universal joints
				C307.2	Calculate the mass moment of inertia of axisymmetric objects using Turn table apparatus, bi-filar suspension, compound pendulum and natural frequency for single and double rotor systems, equivalent spring mass system and transverse
				C307.3	Check the critical speed of shaft under the given load conditions and the gyroscopic effect and couple on motorized gyroscope
				C307.4	Sketch the characteristic curves of Watt, Porter, Proell and Hartnell governors and motion curves for the given cam follower setup
				C307.5	Check the balancing of rotating masses in dynamic balancing machine.
				C307.6	Demonstrate the principles of kinematics and dynamics of machinery.
43.	C308	ME6512	Thermal Engineering Laboratory-II	C308.1	Determine thermal conductivity of various engineering materials.
				C308.2	Calculate heat transfer rate in free and forced convection environment.
				C308.3	Calculate emissivity of grey surface.
				C308.4	Appraise the effectiveness of parallel and counter flow heat exchanger.
				C308.5	Calculate COP of refrigeration and air conditioning system and performance of air compressor and fluidized bed cooling tower.
				C308.6	Describe the Effectiveness of Parallel / counter flow heat exchanger.
44.	C309	ME6513	Metrology and Measurements Laboratory	C309.1	Check the dimensions and the dimensional deviations of given parts
				C309.2	Check the dimensions, angularity and parallelism of a given component.

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				C309.3	Construct the torque characteristic curves to various loads at various distances
				C309.4	Appraise the straightness of surfaces and determine size of irregularities on a machined surface
				C309.5	Calculate the vertical distances or height of objects, taper angle of slope for a given component, various parameters of threads and gear wheel.
				C309.6	Calculate Bore diameter measurement using telescope gauge and micrometre
45.	C310	ME6601	Design of Transmission Systems	C310.1	Apply the concepts of design to belts, chains and rope drives
				C310.2	Apply the concept of design tool spur and helical gears
				C310.3	Evaluate the design concept of bevel, worm and cross helical gears
				C310.4	identify the correct progressive ratio to design the gear box
				C310.5	Apply the concept of design tool cams, brakes and clutches
				C310.6	Apply the standard procedures to design the transmission components used in engine and machines
46.	C311	MG6851	Principles of Management	C311.1	Explain the purpose of management & managerial roles in local and global organization
				C311.2	Describe the decision-making model under different conditions
				C311.3	Explain the process of staff selection and career development
				C311.4	Demonstrate creativity and innovation, and explain the motivational theories
				C311.5	Explain the process of different types of control, and planning operations in management
				C311.6	Explain the System and process of controlling
47.	C312	ME6602	Automobile Engineering	C312.1	Recognize the various parts of the automobile and their functions and materials.
				C312.2	Discuss the engine auxiliary systems and engine emission control.
				C312.3	Distinguish the working of different types of transmission systems.
				C312.4	Explain the Steering, Brakes and Suspension Systems.
				C312.5	Predict possible alternate sources of energy for IC Engines.

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				C312.6	Perform dismantling and assembling of Engine parts and Transmission Systems
48.	C313	ME6603	Finite Element Analysis	C313.1	Solve problems by applying standard finite element techniques.
				C313.2	Construct stiffness matrix for 1- D finite element
				C313.3	Examine 2-D finite element continuum for structural applications.
				C313.4	Solve 1-D and 2-D heat transfer problems using finite element approach.
				C313.5	Apply axisymmetric formulation for specific applications and Make use of finite element principles in isoparametric applications.
				C313.6	Apply the concepts of finite element principles in iso parametric applications
49.	C314	ME6604	Gas Dynamics and Jet Propulsion	C314.1	Discuss the basic difference between incompressible flow and compressible flow and the effect of Mach number on compressible flow.
				C314.2	Compare Fano flow and Rayleigh flow and calculate the flow properties in Fano flow and Rayleigh flow.
				C314.3	Compute the Prandtl Meyer equation for shock waves
				C314.4	Compare the working of various jet engines and calculate thrust & efficiency in jet propulsion using gas dynamics principles
				C314.5	Classify rocket engines and calculate efficiency in rocket propulsion
				C314.6	Apply gas dynamics principles in the Jet and Space Propulsion
50.	C315	ME6004	Unconventional Machining Processes	C315.1	Defend the needs of unconventional machining processes.
				C315.2	Explain the working principles of Mechanical Energy Based Processes and various process parameters influence on their performance.
				C315.3	Differentiate between Electric discharge machining and Wire cut Electric discharge machining
				C315.4	Compare the chemical machining process with electro-chemical machining process
				C315.5	Explain the working principles of thermal energy based processes.
				C315.6	Demonstrate different unconventional machining processes.
51.	C316	ME6611	C.A.D. / C.A.M.	C316.1	Create 2D and 3D models using modeling software.

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			Laboratory	C316.2	Understand the CNC control in modern manufacturing system
				C316.3	Prepare CNC part programming and perform manufacturing.
				C316.4	Create the CL Data and Post process generation using CAM packages.
				C316.5	Apply CAPP in Machining and Turning Centre.
				C316.6	Develop the Drilling and Tapping operation using CNC machine.
52.	C317	ME6612	Design and Fabrication Project	C317.1	choose their desired field to initiate their design and fabrication project
				C317.2	explain their concept of their design and develop their prototype of their design and fabrication project.
				C317.3	examine their design and fabrication project with some references.
				C317.4	conclude their design and fabrication project is advanced and improved in recent technology.
				C317.5	design and fabricate which will be hands on training at their budding stage.
				C317.6	Develop innovative design into prototype
53.	C318	GE6563	Communication Skills - Laboratory Based	C318.1	Listen to informal conversation and respond effectively
				C318.2	Communicate with one or more listener using appropriate communicative strategy
				C318.3	Write coherently and flawlessly their ideas logically on a topic
				C318.4	Read different genres of text adopting various reading strategies
				C318.5	Able to listen different Telephonic Conversation in different accent
				C318.6	Participate in the placement activities group discussion, interview skill and presentation
54.	C401	ME6701	Power Plant Engineering	C401.1	Describe the knowledge about the various subsystems of coal power plant
				C401.2	Recognize the merits & demerits of diesel and gas turbine power plant.
				C401.3	Explain the construction and working of components inside nuclear power plant.

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				C401.4	Discuss layout and components associated with renewable energy power plant
				C401.5	Apply the knowledge to power economics and environmental hazards
				C401.6	Discuss the different types of power plants, its functions and their issues related to them
55.	C402	ME6702	Mechatronics	C402.1	Explain the specifications of sensors and choose the suitable sensors for real time applications
				C402.2	Discuss the architecture of microprocessor and micro controller
				C402.3	Explain programmable peripheral interface and various device interfacing
				C402.4	Describe architecture, programming and application of programmable logic controller
				C402.5	Discuss various actuators and mechatronics systems for the given case studies
				C402.6	Design mechatronics system with the help of Microprocessor, PLC and other electrical and Electronics Circuits.
56.	C403	ME6703	Computer Integrated Manufacturing System	C403.1	Explain the basic concepts of CAD, CAM and CIM
				C403.2	Summarize the production planning and process planning techniques
				C403.3	Apply different coding techniques in cellular manufacturing
				C403.4	Discuss different FMS layouts and automated guided vehicle system
				C403.5	Classify robots for industrial application
				C403.6	Make us of computer applications in various aspect of manufacturing
57.	C404	GE6757	Total Quality Management	C404.1	Outline the basic concepts of total quality management.
				C404.2	Apply tqm principles towards continuous process improvement.
				C404.3	Solve the problems on six sigma concepts.
				C404.4	Predict the performance through process capability techniques.
				C404.5	List the concepts requirement and benefits of various quality systems.

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				C404.6	Select tools and techniques of quality management in manufacturing and service sector .
58.	C405	ME6005	Process Planning and Cost Estimation	C405.1	Explain the procedure and steps involved in process, equipment and tooling selection
				C405.2	Describe the Process parameters calculation for various production processes
				C405.3	Calculate the labour cost, material cost and depreciation cost in foundry shop
				C405.4	Calculate the different cost in welding shop and forging shop
				C405.5	Calculate the Machining Time for Different Lathe Operations like Drilling and Boring
				C405.6	Assess process planning concepts to make cost estimation for production process.
59.	C406	ME6012	Maintenance Engineering	C406.1	Illustrate the principles and practices of maintenance activities.
				C406.2	Explain the preventive maintenance and its strategies in Industries.
				C406.3	List the different condition monitoring techniques in industries.
				C406.4	Distinguish the repairing techniques for basic machine elements.
				C406.5	Choose the repairing techniques for material handling equipment.
				C406.6	Elaborate the different maintenance activities adopted in industries.
60.	C407	ME6711	Simulation and Analysis Laboratory	C407.1	Develop MATLAB programs for analyzing Engineering Problems
				C407.2	formulate Simulation using Multibody Dynamic software.
				C407.3	Predict the stresses and strains induced in plates, brackets and beams
				C407.4	examine thermal stress and heat transfer analysis of plates, cylindrical shells
				C407.5	calculate the natural frequency and mode shape analysis of 2D components and beams
				C407.6	Predict real time engineering problems using simulation and analysis tools
61.	C408	ME6712	Mechatronics	C408.1	Create the program for arithmetic functions and the

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			Laboratory		program for sorting, code conversion functions
				C408.2	Formulate the program codes to interface with traffic light controller and stepper motor.
				C408.3	Compare the set speed with actual speed of DC motor by interfacing suitable speed sensors
				C408.4	Integrate all the hydraulic, pneumatic and electro pneumatic circuits by using simulation software.
				C408.5	Compare the real images and template images based on image processing techniques
				C408.6	Design mechatronics system with the help of Microprocessor, PLC and other electrical and Electronics Circuits.
62.	C409	ME6713	Comprehension	C409.1	comprehend any given problem related to Manufacturing field
				C409.2	comprehend any given problem related to Thermal field
				C409.3	comprehend any given problem related to Design field
				C409.4	comprehend any given problem related to Management & Environment field
				C409.5	comprehend any given problem related to Mechanics
				C409.6	comprehend any given problem related to quantitative and general aptitude
63.	C410	MG6863	Engineering Economics	C410.1	Summarize basics of Engineering Economics and optimum costing.
				C410.2	Explain Value Engineering and Time Value of Money.
				C410.3	Differentiate Cash Dominated and Revenue Dominated Cash flow.
				C410.4	Apply suitable cash flow methods for different Situations.
				C410.5	Apply Depreciation methods for Individual/Industrial/Public Alternatives.
				C410.6	Apply the basics of economics and cost analysis to engineering and take economically sound decisions.
64.	C411	IE6605	Production Planning and Control	C411.1	Outline the fundamentals of production planning and production control.
				C411.2	Apply work measurement techniques and methods study procedures for productivity improvement.
				C411.3	Extend product information and infer steps in product planning.

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				C411.4	Solve problems related to production scheduling.
				C411.5	Discuss the effect of demand on inventories and outline recent trends in production process control
				C411.6	Prepare production planning and control activities such as work study, product planning, production scheduling and Inventory control
65.	C412	ME6016	Advanced I.C. Engines	C412.1	Explain the underlying principles of operation of SI Engines and its components
				C412.2	Explain the underlying principles of operation of CI Engines and its components
				C412.3	Discuss the formation of engine exhaust emissions and methods of emission control
				C412.4	Explain various alternate fuels and their properties,
				C412.5	Explain the contemporary developments in IC engines and Hybrid vehicles.
				C412.6	Discuss various alternate fuels and hybrid vehicle technology to reduce pollution.
66.	C413	ME6811	Project Work	C413.1	Make comprehensive use of the technical knowledge gained from Literature review.
				C413.2	Formulate the possible methodologies for the problem statements.
				C413.3	Organize the project activity with the constraints required to implement it.
				C413.4	Design the working model and test its functioning.
				C413.5	Communicate effectively to a diverse audience and develop technical reports and publications.
				C413.6	Work as a team member/leader to manage projects in a multidisciplinary environment.

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### CO-PO-PSO Mapping for all courses

Sl. No.	Course Code	Subject Code & Name	CO Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1.	C101	HS6151	C101.1	-	-	-	-	-	-	-	-	1	3	-	1	1	-
			C101.2	-	-	-	-	-	-	-	-	-	3	-	1	1	-
			C101.3	-	-	-	-	-	-	-	-	-	3	-	1	1	-
			C101.4	-	-	-	-	-	-	-	-	-	3	-	1	1	-
			C101.5	-	-	-	-	-	-	-	-	-	3	-	1	1	-
			C101.6	-	-	-	-	-	-	-	-	2	3	-	1	1	-
				-	-	-	-	-	-	-	-	2	3	-	1	1	-
2.	C102	MA6151	C102.1	3	2	1	-	-	-	-	-	-	-	-	1	1	-
			C102.2	3	2	1	-	-	-	-	-	-	-	-	1	1	-
			C102.3	3	2	1	-	-	-	-	-	-	-	-	1	1	-
			C102.4	3	2	1	-	-	-	-	-	-	-	-	1	1	-
			C102.5	3	2	1	-	-	-	-	-	-	-	-	1	1	-
			C102.6	3	2	1	-	-	-	-	-	-	-	-	1	1	-
				3	2	1	-	-	-	-	-	-	-	-	1	1	-
3.	C103	PH615	C103.1	2	1	-	-	-	-	-	-	-	-	-	1	2	-
			C103.2	2	1	-	-	-	-	-	-	-	-	-	1	1	-
			C103.3	2	1	-	-	-	-	-	-	-	-	-	1	1	-
			C103.4	2	1	-	-	-	-	-	-	-	-	-	1	2	-
			C103.5	2	1	-	-	-	-	-	-	-	-	-	1	1	-
			C103.6	2	1	-	-	-	-	-	-	-	-	-	1	1	-
				2	1	-	-	-	-	-	-	-	-	-	1	1	-
4.	C104	CY6151	C104.1	2	1	-	-	-	-	1	-	-	-	-	1	1	-
			C104.2	2	1	-	-	-	-	1	-	-	-	-	1	1	-
			C104.3	2	1	-	-	-	-	1	-	-	-	-	1	1	-
			C104.4	2	1	-	-	-	-	1	-	-	-	-	1	1	-
			C104.5	2	1	-	-	-	-	1	-	-	-	-	1	1	-
			C104.6	2	1	-	-	-	-	1	-	-	-	-	1	1	-
				2	1	-	-	-	-	1	-	-	-	-	1	1	-
5.	C105	GE6151	C105.1	2	1	-	-	-	-	-	-	-	-	-	1	1	-

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			C105.2	3	2	1	-	-	-	-	-	-	-	1	1	-	
			C105.3	2	1		-	-	-	-	-	-	-	1	1	-	
			C105.4	2	1	-	-	-	-	-	-	-	-	1	1	-	
			C105.5	2	1	-	-	-	-	-	-	-	-	1	1	-	
			C105.6	3	3	2	1	-	-	-	-	-	-	1	1	-	
				2	2	2	1							1	1		
6.	C106	GE6152	C106.1	3	2	1	1	-	-	-	1	1	2	-	1	2	-
			C106.2	3	2	1	1	-	-	-	1	1	2	-	1	2	-
			C106.3	3	2	1	1	-	-	-	1	1	2	-	1	2	-
			C106.4	3	2	1	1	-	-	-	1	1	2	-	1	2	-
			C106.5	3	2	1	1	-	-	-	1	1	2	-	1	2	-
			C106.6	3	2	1	1	-	-	-	1	1	2	-	1	2	-
				3	2	1	1				1	1	2		1	2	
7.	C107	GE6161	C107.1	2	1	-	-	2	-	-	2	2	1	-	-	-	1
			C107.2	2	1	-	-	2	-	-	2	2	1	-	-	-	1
			C107.3	2	1	-	-	2	-	-	2	2	1	-	-	-	1
			C107.4	3	1	-	-	2	-	-	2	2	1	-	-	-	1
			C107.5	3	2	1	-	2	-	-	2	2	1	-	-	-	1
			C107.6	2	1	-	-	2	-	-	2	2	1	-	-	-	1
				2	1	1		2			2	2	1				1
8.	C108	GE6162	C108.1	2	1	-	-	1	-	-	2	2	1	-	-	2	-
			C108.2	2	1	-	-	1	-	-	2	2	1	-	-	2	-
			C108.3	2	1	-	-	1	-	-	2	2	1	-	-	2	-
			C108.4	2	1	-	-	1	-	-	2	2	1	-	-	2	-
			C108.5	2	1	-	-	1	-	-	2	2	1	-	-	2	-
			C108.6	2	1	-	-	1	-	-	2	2	1	-	-	2	-
				2	1			1			2	2	1			2	
9.	C109	GE6163	C109.1	2	1	-	-	1	-	1	2	2	1	-	-	1	-
			C109.2	2	1	-	-	1	-	1	2	2	1	-	-	1	-
			C109.3	2	1	-	-	1	-	1	2	2	1	-	-	1	-
			C109.4	2	1	-	-	1	-	1	2	2	1	-	-	1	-
			C109.5	2	1	-	-	1	1	1	2	2	1	-	-	1	-
			C109.6	2	1	-	-	1	1	1	2	2	1	-	-	1	-
				2	1			1	1	1	2	2	1			1	
10.	C110	HS6251	C110.1	-	-	-	-	-	-	-	-	3	-	1	1	-	
			C110.2	-	-	-	-	-	-	-	-	-	3	-	1	1	-

*[Signature]*

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			C110.3	-	-	-	-	-	-	-	-	-	3	-	1	1	-
			C110.4	-	-	-	-	-	-	-	-	-	3	-	1	1	-
			C110.5	-	-	-	-	-	-	-	-	1	3	-	1	1	-
			C110.6	-	-	-	-	-	-	-	-	-	3	-	1	1	-
												1	3		1	1	
11.	C111	MA6251	C111.1	3	2	1	-	-	-	-	-	-	-		1	1	-
			C111.2	2	2	1	-	-	-	-	-	-	-		1	1	-
			C111.3	3	2	1	-	-	-	-	-	-	-		1	1	-
			C111.4	3	2	1	-	-	-	-	-	-	-		1	1	-
			C111.5	3	2	1	-	-	-	-	-	-	-		1	1	-
			C111.6	3	2	1	-	-	-	-	-	-	-		1	1	-
				3	2	1									1	1	
12.	C112	PH6251	C112.1	2	1	-	-	-	-	-	-	-	-		1	1	-
			C112.2	2	1	-	-	-	-	-	-	-	-		1	1	-
			C112.3	2	1	-	-	-	-	-	-	-	-		1	1	-
			C112.4	2	1	-	-	-	-	-	-	-	-		1	1	-
			C112.5	2	1	-	-	-	1	1	-	-	-		1	1	-
			C112.6	2	1	-	-	-	1	1	-	-	-		1	1	-
				2	1				1	1					1	1	
13.	C113	CY6251	C113.1	2	1	-	-	-	1	1	-	-	-		1	1	-
			C113.2	2	1	-	-	-	-	-	-	-	-		1	1	-
			C113.3	2	1	-	-	-	-	-	-	-	-		1	1	-
			C113.4	2	1	-	-	-	-	-	-	-	-		1	1	-
			C113.5	2	1	-	-	-	1	1	-	-	-		1	1	-
			C113.6	2	1	-	-	-	1	1	-	-	-		1	1	-
				2	1				1	1					1	1	
14.	C114	GE6252	C114.1	2	1	-	-	-	-	-	-	-	-		1	2	-
			C114.2	2	1	-	-	-	-	-	-	-	-		1	2	-
			C114.3	2	1	-	-	-	-	-	-	-	-		1	2	-
			C114.4	2	1	-	-	-	-	-	-	-	-		1	2	-
			C114.5	2	1	-	-	-	-	-	-	-	-		1	2	-
			C114.6	2	1	-	-	-	-	-	-	-	-		1	2	-
				2	1										1	2	
15.	C115	GE6253	C115.1	2	1	-	-	-	-	-	-	-	-		1	3	-
			C115.2	3	3	2	1	-	-	-	-	-	-		1	3	-

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			C115.3	3	2	1	-	-	-	-	-	-	-	1	3	-	
			C115.4	3	2	1	-	-	-	-	-	-	-	1	3	-	
			C115.5	3	2	1	-	-	-	-	-	-	-	1	3	-	
			C115.6	3	2	1	-	-	-	-	-	-	-	1	3	-	
				3	2	1	1							1	3		
16.	C116	GE6261	C116.1	2	1	-	-	2	-	-	2	2	1	-	-	3	3
			C116.2	2	1	-	-	3	-	-	2	2	1	-	-	3	3
			C116.3	2	1	-	-	3	-	-	2	2	1	-	-	3	3
			C116.4	2	1	-	-	3	-	-	2	2	1	-	-	3	3
			C116.5	2	1	-	-	3	-	-	2	2	1	-	-	3	3
			C116.6	2	1	-	-	3	-	-	2	2	1	-	-	3	3
				2	1			3			2	2	1			3	3
17.	C117	GE6262	C117.1	2	-	-	-	-	-	-	2	2	1	-	-	1	-
			C117.2	2	-	-	-	-	-	-	2	2	1	-	-	1	-
			C117.3	2	-	-	-	-	-	-	2	2	1	-	-	1	-
			C117.4	2	-	-	-	-	-	-	2	2	1	-	-	1	-
			C117.5	2	-	-	-	-	-	-	2	2	1	-	-	1	-
			C117.6	2	-	-	-	-	-	-	2	2	1	-	-	1	-
				2							2	2	1			1	
18.	C201	MA6351	C201.1	3	2	2		-	-	-	-	-	-	1	1	-	
			C201.2	3	2	2		-	-	-	-	-	-	1	1	-	
			C201.3	3	2	2		-	-	-	-	-	-	1	1	-	
			C201.4	3	2	2	1	-	-	-	-	-	-	1	1	-	
			C201.5	3	2	2		-	-	-	-	-	-	1	1	-	
			C201.6	3	2	2		-	-	-	-	-	-	1	1	-	
				3	2	2	1							1	1		
19.	C202	CE6306	C202.1	3	2	1		-	-	-	-	-	-	1	3	-	
			C202.2	3	2	1	-	-	-	-	-	-	-	1	3	-	
			C202.3	3	2	1		-	-	-	-	-	-	1	3	-	
			C202.4	3	3	2	1	-	-	-	-	-	-	1	3	-	
			C202.5	3	2	1		-	-	-	-	-	-	1	3	-	
			C202.6	3	2	1	-	-	-	-	-	-	-	1	3	-	
				3	2	1	1							1	3		
20.	C203	ME6301	C203.1	2	2	1	-	-	-	-	-	-	1	3	-		
			C203.2	3	2	1		-	-	-	-	-	-	1	3	-	

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			C203.3	2	2	1	-	-	-	-	-	-	-	1	3	-	
			C203.4	2	2	1	-	-	-	-	-	-	-	-	1	3	-
			C203.5	3	2	2	1	-	-	-	-	-	-	-	1	3	-
			C203.6	3	2	1	-	-	-	-	-	-	-	-	1	3	-
				3	2	1	1	-	-	-	-	-	-	-	1	3	-
21.	C204	CE6451	C204.1	3	2	1	-	-	-	-	-	-	-	1	3	-	
			C204.2	3	2	1	-	-	-	-	-	-	-	-	1	3	-
			C204.3	3	2	1	-	-	-	-	-	-	-	-	1	3	-
			C204.4	3	3	2	1	-	-	-	-	-	-	-	1	3	-
			C204.5	3	2	1	-	-	-	-	-	-	-	-	1	3	-
			C204.6	3	2	1	-	-	-	-	-	-	-	-	1	3	-
				3	2	1	1								1	3	
22.	C205	ME6302	C205.1	2	1	-	-	-	-	-	-	-	-	1	3	-	
			C205.2	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C205.3	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C205.4	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C205.5	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C205.6	2	1	-	-	-	-	-	-	-	-	-	1	3	-
				2	1										1	3	
23.	C206	EE6351	C206.1	2	1	-	-	-	-	-	-	-	-	1	1	-	
			C206.2	3	2	1	-	-	-	-	-	-	-	-	1	1	-
			C206.3	1	-	-	-	-	-	-	-	-	-	-	1	1	-
			C206.4	2	1	-	-	-	-	-	-	-	-	-	1	1	-
			C206.5	2	1	-	-	-	-	-	-	-	-	-	1	1	-
			C206.6	2	1	-	-	-	-	-	-	-	-	-	1	1	-
				2	1	1									1	1	
24.	C207	ME6311	C207.1	2	-	-	-	2	-	-	2	2	1	-	-	2	-
			C207.2	2	-	-	-	2	-	-	2	2	1	-	-	3	-
			C207.3	2	-	-	-	2	-	-	2	2	1	-	-	3	-
			C207.4	2	1	-	-	2	-	-	2	2	1	-	-	3	-
			C207.5	2	-	-	-	2	-	-	2	2	1	-	-	3	-
			C207.6	2	2	1	-	2	-	-	2	2	1	-	-	3	-
				2	2	1		2			2	2	1			3	
25.	C208	CE6461	C208.1	2	1	-	-	-	-	-	2	1	-	-	2	-	
			C208.2	2	1	-	-	-	-	-	2	1	-	-	3	-	

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			C208.3	2	1	-	-	-	-	-	-	2	1	-	-	3	-
			C208.4	2	1	-	-	-	-	-	-	2	1	-	-	3	-
			C208.5	1	-	-	-	-	-	-	-	2	1	-	-	3	-
			C208.6	3	2	1	-	-	-	-	-	2	1	-	-	3	-
				2	1	1						2	1			3	
26.	C209	EE6365	C209.1	2	-	-	-	-	-	-	-	2	1	-	-	1	-
			C209.2	2	-	-	-	-	-	-	-	2	1	-	-	1	-
			C209.3	2	-	-	-	-	-	-	-	2	1	-	-	1	-
			C209.4	2	-	-	-	-	-	-	-	2	1	-	-	1	-
			C209.5	2	-	-	-	-	-	-	-	2	1	-	-	1	-
			C209.6	2	-	-	-	-	-	-	-	2	1	-	-	1	-
				2								2	1			1	
27.	C210	MA6452	C210.1	3	3	2	-	-	-	-	-	-	-	-	1	2	-
			C210.2	3	3	2	-	-	-	-	-	-	-	-	1	2	-
			C210.3	2	1	1	-	-	-	-	-	-	-	-	1	2	-
			C210.4	2	1	1	-	-	-	-	-	-	-	-	1	2	-
			C210.5	3	3	2	-	-	-	-	-	-	-	-	1	2	-
			C210.6	3	3	2	-	-	-	-	-	-	-	-	1	2	-
				3	2	2									1	2	
28.	C211	ME6401	C211.1	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C211.2	3	1		-	-	-	-	-	-	-	-	1	3	-
			C211.3	3	2	1	-	-	-	-	-	-	-	-	1	3	-
			C211.4	3	2	1	-	-	-	-	-	-	-	-	1	3	-
			C211.5	3	1	1		-	-	-	-	-	-	-	1	3	-
			C211.6	3	2	1	-	-	-	-	-	-	-	-	1	3	-
				3	2	1									1	3	
29.	C212	ME6402	C212.1	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C212.2	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C212.3	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C212.4	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C212.5	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C212.6	2	1	-	-	-	-	-	-	-	-	-	1	3	-
				2	1	-	-	-	-	-	-	-	-	-	1	3	-
30.	C213	ME6403	C213.1	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C213.2	2	1	-	-	-	-	-	-	-	-	-	1	3	-

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			C213.3	2	1	-	-	-	-	-	-	-	-	1	3	-	
			C213.4	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C213.5	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C213.6	3	2	1	-	-	1	1	-	-	-	-	1	3	-
				2	1	1			1	1					1	3	
31.	C214	GE6351	C214.1	2	-	-	-	-	2	3	-	-	-	-	1	2	-
			C214.2	2	-	-	-	-	2	3	-	-	-	-	1	2	-
			C214.3	2	-	-	-	-	2	3	-	-	-	-	1	2	-
			C214.4	2	-	-	-	-	2	3	-	-	-	-	1	2	-
			C214.5	2	-	-	-	-	2	3	-	-	-	-	1	2	-
			C214.6	2	1	1	1	-	2	3	-	-	-	-	1	2	-
				2	1	1	1		2	3					1	2	
32.	C215	ME6404	C215.1	3	2	1	-	-	-	-	-	-	-	1	3		
			C215.2	2	1		-	-	-	-	-	-	-	-	1	3	-
			C215.3	3	2	1	-	-	-	-	-	-	-	-	1	3	-
			C215.4	3	2	1	1	-	-	-	-	-	-	-	1	3	-
			C215.5	3	3	2	1	-	-	-	-	-	-	-	1	3	-
			C215.6	3	2	1	-	-	-	-	-	-	-	-	1	3	-
				3	2	1	1								1	3	
33.	C216	ME6411	C216.1	2	-	-	-	1	-	-	1	2	1	-	-	3	-
			C216.2	2	-	-	-	1	-	-	1	2	1	-	-	3	-
			C216.3	2	-	-	-	1	-	-	1	2	1	-	-	3	-
			C216.4	2	-	-	-	1	-	-	1	2	1	-	-	3	-
			C216.5	2	1	-	-	1	-	-	1	2	1	-	-	3	-
			C216.6	2	1	-	-	1	-	-	1	2	1	-	-	3	-
				2	1			1			1	2	1			3	
34.	C217	ME6412	C217.1	2	-	-	-	1	-	-	1	2	1	-	-	3	-
			C217.2	2	-	-	-	1	-	-	1	2	1	-	-	3	-
			C217.3	2	-	-	-	1	-	-	1	2	1	-	-	3	-
			C217.4	2	-	-	-	1	-	-	1	2	1	-	-	3	-
			C217.5	2	-	-	-	1	-	-	1	2	1	-	-	3	-
			C217.6	3	2	1	1	1	-	-	1	2	1	-	-	3	-
				2	2	1	1	1			1	2	1			3	
35.	C218	CE6315	C218.1	2	-	-	-	1	-	-	1	2	1	-	-	3	-
			C218.2	2	-	-	-	1	-	-	1	2	1	-	-	3	-
			C218.3	2	-	-	-	1	-	-	1	2	1	-	-	3	-

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			C218.4	2	-	-	-	1	-	-	1	2	1	-	-	3	-
			C218.5	2	1			1	-	-	1	2	1	-	-	3	-
			C218.6	3	2	1	1	1	-	-	1	2	1	-	-	3	-
				2	2	1	1	1			1	2	1			3	
36.	C301	ME6501	C301.1	2	1	-	-	1	-	-	-	-	-	-	1	2	3
			C301.2	2	1	-	-	-	-	-	-	-	-	-	1	2	3
			C301.3	2	1	-	-	-	-	-	-	-	-	-	1	2	3
			C301.4	2	1	-	-	-	-	-	-	-	-	-	1	2	3
			C301.5	2	1	-	-	1	-	-	-	-	-	-	1	2	3
			C301.6	2	1	-	-	1	-	-	-	-	-	-	1	2	3
				2	1			1							1	2	3
37.	C302	ME6502	C302.1	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C302.2	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C302.3	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C302.4	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C302.5	3	2	1	-	-	-	-	-	-	-	-	1	3	-
			C302.6	3	2	1	-	-	-	-	-	-	-	-	1	3	-
				2	1	1									1	3	
38.	C303	ME6503	C303.1	2	1	-	-	-	-	-	-	-	-	-	1	3	3
			C303.2	3	2	1	-	-	-	-	1	-	-	-	1	3	3
			C303.3	3	2	1	-	-	-	-	1	-	-	-	1	3	3
			C303.4	3	2	1	-	-	-	-	1	-	-	-	1	3	3
			C303.5	3	2	1	-	-	-	-	1	-	-	-	1	3	3
			C303.6	3	2	1	-	-	-	-	1	-	-	-	1	3	3
				3	2	1					1				1	3	3
39.	C304	ME6504	C304.1	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C304.2	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C304.3	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C304.4	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C304.5	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C304.6	2	1	-	-	-	-	-	-	-	-	-	1	3	-
				2	1	-	-	-	-	-	-	-	-	-	1	3	-
40.	C305	ME6505	C305.1	3	2	1	-	-	-	-	-	-	-	-	1	3	-
			C305.2	2	1		-	-	-	-	-	-	-	-	1	3	-
			C305.3	3	2	1	-	-	-	-	-	-	-	-	1	3	-

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			C305.4	3	2	1	1	-	-	-	-	-	-	-	1	3	-
			C305.5	3	2	1	-	-	-	-	-	-	-	-	1	3	-
			C305.6	3	2	1	-	-	-	-	-	-	-	-	1	3	-
				3	2	1	1								1	3	
41.	C306	GE6075	C306.1	-	-	-	-	-	3	1	3	-	-	-	1	3	-
			C306.2	-	-	-	-	-	3	1	3	-	-	-	1	3	-
			C306.3	-	-	-	-	-	3	1	3	-	-	-	1	3	-
			C306.4	-	-	-	-	-	3	1	3	-	-	-	1	3	-
			C306.5	-	-	-	-	-	3	1	3	-	-	-	1	3	-
			C306.6	-	-	-	-	-	3	1	3	-	-	-	1	3	-
									3	1	3				1	3	
42.	C307	ME6511	C307.1	2	1	-	-	1	-	-	1	2	1	-	-	2	-
			C307.2	2	1	-	-	1	-	-	1	2	1	-	-	2	-
			C307.3	2	1	-	-	1	-	-	1	2	1	-	-	2	-
			C307.4	2	1	-	-	1	-	-	1	2	1	-	-	2	-
			C307.5	2	1	-	-	1	-	-	1	2	1	-	-	2	-
			C307.6	2	1	-	-	1	-	-	1	2	1	-	-	2	-
				2	1			1			1	2	1			2	
43.	C308	ME6512	C308.1	2	1	-	-	-	-	-	1	2	1	-	-	2	-
			C308.2	2	1	-	-	-	-	-	1	2	1	-	-	2	-
			C308.3	2	1	-	-	-	-	-	1	2	1	-	-	2	-
			C308.4	2	1	-	-	-	-	-	1	2	1	-	-	2	-
			C308.5	2	1	-	-	-	-	-	1	2	1	-	-	2	-
			C308.6	2	1	-	-	-	-	-	1	2	1	-	-	2	-
				2	1						1	2	1			2	
44.	C309	ME6513	C309.1	2	1	-	-	-	-	-	1	2	1	-	-	2	
			C309.2	2	1	-	-	-	-	-	1	2	1	-	-	2	
			C309.3	2	1	-	-	-	-	-	1	2	1	-	-	2	
			C309.4	2	1	-	-	-	-	-	1	2	1	-	-	2	
			C309.5	2	1	-	-	-	-	-	1	2	1	-	-	2	
			C309.6	2	1	-	-	-	-	-	1	2	1	-	-	2	
				2	1						1	2	1			2	
45.	C310	ME6601	C310.1	3	2	1	-	-	-	-	1	-	-	-	1	3	2
			C310.2	3	2	1	-	-	-	-	1	-	-	-	1	3	2
			C310.3	3	3	2	1	-	-	-	1	-	-	-	1	3	2
			C310.4	2	1		-	-	-	-	1	-	-	-	1	3	2

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			C310.5	3	2	1	-	-	-	-	1	-	-	-	1	3	2
			C310.6	3	2	1	-	-	-	-	1	-	-	-	1	3	2
				3	2	1	1	-	-	-	1	-	-	-	1	3	2
46.	C311	MG6851	C311.1	-	-	-	-	-	1	-	3	-	-	3	1	1	
			C311.2	-	-	-	-	-	1	-	3	-	-	3	1	1	
			C311.3	-	-	-	-	-	1	-	3	-	-	3	1	1	
			C311.4	-	-	-	-	-	1	-	3	-	-	3	1	1	
			C311.5	-	-	-	-	-	1	-	3	-	-	3	1	1	
			C311.6	-	-	-	-	-	1	-	3	-	-	3	1	1	
									1		3			3	1	1	
47.	C312	ME6602	C312.1	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C312.2	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C312.3	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C312.4	2	1	-	-	-	-	2	-	-	-	-	1	3	-
			C312.5	2	1	-	-	-	-	2	-	-	-	-	1	3	-
			C312.6	2	1	-	-	-	2	-	-	-	-	-	1	3	-
				2	1				2	2					1	3	
48.	C313	ME6603	C313.1	3	2	1	-	-	-	-	-	-	-	-	1	3	-
			C313.2	3	2	1	-	-	-	-	-	-	-	-	1	3	-
			C313.3	3	3	2	1	-	-	-	-	-	-	-	1	3	-
			C313.4	3	2	1	-	-	-	-	-	-	-	-	1	3	-
			C313.5	3	2	1	-	-	-	-	-	-	-	-	1	3	-
			C313.6	3	2	1	-	-	-	-	-	-	-	-	1	3	-
				3	2	1	1								1	3	
49.	C314	ME6604	C314.1	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C314.2	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C314.3	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C314.4	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C314.5	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C314.6	3	2	1	1	-	-	-	-	-	-	-	1	3	-
				2	1	1	1								1	3	
50.	C315	ME6004	C315.1	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C315.2	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C315.3	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C315.4	2	1	-	-	-	-	-	-	-	-	-	1	3	-

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			C315.5	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C315.6	2	1	-	-	-	-	-	-	-	-	-	1	3	-
				2	1										1	3	
51.	C316	ME6611	C316.1	2	-	-	-	3	-	-	1	2	1	-	-	3	3
			C316.2	2	-	-	-	3	-	-	1	2	1	-	-	3	3
			C316.3	2	-	-	-	3	-	-	1	2	1	-	-	3	3
			C316.4	2	-	-	-	3	-	-	1	2	1	-	-	3	3
			C316.5	3	2	1	-	1	-	-	1	2	1	-	-	3	3
			C316.6	3	2	1	-	2	-	-	1	2	1	-	-	3	3
				2	2	1		3			1	2	1			3	3
52.	C317	ME6612	C317.1	3	2	2	2	3	3	3	3	3	3	3	3	3	3
			C317.2	3	2	2	2	3	3	3	3	3	3	3	3	3	3
			C317.3	3	2	2	2	3	3	3	3	3	3	3	3	3	3
			C317.4	3	2	2	2	3	3	3	3	3	3	3	3	3	3
			C317.5	3	2	2	2	3	3	3	3	3	3	3	3	3	3
			C317.6	3	2	2	2	3	3	3	3	3	3	3	3	3	3
				3	2	2	2	3	3	3	3	3	3	3	3	3	3
53.	C318	GE6563	C318.1	-	-	-	-	-	-	-	1	3	3	-	-	1	-
			C318.2	-	-	-	-	-	-	-	1	3	3	-	-	1	-
			C318.3	-	-	-	-	-	-	-	1	3	3	-	-	1	-
			C318.4	-	-	-	-	-	-	-	1	3	3	-	-	1	-
			C318.5	-	-	-	-	-	-	-	1	3	3	-	-	1	-
			C318.6	-	-	-	-	-	-	-	1	3	3	-	-	1	-
											1	3	3			1	
54.	C401	ME6701	C401.1	2	1					2					1	3	
			C401.2	2	1					2					1	3	
			C401.3	2	1				2	2	2				1	3	
			C401.4	2	1				2						1	3	
			C401.5	3	2				2						1	3	
			C401.6	2	1				2						1	3	
				2	1				2	2	2				1	3	
55.	C402	ME6702	C402.1	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C402.2	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C402.3	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C402.4	2	1	-	-	-	-	-	-	-	-	-	1	3	-

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			C402.5	2	1	-	-	-	-	-	-	-	-	-	1	3	-
			C402.6	3	2	1	1	-	-	-	-	-	-	-	1	3	-
				2	1	1	1								1	3	
56.	C403	ME6703	C403.1	2	1	-	-	-	-	-	-	-	-	-	1	3	3
			C403.2	2	1	-	-	-	-	-	-	-	-	-	1	3	2
			C403.3	3	2	1	-	-	-	-	-	-	-	-	1	3	2
			C403.4	2	1	-	-	-	-	-	-	-	-	-	1	3	2
			C403.5	2	1	-	-	-	2	-	-	-	-	-	1	3	2
			C403.6	3	2	1	-	-	-	-	-	-	-	-	1	3	3
				2	1	1	-	-	2	-	-	-	-	-	1	3	2
57.	C404	GE6757	C404.1	2					1	2			2	1	3		
			C404.2	2	1				1	2			2	1	3		
			C404.3	2	1				1	2			2	1	3		
			C404.4	2					1	2			2	1	3		
			C404.5	2					1	2			2	1	3		
			C404.6	2					1	2			2	1	3		
				2	1				1	2			2	1	3		
58.	C405	ME6005	C405.1	2	1	-	-	-	-	-	-	-	-	3	2	3	-
			C405.2	2	1	-	-	-	-	-	-	-	-	3	2	3	-
			C405.3	3	2	1	-	-	-	-	-	-	-	3	2	3	-
			C405.4	3	2	1	-	-	-	-	-	-	-	3	2	3	-
			C405.5	3	2	1	-	-	-	-	-	-	-	3	2	3	-
			C405.6	3	2	1	1	-	-	-	-	-	-	3	2	3	-
				3	2	1	1	-	-	-	-	-	-	3	2	3	-
59.	C406	ME6012	C406.1	2	1				2	2					1	2	
			C406.2	2	1				2	2					1	2	
			C406.3	2	1				2	2					1	2	
			C406.4	2	1				2	2					1	2	
			C406.5	2	1				2	2					1	2	
			C406.6	2	1				2	2					1	2	
				2	1				2	2					1	2	
60.	C407	ME6711	C407.1	2	1			2			1	2				3	3
			C407.2	3	2	1		2			1	2				3	3
			C407.3	2	1			2			1	2				3	3
			C407.4	2	1			2			1	2				3	3

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			C407.5	3	2	1		2		1	2			3	3
			C407.6	2	1	1		2		1	2			3	3
				2	1	1		2		1	2			3	3
61.	C408	ME6712	C408.1	2	1			2		1	2			2	3
			C408.2	2	1			2		1	2			2	3
			C408.3	2	1			2		1	2			2	3
			C408.4	2	1			2		1	2			2	3
			C408.5	2	1			2		1	2			2	3
			C408.6	3	2			2		1	2			3	3
				2	1			2		1	2			2	3
62.	C409	ME6713	C409.1	2										3	2
			C409.2	2	2	2	2							3	2
			C409.3	2	2	2	2	2		2				3	2
			C409.4	2					2	2	2	2		2	3
			C409.5	2	2	2	2							3	2
			C409.6	2	2	2	2	2	2	2	2	2	2	3	2
				2	2	2	2	2	2	2	2	2	2	3	2
63.	C410	MG6863	C410.1	2	1									3	2
			C410.2	2	1									3	2
			C410.3	2	1									3	2
			C410.4	3	2									3	2
			C410.5	3	2									3	2
			C410.6	3	2									3	2
				3	2									3	2
64.	C411	IE6605	C411.1	2	1									2	1
			C411.2	3	2									2	1
			C411.3	2	1									2	1
			C411.4	3	2									2	1
			C411.5	2	1									2	1
			C411.6	2	1									2	1
				2	1									2	1
65.	C412	ME6016	C412.1	2	1				1					1	3
			C412.2	2	1				1					1	3
			C412.3	2	1				1					1	3
			C412.4	2	1				1	2				1	3
			C412.5	2	1				1	2				1	3

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			C412.6	2	1				1	3					1	3	
				2	1				1	2					1	3	
66.	C413	ME6811	C413.1	3	3	2	2	3	3	3	3	3	3	3	3	3	3
			C413.2	3	3	2	2	3	3	3	3	3	3	3	3	3	3
			C413.3	3	3	2	2	3	3	3	3	3	3	3	3	3	3
			C413.4	3	3	2	2	3	3	3	3	3	3	3	3	3	3
			C413.5	3	3	2	2	3	3	3	3	3	3	3	3	3	3
			C413.6	3	3	2	2	3	3	3	3	3	3	3	3	3	3
				3	3	2	2	3	3	3	3	3	3	3	3	3	3

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I.N o.	Course Code	Course code	Course-PO and Course-PSO Matrix													
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1.	C101	HS6151	0	0	0	0	0	0	0	0	2	3	0	1	1	0
2.	C102	MA6151	3	2	1	0	0	0	0	0	0	0	0	1	1	0
3.	C103	PH6151	2	1	0	0	0	0	0	0	0	0	0	1	1	0
4.	C104	CY6151	2	1	0	0	0	0	1	0	0	0	0	1	1	0
5.	C105	GE6151	2	2	1	1	0	0	0	0	0	0	0	1	1	0
6.	C106	GE6152	3	2	1	1	0	0	0	1	1	2	0	1	2	0
7.	C107	GE6161	2	1	1	0	2	0	0	2	2	1	0	0	0	1
8.	C108	GE6162	2	1	0	0	1	0	0	2	2	1	0	0	2	0
9.	C109	GE6163	2	1	0	0	1	1	1	2	2	1	0	0	1	0
10.	C110	HS6251	0	0	0	0	0	0	0	0	1	3	0	1	1	0
11.	C111	MA6251	3	2	1	0	0	0	0	0	0	0	0	1	1	0
12.	C112	PH6251	2	1	0	0	0	1	1	0	0	0	0	1	1	0
13.	C113	CY6251	2	1	0	0	0	1	1	0	0	0	0	1	1	0
14.	C114	GE6252	2	1	0	0	0	0	0	0	0	0	0	1	2	0
15.	C115	GE6253	3	2	1	1	0	0	0	0	0	0	0	1	3	0
16.	C116	GE6261	2	1	0	0	3	0	0	2	2	1	0	0	3	3
17.	C117	GE6262	2	0	0	0	0	0	0	2	2	1	0	0	1	0
18.	C201	MA6351	3	2	2	1	0	0	0	0	0	0	0	1	1	0
19.	C202	CE6306	3	2	1	1	0	0	0	0	0	0	0	1	3	0
20.	C203	ME6301	3	2	1	1	0	0	0	0	0	0	0	1	3	0
21.	C204	CE6451	3	2	1	1	0	0	0	0	0	0	0	1	3	0
22.	C205	ME6302	2	1	0	0	0	0	0	0	0	0	0	1	3	0

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23.	C206	EE6351	2	1	1	0	0	0	0	0	0	0	0	1	1	0
24.	C207	ME6311	2	2	1	0	2	0	0	2	2	1	0	0	3	0
25.	C208	CE6461	2	1	1	0	0	0	0	0	2	1	0	0	3	0
26.	C209	EE6365	2	0	0	0	0	0	0	0	2	1	0	0	1	0
27.	C210	MA6452	3	2	2	0	0	0	0	0	0	0	0	1	2	0
28.	C211	ME6401	3	2	1	0	0	0	0	0	0	0	0	1	3	0
29.	C212	ME6402	2	1	0	0	0	0	0	0	0	0	0	1	3	0
30.	C213	ME6403	2	1	1	0	0	1	1	0	0	0	0	1	3	0
31.	C214	GE6351	2	1	1	1	0	2	3	0	0	0	0	1	2	0
32.	C215	ME6404	3	2	1	1	0	0	0	0	0	0	0	1	3	0
33.	C216	ME6411	2	1	0	0	1	0	0	1	2	1	0	0	3	0
34.	C217	ME6412	2	2	1	1	1	0	0	1	2	1	0	0	3	0
35.	C218	CE6315	2	2	1	1	1	0	0	1	2	1	0	0	3	0
36.	C301	ME6501	2	1	0	0	1	0	0	0	0	0	0	1	2	3
37.	C302	ME6502	2	1	1	0	0	0	0	0	0	0	0	1	3	0
38.	C303	ME6503	3	2	1	0	0	0	0	1	0	0	0	1	3	3
39.	C304	ME6504	2	1	0	0	0	0	0	0	0	0	0	1	3	0
40.	C305	ME6505	3	2	1	1	0	0	0	0	0	0	0	1	3	0
41.	C306	GE6075	0	0	0	0	0	3	1	3	0	0	0	1	3	0
42.	C307	ME6511	2	1	0	0	1	0	0	1	2	1	0	0	2	0
43.	C308	ME6512	2	1	0	0	0	0	0	1	2	1	0	0	2	0
44.	C309	ME6513	2	1	0	0	0	0	0	1	2	1	0	0	2	0
45.	C310	ME6601	3	2	1	1	0	0	0	1	0	0	0	1	3	2
46.	C311	MG6851	0	0	0	0	0	1	0	3	0	0	3	1	1	0
47.	C312	ME6602	2	1	0	0	0	2	2	0	0	0	0	1	3	0
48.	C313	ME6603	3	2	1	1	0	0	0	0	0	0	0	1	3	0
49.	C314	ME6604	2	1	1	1	0	0	0	0	0	0	0	1	3	0
50.	C315	ME6004	2	1	0	0	0	0	0	0	0	0	0	1	3	0
51.	C316	ME6611	2	2	1	0	3	0	0	1	2	1	0	0	3	3

*[Signature]*

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52.	C317	ME6612	3	2	2	2	3	3	3	3	3	3	3	3	3	3
53.	C318	GE6563	0	0	0	0	0	0	0	1	3	3	0	0	1	0
54.	C401	ME6701	2	1	0	0	0	2	2	2	0	0	0	1	3	0
55.	C402	ME6702	2	1	1	1	0	0	0	0	0	0	0	1	3	0
56.	C403	ME6703	2	1	1	0	0	2	0	0	0	0	0	1	3	2
57.	C404	GE6757	2	1	0	0	0	1	0	2	0	0	2	1	3	0
58.	C405	ME6005	3	2	1	1	0	0	0	0	0	0	3	2	3	0
59.	C406	ME 6012	2	1	0	0	0	2	2	0	0	0	0	1	2	0
60.	C407	ME6711	2	1	1	0	2	0	0	1	2	0	0	0	3	3
61.	C408	ME6712	2	1	0	0	2	0	0	1	2	0	0	0	2	3
62.	C409	ME6713	2	2	2	2	2	2	2	2	2	2	2	3	2	2
63.	C410	MG686 3	3	2	0	0	0	0	0	0	0	0	3	2	2	0
64.	C411	IE6005	2	1	0	0	0	0	0	0	0	0	2	1	2	0
65.	C412	ME 6016	2	1	0	0	0	1	2	0	0	0	0	1	3	0
66.	C413	ME6811	3	3	2	2	3	3	3	3	3	3	3	3	3	3

  
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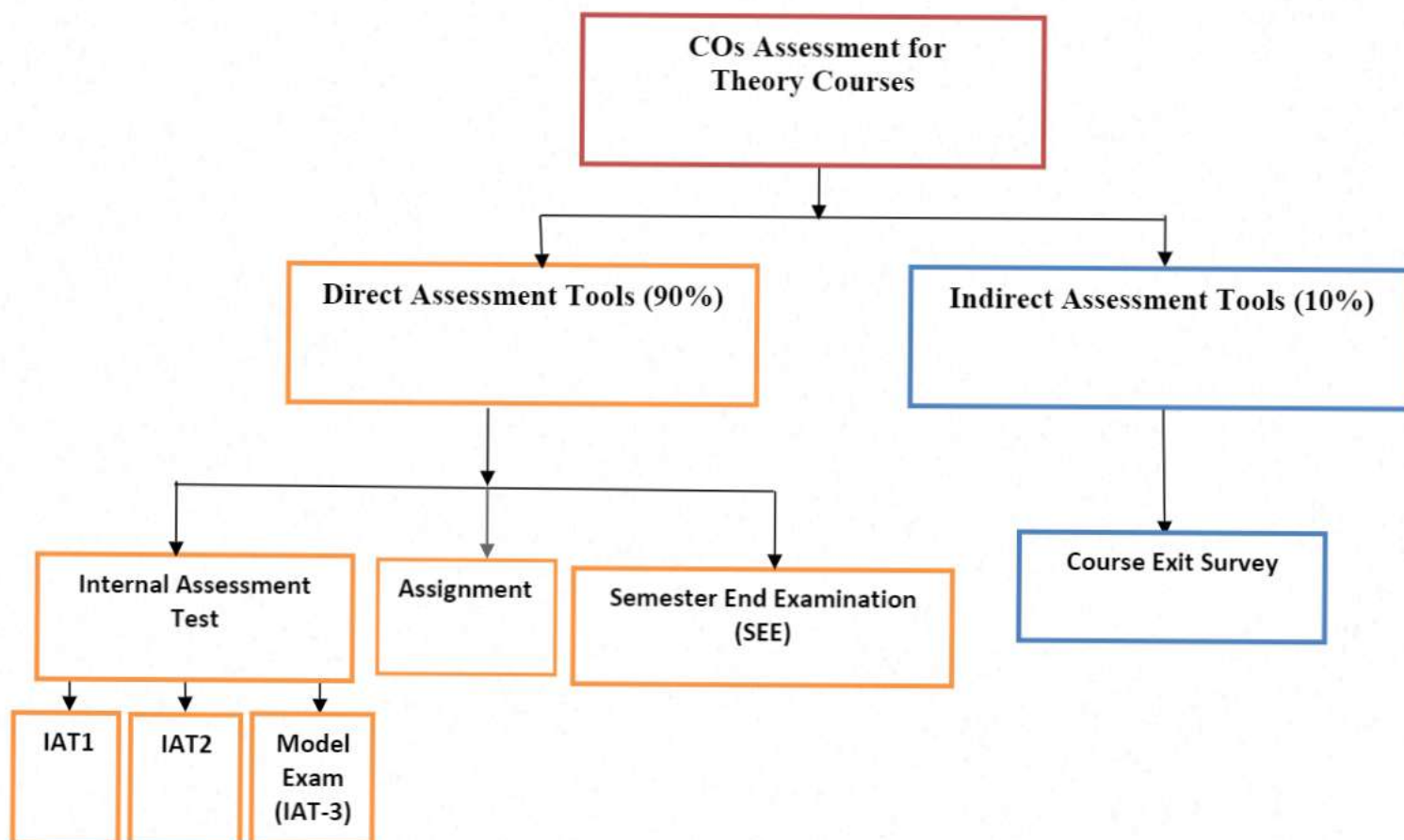
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### Course Outcome Assessment Processes

#### Course Outcome Assessment Framework for Theory courses



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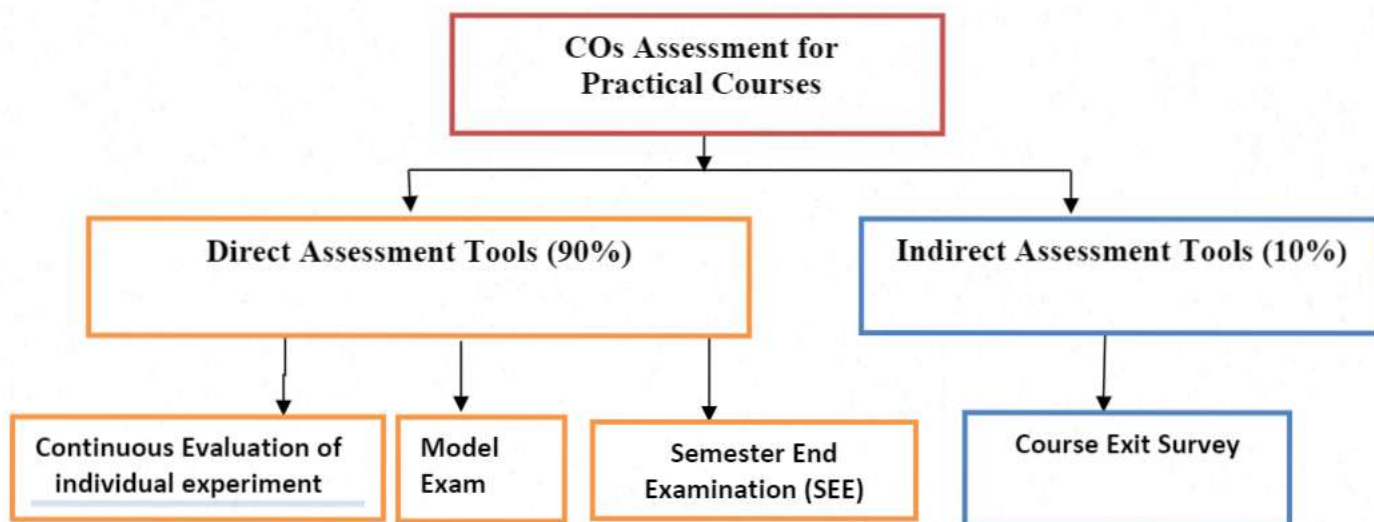



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### Course Outcome Assessment Framework for Practical courses



  
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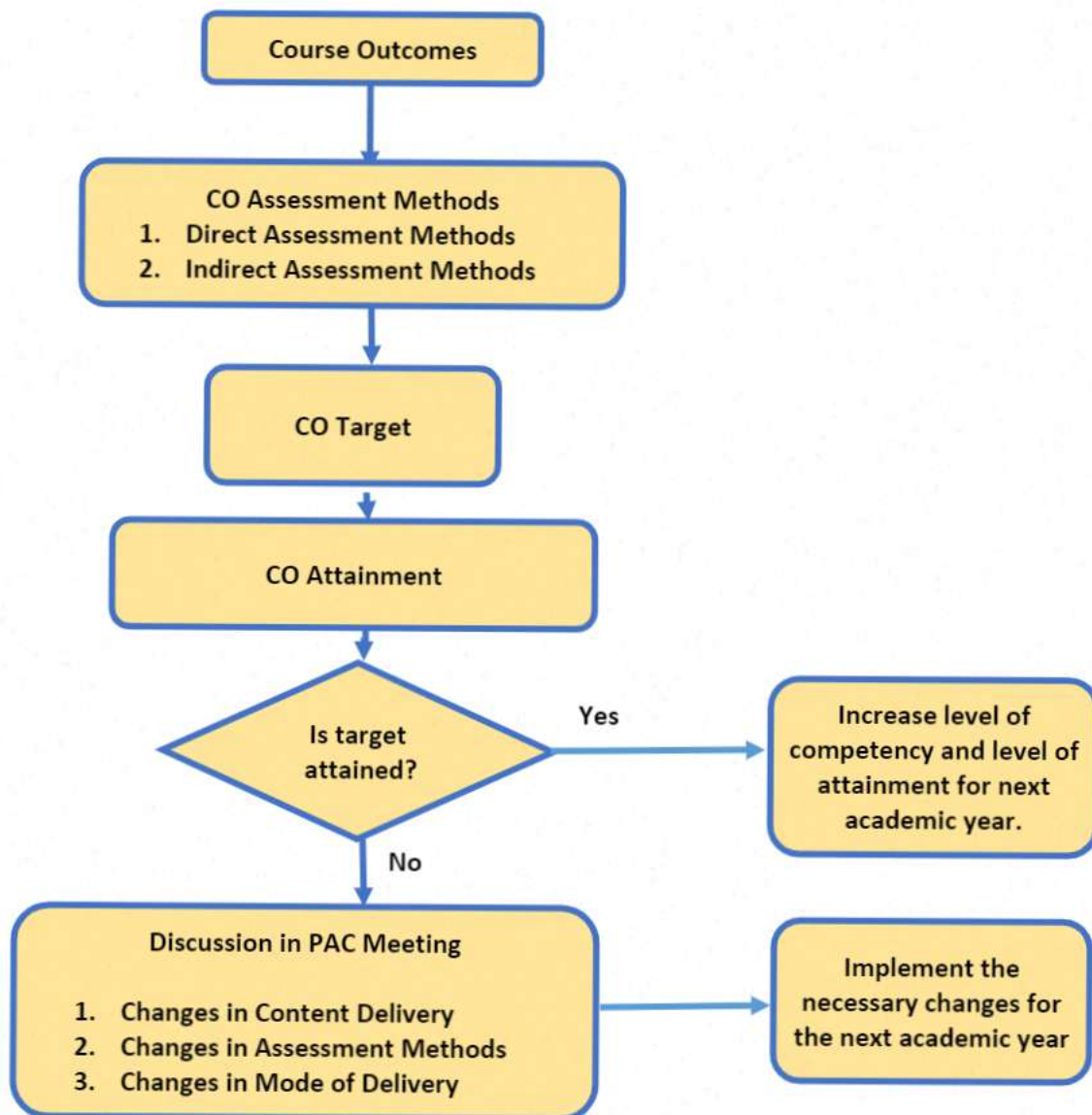


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### Process of assessment and attainment of CO



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### Assessment Tools Used for Evaluation of Course Outcomes

#### Direct Assessment Tools:

Theory Courses		
Assessment Tool	Frequency	Method
Internal Assessment Test (IAT)	Two per semester	This performance assessment tool is used to evaluate attainment of COs through direct questions related to the specific topics covered during a designated period. The examination will be conducted for 90 minutes.
Model Exam	One per semester	The Model examinations is of 3hours duration and covers the entire syllabus of the course and satisfies all COs for the particular course.
Semester End Examination (SEE)	One per semester	The SEE is of 3 hours duration and covers the entire syllabus of the course and satisfies all course outcomes for the particular course conducted by affiliating University.

Laboratory/Practical Courses		
Assessment Tool	Frequency	Method
Continuous evaluation of all experiments	After each experiment	Ability of the students to analyze and interpret the results of experiments is continuously evaluated by the faculty during laboratory classes. Each and every experiment is focused in attaining the course outcomes of lab courses.
Model Exam	One per semester	The Model examinations is of 3hours duration and covers the entire syllabus of the course and satisfies all

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		COs for the particular course.
Semester End Examination (SEE)	One per semester	The SEE is of 3 hours duration and covers the entire syllabus of the course and satisfies all course outcomes for the particular course conducted by affiliating University.

### Indirect Assessment Tools:

All Courses		
Assessment Tool	Frequency	Method
Course end survey	Once per semester at the end of the course	Towards the end of the course, course exit survey on a 5-point scale is conducted by the faculty member offering the course to obtain student feedback about attainment of <b>Course outcome</b> .

### CO Attainment Calculation

CO Attainment	Weightage	Assessment Tools
Direct CO Attainment	90%	Continuous Internal Assessments (IAT), (20%)
		Semester End Examination (SEE) (80%)
Indirect CO Attainment	10%	Course Exit Survey
Overall CO Attainment	<b>[Direct Attainment*0.9 +Indirect Attainment*0.1]</b>	

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### Calculation of Threshold Value

Sl.No	Sub Code	Subject	2011-15 Batch (A)	2012-16 Batch (B)	2013-17 Batch (C)	Average A+B+C/3	Fixed Threshold
1	HS6151	Technical English – I	47.59	49.50	35.90	44	50
2	MA6151	Mathematics – I	32.93	30.67	53.44	39	50
3	PH6151	Engineering Physics – I	37.24	32.50	55.90	42	50
4	CY6151	Engineering Chemistry – I	39.14	32.17	16.89	29	50
5	GE6151	Computer Programming	37.76	32.17	43.28	38	50
6	GE6152	Engineering Graphics	60.00	53.50	28.69	47	50
7	GE6161	Computer Practices Laboratory	59.31	82.33	86.23	76	85
8	GE6162	Engineering Practices Laboratory	80.00	79.00	79.02	79	85
9	GE6163	Physics and Chemistry Laboratory - I		84.33	81.80	83	85
10	HS6251	Technical English – II	63.97	53.33	44.75	54	55
11	MA6251	Mathematics – II	25.69	51.17	47.05	41	50
12	PH6251	Engineering Physics – II	34.83	42.46	61.48	46	50
13	CY6251	Engineering Chemistry – II	20.34	32.17	27.54	27	50
14	GE6252	Basic Electrical and Electronics Engineering	26.03	34.33	50.66	37	50
15	GE6253	Engineering Mechanics	46.55	39.00	37.21	41	50
16	GE6261	Computer Aided Drafting and Modeling Lab	74.31	87.33	84.59	82	85
17	GE6262	Physics and Chemistry Laboratory - II	75.34	63.67	91.80	77	80
18	MA6351	Transforms and Partial Differential Equations	42.53	51.47	40.46	45	50
19	CE6402	Strength of Materials	38.56	52.65	22.77	38	50
20	ME6301	Engineering Thermodynamics	32.15	30.59	17.08	27	50
21	CE6451	Fluid Mechanics and Machinery	25.56	53.82	8.46	29	50
22	ME6302	Manufacturing Technology - I	41.26	38.97	38.31	40	50
23	EE6351	Electrical Drives and Controls	38.46	25.29	49.38	38	50
24	ME6311	Manufacturing Technology Laboratory - I	82.46	83.38	86.62	84	85

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25	CE6461	Fluid Mechanics and Machinery Laboratory	78.21	91.03	77.69	82	85
26	EE6365	Electrical Engineering Laboratory	81.55	80.29	83.85	82	85
27	MA6452	Statistics and Numerical Methods	38.12	41.47	32.77	37	50
28	ME6401	Kinematics of Machinery	23.78	26.32	17.38	22	50
29	ME6402	Manufacturing Technology- II	35.62	34.41	30.92	34	50
30	ME6403	Engineering Materials and Metallurgy	35.67	33.82	40.31	37	50
31	GE6351	Environmental Science and Engineering	23.28	35.44	47.85	36	50
32	ME6404	Thermal Engineering	36.87	32.50	30.00	33	50
33	ME6411	Manufacturing Technology Laboratory-II	81.24	80.59	88.00	83	85
34	ME6412	Thermal Engineering Laboratory - I	87.46	91.32	83.54	87	85
35	CE6401	Strength of Materials Laboratory	85.57	73.09	88.15	82	85
36	ME6501	Computer Aided Design			31.75	31	50
37	ME6502	Heat and Mass Transfer	28.42	25.15	34.60	29	50
38	ME6503	Design of Machine Elements	22.69	33.24	34.13	30	50
39	ME6504	Metrology and Measurements	35.90	31.47	32.06	33	50
40	ME6505	Dynamics of Machines	30.00	28.38	31.27	30	50
41	GE6075	Professional Ethics in Engineering			55.71	55	60
42	ME6511	Dynamics Laboratory	79.25	74.12	88.89	81	85
43	ME6512	Thermal Engineering Laboratory-II	85.61	92.35	88.41	89	90
44	ME6513	Metrology and Measurements Laboratory	70.00	80.15	88.10	79	85
45	ME6601	Design of Transmission Systems	30.30	26.32	50.79	36	50
46	MG6851	Principles of Management	47.42	39.41	51.59	46	50
47	ME6602	Automobile Engineering	40.45	29.41	50.79	40	50
48	ME6603	Finite Element Analysis	40.00	24.26	52.54	39	50
49	ME6604	Gas Dynamics and Jet Propulsion	39.09	42.50	33.02	38	50
50	ME6004	Unconventional Machining	51.21	53.09	62.38	56	60

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		Processes					
51	ME6611	C.A.D. / C.A.M. Laboratory	61.49	71.03	76.98	70	85
52	ME6612	Design and Fabrication Project	89.24	87.65	82.22	86	90
53	GE6563	Communication Skills - Laboratory Based	77.42	78.68	79.68	79	85
54	ME6701	Power Plant Engineering	35.91	34.41	53.33	41	50
55	ME6702	Mechatronics	17.27	36.47	62.86	39	50
56	ME6703	Computer Integrated Manufacturing Systems	31.06	39.12	52.70	41	50
57	GE6757	Total Quality Management	56.67	38.68	54.29	50	50
58	ME6005	Process Planning and Cost Estimation	33.94	46.18	56.03	45	50
59	ME 6012	Maintenance Engineering	46.36		58.41	52	50
60	ME6711	Simulation and Analysis Laboratory	78.03	78.47	80.38	79	80
61	ME6712	Mechatronics Laboratory	92.58	88.68	95.40	92	95
62	ME6713	Comprehension	99.24	94.33	100.00	98	85
63	MG6853	Engineering Economics	52.42	59.55	54.76	56	60
64	IE6605	Production Planning and Control			60.63	60	60
65	ME6016	Advanced I.C. Engines	44.70	48.66	54.60	49	50
66	ME6811	Project Work	86.82	95.67	100.00	94	85

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### Attainment Level Vs Target

#### For Direct Attainment:

##### For Theory Courses:

- Attainment Level 1: 30% to 40% of students scored more than or equal to 'threshold value'
- Attainment Level 2: 41% to 60 % of students scored more than or equal to 'threshold value'
- Attainment Level 3: more than 60% of students scored more than or equal to 'threshold value'

##### For Laboratory/Project Courses:

- Attainment Level 1: 50% to 60% of students scored more than or equal to 'threshold value'
- Attainment Level 2: 61% to 70 % of students scored more than or equal to 'threshold value'
- Attainment Level 3: more than 70% of students scored more than or equal to 'threshold value'

#### For Indirect Attainment:

##### For Graduate Exit Survey:

- Attainment Level 1: 70% to 75% of students should select 'Excellent or Very Good'
- Attainment Level 2: 76 % to 80% of students should select 'Excellent or Very Good'
- Attainment Level 3: more than 80% of students should select 'Excellent or Very Good'

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### Internal Assessment Test Marks

			50										50										100																
			Internal Assessment 1										Internal Assessment 2										Model																
		REG. No/Q. no	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
Sl No	Student Name	CO	a										b										c																
			a										b										c																
			a										b										c																
Max. Marks	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
1	AKASHA	421216114001	1	1	1	1	2	7	3	3	5	1	2	1	1	5	4	3	7	2	2	1	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	AKASH V	421216114003	1	1	1	1	1	5			4	2	6	2	2	1	2	1	5	5	2	12	2	2	1	2	1	2	1	8	5	8		9	6			12	
3	AMIT KUMAR A	421216114004	2	2	2	2	2	5	4	5	13	2	2	2	2	2	9	6	5	11	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
4	ANAND S N	421216114005	2	1	2	1	2	4	2	2	1	1	1	1	1	6	4	3	8	1	2	1	2	1	2	1	2	1	6	7	7		5	7			9		
5	ANANTHAN A	421216114007						7	2	3	8	1	2	1	2	7	3	4	1	1								2	1	2	8	7	9		5	7		1	
6	ARAVIND G	421216114008	2	2	2	2	2	6	4	2	13	1	2	2	1	2	6	5	3	11							2	1	2	1	5	8	1		7	7		11	
7	ARAVIND V	421216114009	1	1	2	1	6	3	1	8	2	1	2	1	1	6	6	3	1	1							2	1	1	2	8	9	11		6	7		11	
8	ARAVINDAN G	421216114010	1	2	1	2	1	7	2	3	12	1	2	2	1	2	7	4	2								1	2	2	2	1	3	11		8	8	7	11	
9	ARUMUGASAMY G	421216114011	1	2	1	2	1	6	3	1	12	2	1	2	2	6			5	1	11	2	1	3	2		2	2	2	3	1	11		5	8	9	1		
10	ARUNACHALAM S	421216114012	1	1	1	1	5	4	3	8	2	1				7			4	4	8	1	2	1	1	2	1	9	8			8	5		1	1			
11	ARUN KUMAR P	421216114013	1	1	1	1	6	5	2	11	1		1	2					5	6	9	1	1	1	1	1	1	2	2	8	5		12	7		8	1		
12	AVINASH M	421216114014	1	1	1	2	1	6	4	3	14	2	2	2	2	7	3	3			9	2	2	1	2	1	2	2	1	8		7	6		7	1			
13	BEJARATHIN	421216114015	2	2	2	1	2	7	5	1	12	2	2	1	2	8	3	2	12	2	2	1	2	2	1	2	2	2	1	12		9	8		8	11			
14	DHATCTIANA MOORTHY	421216114016	2	1	2	1	2	7	4	4	11	1	2	1	2	6	5	3	11	2			1	2			1	8	9	7	6	8		1	9				
15	DINESH D	421216114017	1	1	1	1	4	4	3	14	2	1			1	6	4		9	2	1	1	1	1	1	1	1	2	8	9	12	4	9		11				
16	DINESH N	421216114018	2	2	2	2	2	5		3	2	12	1		2	7	3	2			8	2	1	1	1	1	1	7	6	8	8	7	7			7			
17	DINESH T	421216114019	1	1	2	1	7			4	2	11	1	2	2	8	4	3	13	2	2	2	2	1	2	2	1	11	12	9	8		7	12					
18	DINESHKUMAR R	421216114020	2	2	2	2	6		5	1	13	2	2	2	2	9	5	4	11	2	2	2	2	1	1	1	2	3	1	8	8	7		1	1				
19	DON BOSE L	421216114021	1	2	2	2	7		4	1	13	2	2	2	2	7	6	4	1	2	2	2	1	2	2	1	2	2	1	9	12	8		11	11				
20	GOKULKUMAR A	421216114022	2	1		1	7	5	5	9	1					8	5	4	13			1	1	2	1	3	7	8	11	8		8	11						
21	HARISIA K	421216114023	2	2	1	2	1	5	2	14	2	2	2	2	2	8	6	3	11	2	2	2	2	1	2	1	2	11	12	8		1	13						
22	KABILAN P	421216114024	1	2	2	2	6	4	3	14	2	2	2	2	2	8	5	4	11	2	2	2	2	2	2	2	2	2	1	2	12	11	9		11	9	14		
23	KALAIYARASAN K	421216114026	1	1	1	2	1	5	4	4	12	2	1	2		7	5	4	9	2	1	2	2	2	2	1	2	2	1	9	8	8		6	1	11			
24	KARTHIK S	421216114028	2	2	1	1	4	4	1	12	2	1	2	1		8	4	3	13	2	1	2		2	1	1	11	9	1		5	11	12						
25	KAVIARASAN M K	421216114029	1	1	1	2	1	7	4	2	13			1	2	8	5	1	12	2	1	2	1	2	2	2	2	2	1	1	8	12		7	12	1			
26	KESAVAN S	421216114030	2	2	2	2	6	5	3	13	2	2	2	2	2	8	6	3	11	2	2	2	2	2	2	2	2	2	1	11	1		12	11		14			
27	KRISHNARAJ B	421216114031	2	2	2	2	7	4	4	12	2	2	2	2	2	7	5	4	11	2	2	1	2	2	1	2	2	2	12	12		1	5	14					
28	KUMARAN A	421216114032	2	2	2	2	5		5	2	13	2	2	2	2	8	6	3	11	2	2	2	2	2	2	2	2	2	2	13	1		4	12	5	13			
29	MAHARAJAN D	421216114034	2	1	2		4		4	12	1	1	1	2	7	5	1		1	2	1	2	1	2	1	2	2	1	12	11		1	1	9		12			
30	MANIKANDAN V	421216114035	2			1	2		1	2	9	3	1		2	5			2	11	1	2	1	2	2	1	2	5	4		3	3	1	4					
31	MAVIN A	421216114036	1	1	2		6		4	2	12	3		1	2	1			3	13	2	1	2	1	2	2	2	1	5	6		9	8	5	11				
32	MUGUNILIAN S	421216114038	2	2	2	2	1		4	3	13	1	2	2	1	8			5	4	9	2	2	2	2	2	2	2	1	2	1	11		12	1	9	14		
33	MUKUNILIAN S	421216114039	1	2	1	2	6		4	4	12	1	2	2	2	8			5	1	1	2	1	2	1	2	2		11	1		11	12			12			
34	MURALIDHARAN V	421216114040				1		7	2	3	11	1	1	1	2	8			3	13				1	2			1	5	6	8		7	9		8			
35	NARESH P	421216114041	2	2	2	2	2	7	5	2	13	2	2	2	2	8	6	4	9	2	2	2	2	2	2	2	2	2	2	1	12	13		1	7		11		
36	NATARAJAN C	421216114042	2	1	1			5	3	4	13	2	2	2	2	7	4	3	11	2	2	2	2	2	2	2	2	2	2	11	12		1	7		12			
37	NETHAJI M	421216114043	2	2	1	2	4	3	2	12	1	1	1		1	7	4	4	6	1	2	2	1	2	2	2	2	2	1	9	6	5	7		7	13			
38	NISHANTH GANDHI N	421216114044				4	3	3		11	1	1	2	1	2	6	6	3	11	2	2	1	2	2			1	8	5	6	9	7		1					
39	NITHYANANDHAM A	421216114045	1	2	2	2		6	4	4	12	1	2	2	1	7	6	1	11	2	2	2	1	2	1	2	1	8	8	9	7		7		1				
40	PAIDMANABHAN P	421216114046	1	1	1	1	4	5	4	11		1		1	5	6	3		8			2	1	1	1	2	2	7	4		5	8	8		9				
41	PANNEER SELVAM R	421216114047				2	4	4		13	3		1	2	5	4	3		12		2	1	2	2	1														





# KARPAGA VINAYAGA

## COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai and Accredited by NAAC)  
GST Road, Chinnakolambakkam, Madhuranthagam Taluk, Chengalpattu District – 603 308, Tamil Nadu

### Consolidated CO Marks in Internal Assessment Test

Sl No	Student Name	Total CO marks in IAT																	
		CO 1			CO 2			CO 3			CO 4			CO 5			CO 6		
		Scored	Max Marks	%	Scored	Max Marks	%	Scored	Max Marks	%	Scored	Max Marks	%	Scored	Max Marks	%	Scored	Max Marks	%
1	AKASH A	24	42	57.14	22	42	52.38	17	42	40.48	17	42	40.48	10	17	58.82	1	15	6.67
2	AKASH V	24	42	57.14	18	42	42.86	26	42	61.90	24	42	57.14	9	17	52.94	12	15	80.00
3	AMALI KUMAR A	30	42	71.43	27	42	64.29	31	42	73.81	30	42	71.43	13	17	76.47	13	15	86.67
4	ANAND S N	20	42	47.62	14	42	33.33	22	42	52.38	20	42	47.62	8	17	47.06	9	15	60.00
5	ANANTHAN A	18	42	42.86	20	42	47.62	24	42	57.14	16	42	38.10	9	17	52.94	1	15	6.67
6	ARAVIND G	21	42	50.00	30	42	71.43	20	42	47.62	25	42	61.90	8	17	47.06	11	15	73.33
7	ARAVIND V	20	42	47.62	21	42	50.00	29	42	69.05	14	42	33.33	9	17	52.94	11	15	73.33
8	ARAVINDAN G	26	42	61.90	22	42	52.38	26	42	61.90	26	42	61.90	10	17	58.82	11	15	73.33
9	ARUMUGASAMY G	17	42	40.48	29	42	69.05	21	42	50.00	20	42	47.62	13	17	76.47	1	15	6.67
10	ARUNACHALAM S	22	42	52.38	23	42	54.76	23	42	54.76	19	42	45.24	2	17	11.76	1	15	6.67
11	ARUN KUMAR P	22	42	52.38	21	42	50.00	19	42	45.24	26	42	61.90	12	17	70.59	1	15	6.67
12	ARUNACHALAM S	18	42	42.86	31	42	73.81	24	42	57.14	25	42	59.52	11	17	64.71	1	15	6.67
13	BHARATHI N	11	42	26.19	31	42	73.81	27	42	64.29	27	42	64.29	10	17	58.82	11	15	73.33
14	DIATIANA MOORTHY	21	42	50.00	26	42	61.90	22	42	52.38	26	42	61.90	9	17	52.94	9	15	60.00
15	DINESH D	22	42	52.38	29	42	69.05	26	42	61.90	19	42	45.24	11	17	64.71	11	15	73.33
16	DINESH N	23	42	54.76	25	42	59.52	20	42	47.62	21	42	50.00	8	17	47.06	7	15	46.67
17	DINESH I	28	42	66.67	32	42	76.19	25	42	59.52	30	42	71.43	8	17	47.06	12	15	80.00
18	DINESHKUMAR R	22	42	52.38	30	42	71.43	29	42	69.05	26	42	61.90	5	17	29.41	1	15	6.67
19	DON BOSCO I	21	42	50.00	14	42	33.33	34	42	80.95	20	42	47.62	14	17	82.35	11	15	73.33
20	GOKULKUMAR A	22	42	52.38	22	42	52.38	26	42	61.90	28	42	66.67	11	17	64.71	11	15	73.33
21	HAARISHA K	29	42	69.05	35	42	83.33	31	42	73.81	29	42	69.05	4	17	23.53	13	15	86.67
22	KARISHA P	31	42	73.81	36	42	85.71	32	42	76.19	33	42	78.57	13	17	76.47	14	15	93.33
23	KALAIYARASAN K	24	42	57.14	29	42	69.05	27	42	64.29	24	42	57.14	4	17	23.53	11	15	73.33
24	KARTHIK S	25	42	59.52	25	42	59.52	18	42	42.86	26	42	61.90	13	17	76.47	12	15	80.00
25	KAVIARASAN M K	18	42	42.86	28	42	66.67	27	42	64.29	24	42	57.14	15	17	88.24	1	15	6.67
26	KESAVAN S	32	42	76.19	25	42	59.52	25	42	59.52	34	42	80.95	14	17	82.35	14	15	93.33
27	KRISHNATHU B	33	42	78.57	35	42	83.33	33	42	78.57	23	42	54.76	9	17	52.94	14	15	93.33
28	KUMARAN A	33	42	78.57	24	42	57.14	28	42	66.67	34	42	80.95	9	17	52.94	13	15	86.67
29	MAHARAJAN D	28	42	66.67	31	42	73.81	16	42	38.10	8	42	19.05	11	17	64.71	12	15	80.00
30	MANIKANDAN V	13	42	30.95	17	42	40.48	17	42	40.48	18	42	42.86	3	17	17.65	4	15	26.67
31	MAVIN A	19	42	45.24	25	42	59.52	19	42	45.24	28	42	66.67	8	17	47.06	11	15	73.33
32	MUGUNTHAN S	10	42	23.81	35	42	83.33	34	42	80.95	20	42	47.62	13	17	76.47	14	15	93.33
33	MUKUNTHAN S	27	42	64.29	23	42	54.76	27	42	64.29	18	42	42.86	3	17	17.65	12	15	80.00
34	MURATHIHARAN V	14	42	33.33	21	42	50.00	21	42	50.00	26	42	61.90	10	17	58.82	8	15	53.33
35	NARESH P	23	42	54.76	35	42	83.33	37	42	88.10	22	42	52.38	11	17	64.71	11	15	73.33
36	NATARAJAN C	26	42	61.90	34	42	80.95	32	42	76.19	23	42	54.76	11	17	64.71	12	15	80.00
37	NETHAJI M	12	42	28.57	28	42	66.67	22	42	52.38	20	42	47.62	9	17	52.94	13	15	86.67
38	NISHANTH GANDHI N	17	42	40.48	24	42	57.14	26	42	61.90	26	42	61.90	8	17	47.06	1	15	6.67
39	NITHYANANDHAM A	27	42	64.29	32	42	76.19	30	42	71.43	21	42	50.00	10	17	58.82	1	15	6.67
40	PADMANABAN P	20	42	47.62	21	42	50.00	18	42	42.86	21	42	50.00	12	17	70.59	9	15	60.00
41	PANNEERSELVAM R	15	42	35.71	23	42	54.76	24	42	57.14	29	42	69.05	11	17	64.71	12	15	80.00
42	PRADIL P	15	42	35.71	21	42	50.00	24	42	57.14	25	42	59.52	8	17	47.06	12	15	80.00
43	PRASANNA C	22	42	52.38	26	42	61.90	19	42	45.24	21	42	50.00	9	17	52.94	7	15	46.67
44	PRATHAP D	14	42	33.33	16	42	38.10	21	42	50.00	19	42	45.24	4	17	23.53	12	15	80.00
45	PRAVEEN P	24	42	57.14	23	42	54.76	28	42	66.67	28	42	66.67	2	17	11.76	1	15	6.67
46	PRAVEENKUMAR A	20	42	47.62	28	42	66.67	22	42	52.38	31	42	73.81	11	17	64.71	1	15	6.67
47	PRAVEEN KUMAR I	24	42	57.14	29	42	69.05	27	42	64.29	11	42	26.19	9	17	52.94	11	15	73.33
48	RAJA R	8	42	19.05	13	42	30.95	14	42	33.33	14	42	33.33	1	17	5.88	12	15	80.00
49	RAJESH K	33	42	78.57	35	42	83.33	35	42	83.33	33	42	78.57	5	17	29.41	14	15	93.33
50	RISHITH ABINASH A	14	42	33.33	31	42	73.81	27	42	64.29	26	42	61.90	10	17	58.82	11	15	73.33
51	SAM VINSTON	25	42	59.52	25	42	59.52	19	42	45.24	28	42	66.67	9	17	52.94	12	15	80.00
52	SANTHAN S	25	42	59.52	26	42	61.90	27	42	64.29	21	42	50.00	4	17	23.53	1	15	6.67
53	SATHISH KUMAR V	22	42	52.38	27	42	64.29	25	42	59.52	28	42	66.67	11	17	64.71	1	15	6.67
54	SATHISHWARAN P	16	42	38.10	16	42	38.10	21	42	50.00	25	42	59.52	7	17	41.18	12	15	80.00
55	SATHRIYAN K	20	42	47.62	13	42	30.95	21	42	50.00	14	42	33.33	4	17	23.53	9	15	60.00
56	SELVAGANESH M	18	42	42.86	28	42	66.67	29	42	69.05	26	42	61.90	10	17	58.82	1	15	6.67
57	SHEIK FARUK S	14	42	33.33	28	42	66.67	22	42	52.38	18	42	42.86	11	17	64.71	11	15	73.33
58	SIYAM SUNDAR K	11	42	26.19	20	42	47.62	14	42	33.33	14	42	33.33	6	17	35.29	12	15	80.00
59	SIRI N T	27	42	64.29	27	42	64.29	23	42	54.76	11	42	26.19	9	17	52.94	11	15	73.33
60	SIVANLAKSH K	16	42	38.10	23	42	54.76	26	42	61.90	28	42	66.67	10	17	58.82	11	15	73.33
61	SUNDARA MANIKANDAN	20	42	47.62															



# KARPAGA VINAYAGA

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GST Road, Chinnakolambakkam, Madhuranthagam Taluk, Chengalpattu District – 603 308, Tamil Nadu

### Consolidated CO Marks in Semester End Examination

Sl No	Student Name	Semester End University Marks	Max. Grade Point – 10	Total CO marks in SEE																	
		Obtained Grade	Grade Points	CO 1			CO 2			CO 3			CO 4			CO 5			CO 6		
				Scored	Max Grade points	%	Scored	Max Grade points	%	Scored	Max Grade points	%	Scored	Max Grade points	%	Scored	Max Grade points	%	Scored	Max Grade points	%
1	AKASH A	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
2	AKASH V	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
3	AMIT KUMAR A	C	7	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00
4	ANAND S N	F	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
5	ANANTHAN A	F	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
6	ARAVIND G	F	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
7	ARAVIND V	E	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
8	ARAVINDAN G	E	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
9	ARUMUGASAMY G	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
10	ARUNACHALAM S	F	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
11	ARUN KUMAR P	UA	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
12	AVINASH M	C	7	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00
13	BIJARATHI N	C	7	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00
14	DHATCHANA MOORTHY S	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
15	DINESH D	C	7	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00
16	DINESH N	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
17	DINESH T	C	7	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00
18	DINESHKUMAR R	F	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
19	DON BOSE L	C	7	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00
20	GOKULKUMAR A	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
21	HARISHA K	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
22	KARUN P	D	6	1.00	1.67	60.00	1.00	1.67	60.00	1.00	1.67	60.00	1.00	1.67	60.00	1.00	1.67	60.00	1.00	1.67	60.00
23	KATAYARASAN K	E	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
24	KARTHIICKS	C	7	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00
25	KAVIARASAN M K	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
26	KESAVAN S	C	7	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00
27	KRISHNARATHI	E	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
28	KUMARAN A	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
29	MAHARAJAN D	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
30	MANIKANDAN V	UA	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
31	MAVIN A	E	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
32	MUGUNTHAN S	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
33	MUKUNTHAN S	F	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
34	MUKULIDHARAN V	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
35	NARAYAN P	D	6	1.00	1.67	60.00	1.00	1.67	60.00	1.00	1.67	60.00	1.00	1.67	60.00	1.00	1.67	60.00	1.00	1.67	60.00
36	NATARAJAN C	B	8	1.33	1.67	80.00	1.33	1.67	80.00	1.33	1.67	80.00	1.33	1.67	80.00	1.33	1.67	80.00	1.33	1.67	80.00
37	NETTATHI M	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
38	NISHANTH GANDHI N	F	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
39	NITHYANANDHAM A	F	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
40	PAIDYANAHAN P	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
41	PANNIRSELVAM R	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
42	PRADEEP R	C	7	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00
43	PRASANNA C	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
44	PRATHAP D	UA	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
45	PRAVEEN P	E	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
46	PRAVEENKUMAR A	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
47	PRAVEEN KUMAR J	F	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
48	RAJA K	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
49	RAJINI K	E	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
50	RISHITHARINASI A	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
51	SAM VINESTON	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
52	SANTHAN S	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
53	SATHISHI KUMAR V	F	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
54	SATHISHWARAN P	F	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
55	SATHRIYAN K	C	7	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00
56	SELVAGANESH M	C	7	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00
57	SHEIK FARUK S	C	7	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00	1.17	1.67	70.00
58	SHYAM SUNDAR K	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
59	SIBU N I	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
60	SIVANISAN K	E	5	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00	0.83	1.67	50.00
61	SUNDARA MANIKANDAN	U	0	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00	0.00	1.67	0.00
62	SURYA N	C	7	1.17	1.67	70.00	1														





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### Indirect CO Attainment Calculation

Attainment Level	Target for Course Exit Survey
3	$\geq 80\%$ of the students have to select strongly agree or slightly agree
2	70-79% of the students have to select strongly agree or slightly agree
1	60-69% of the students have to select strongly agree or slightly agree

COs	Excellent	Very good	Good	Satisfactory	Poor	SUM (Total students)	SUM (Students who gave Excellent or Very good)	Attained Exit Survey %	Attainment Level
CO1	42	22	10	4	0	78	64	82.05	3
CO2	43	22	10	3	0	78	65	83.33	3
CO3	45	20	12	1	0	78	65	83.33	3
CO4	42	15	8	13	0	78	57	73.08	2
CO5	46	20	11	1	0	78	66	84.62	3
CO6	50	10	15	3	0	78	60	76.92	2

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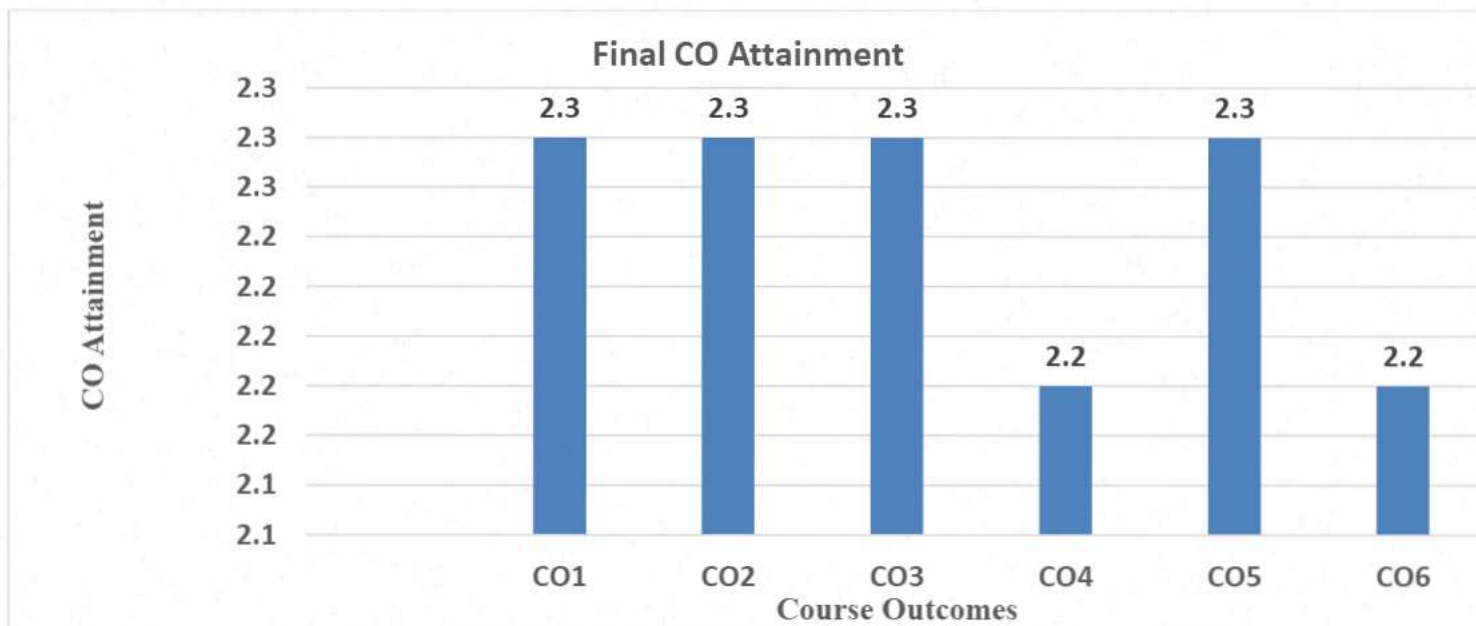
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### Final CO Attainment

COs	IAT	SEE	Direct Attainment		Indirect Attainment		Total Attainment	
	100%	100%	$A = (0.8 \times SEE) + (0.2 \times IAT)$	B= 90% of A	C = Course Exit Survey 100%	D= 10% of C	E=B+D	% Attainment
CO1	3	2	2.2	1.98	3	0.3	2.3	76
CO2	3	2	2.2	1.98	3	0.3	2.3	76
CO3	3	2	2.2	1.98	3	0.3	2.3	76
CO4	3	2	2.2	1.98	2	0.2	2.2	73
CO5	3	2	2.2	1.98	3	0.3	2.3	76
CO6	3	2	2.2	1.98	2	0.2	2.2	73



*[Signature]*  
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### Program level CO Attainment for the Academic batch 2014-18, 2015-19, 2016-20

Sl.No	Course Code	Sub Code	Subject	Fixed Threshold (Average results of three academic years)	2014-2018		2015-2019		2016-2020	
					% of attainment	Attainment level	% of attainment	Attainment level	% of attainment	Attainment level
I Semester										
1	C101	HS6151	Technical English – I	50	77.23	3	73.91	3	71.08	3
2	C102	MA6151	Mathematics – I	50	41.63	2	50	2	50.6	2
3	C103	PH6151	Engineering Physics – I	50	78.22	3	43.48	2	81.93	3
4	C104	CY6151	Engineering Chemistry – I	50	68.32	3	61.96	3	80.72	3
5	C105	GE6151	Computer Programming	50	64.4	3	48.91	2	86.75	3
6	C106	GE6152	Engineering Graphics	50	46.53	2	70.65	3	85.54	3
7	C107	GE6161	Computer Practices Laboratory	85	99.01	3	86.96	3	81.93	3
8	C108	GE6162	Engineering Practices Laboratory	85	99.01	3	97.83	3	83.13	3
9	C109	GE6163	Physics and Chemistry Laboratory – I	85	99.01	3	94.57	3	98.8	3
II Semester										
10	C110	HS6251	Technical English – II	55	75.25	3	84.44	3	86.42	3
11	C111	MA6251	Mathematics – II	50	52.48	2	43.11	1	30.12	1
12	C112	PH6251	Engineering Physics – II	50	62.38	3	44.44	2	30.38	1
13	C113	CY6251	Engineering Chemistry – II	50	72.28	3	56.67	2	60.49	2
14	C114	GE6252	Basic Electrical and Electronics Engineering	50	46.53	2	54.44	2	49.91	2
15	C115	GE6253	Engineering Mechanics	50	62.38	3	46.67	2	43.21	2
16	C116	GE6261	Computer Aided Drafting and Modeling Lab	85	100	3	71.11	3	91.36	3
17	C117	GE6262	Physics and Chemistry Laboratory – II	80	100	3	95.56	3	91.36	3
III Semester										
18	C201	MA6351	Transforms and Partial Differential Equations	50	30.1	1	45.36	2	63.64	3
19	C202	CE6402	Strength of Materials	50	55.17	2	70.1	3	55.68	2
20	C203	ME6301	Engineering	50	54.31	2	58.76	2	63.64	3

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			Thermodynamics							
21	C204	CE6451	Fluid Mechanics and Machinery	50	58.62	2	45.36	2	67.05	3
22	C205	ME6302	Manufacturing Technology – I	50	59.48	2	41.23	1	67.05	3
23	C206	EE6351	Electrical Drives and Controls	50	43.03	2	78.35	3	90.91	3
24	C207	ME6311	Manufacturing Technology Laboratory – I	85	93.97	3	92.78	3	89.77	3
25	C208	CE6461	Fluid Mechanics and Machinery Laboratory	85	61.21	3	73.2	3	90.91	3
26	C209	EE6365	Electrical Engineering Laboratory	85	71.55	3	86.6	3	93.18	3
IV Semester										
27	C210	MA6452	Statistics and Numerical Methods	50	63.48	3	45.26	1	43.68	1
28	C211	ME6401	Kinematics of Machinery	50	49.57	1	42.63	1	32.19	1
29	C212	ME6402	Manufacturing Technology– II	50	63.48	3	46.32	2	55.17	2
30	C213	ME6403	Engineering Materials and Metallurgy	50	67.83	3	61.05	3	72.41	3
31	C214	GE6351	Environmental Science and Engineering	50	61.74	3	63.16	3	52.87	2
32	C215	ME6404	Thermal Engineering	50	46.96	2	42.37	1	50.57	2
33	C216	ME6411	Manufacturing Technology Laboratory–II	85	86.09	3	85.26	3	98.85	3
34	C217	ME6412	Thermal Engineering Laboratory – I	85	90.43	3	69.47	3	98.85	3
35	C218	CE6315	Strength of Materials Laboratory	85	76.52	3	71.58	3	96.55	3
V Semester										
36	C301	ME6501	Computer Aided Design	50	74.78	3	66.67	3	40.48	2
37	C302	ME6502	Heat and Mass Transfer	50	58.26	2	52.69	2	45.24	2
38	C303	ME6503	Design of Machine Elements	50	65.22	3	51.61	2	31.23	1
39	C304	ME6504	Metrology and Measurements	50	83.48	3	72.04	3	34.56	1
40	C305	ME6505	Dynamics of Machines	50	60.87	3	48.39	2	30.06	1
41	C306	GE6075	Professional Ethics in Engineering	60	66.09	3	65.59	3	63.1	3
42	C307	ME6511	Dynamics Laboratory	85	97.39	3	77.42	3	83.33	3
43	C308	ME6512	Thermal Engineering	90	79.13	3	77.42	3	98.81	3

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			Laboratory-II							
44	C309	ME6513	Metrology and Measurements Laboratory	85	92.17	3	92.47	3	84.52	3
VI Semester										
45	C310	ME6601	Design of Transmission Systems	50	58.26	2	51.61	2	48.81	2
46	C311	MG6851	Principles of Management	50	75.65	3	44.09	2	58.33	2
47	C312	ME6602	Automobile Engineering	50	79.13	3	55.91	2	63.1	3
48	C313	ME6603	Finite Element Analysis	50	62.61	3	43.33	1	31.05	1
49	C314	ME6604	Gas Dynamics and Jet Propulsion	50	66.96	3	41.94	2	31.57	1
50	C315	ME6004	Unconventional Machining Processes	60	84.35	3	61.29	3	71.43	3
51	C316	ME6611	C.A.D. / C.A.M. Laboratory	85	86.09	3	73.12	3	98.81	3
52	C317	ME6612	Design and Fabrication Project	90	99.13	3	100	3	97.62	3
53	C318	GE6563	Communication Skills - Laboratory Based	85	95.65	3	98.92	3	78.57	3
VII Semester										
54	C401	ME6701	Power Plant Engineering	50	80.7	3	52.08	2	*	*
55	C402	ME6702	Mechatronics	50	79.82	3	75	3	*	*
56	C403	ME6703	Computer Integrated Manufacturing Systems	50	69.3	3	70.83	3	*	*
57	C404	GE6757	Total Quality Management	55	78.07	3	62.5	3	*	*
58	C405	ME6005	Process Planning and Cost Estimation	50	61.4	3	55.21	2	*	*
59	C406	ME 6012	Maintenance Engineering	55	82.46	3	65.63	3	*	*
60	C407	ME6711	Simulation and Analysis Laboratory	90	87.72	3	66.67	3	*	*
61	C408	ME6712	Mechatronics Laboratory	95	92.98	3	61.46	3	*	*
62	C409	ME6713	Comprehension	95	100	3	100	3	*	*
VIII Semester										
63	C410	MG6853	Engineering Economics	60	71.93	3	62.5	3	*	*
64	C411	IE6605	Production Planning and Control	60	84.21	3	71.88	3	*	*
65	C412	ME6016	Advanced I.C. Engines	50	77.19	3	71.88	3	*	*
66	C413	ME6811	Project Work	95	94.74	3	97.92	3	*	*

*[Signature]*

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### \* - Attainment of Course Outcomes (VII and VIII SEM) (2016-2020 batch)

Course Code	Sub Code	Subject	COs	Attainment Percentage	Attainment level
C401	ME6701	Power Plant Engineering	C401.1	76.00	2.28
			C401.2	73.33	2.36
			C401.3	76.00	2.28
			C401.4	72.00	2.16
			C401.5	73.33	2.36
			C401.6	72.00	2.16
C402	ME6702	Mechatronics	C402.1	76.00	2.28
			C402.2	73.33	2.20
			C402.3	76.00	2.28
			C402.4	72.00	2.16
			C402.5	73.33	2.20
			C402.6	72.00	2.16
C403	ME6703	Computer Integrated Manufacturing Systems	C403.1	57.33	1.72
			C403.2	52.00	1.56
			C403.3	57.33	1.72
			C403.4	50.67	1.52
			C403.5	57.33	1.72
			C403.6	50.67	1.52
C404	GE6757	Total Quality Management	C404.1	76.00	2.28
			C404.2	73.33	2.2
			C404.3	76.00	2.28
			C404.4	72.00	2.16
			C404.5	68.00	2.04
			C404.6	72.00	2.16
C405	ME6005	Process Planning and Cost Estimation	C405.1	76.00	2.28
			C405.2	76.00	2.28
			C405.3	76.00	2.28
			C405.4	72.67	2.18
			C405.5	76.00	2.28
			C405.6	72.67	2.18
C406	ME6012	Maintenance Engineering	C406.1	76.00	2.28

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			C406.2	73.33	2.2
			C406.3	76.00	2.28
			C406.4	72.00	2.16
			C406.5	68.00	2.04
			C406.6	72.00	2.16
C407	ME6711	Simulation and Analysis Laboratory	C407.1	100.00	3
			C407.2	100.00	3
			C407.3	100.00	3
			C407.4	93.33	2.8
			C407.5	100.00	3
			C407.6	93.33	2.8
C408	ME6712	Mechatronics Laboratory	C408.1	100.00	3
			C408.2	100.00	3
			C408.3	100.00	3
			C408.4	93.33	2.8
			C408.5	100.00	3
			C408.6	93.33	2.8
C409	ME6713	Comprehension	C409.1	100.00	3
			C409.2	100.00	3
			C409.3	100.00	3
			C409.4	93.33	2.8
			C409.5	100.00	3
			C409.6	93.33	2.8
C410	MG6853	Engineering Economics	C410.1	57.33	1.72
			C410.2	52.00	1.56
			C410.3	57.33	1.72
			C410.4	50.67	1.52
			C410.5	52.00	1.56
			C410.6	50.67	1.52
C411	IE6605	Production Planning and Control	C411.1	57.33	1.72
			C411.2	52.00	1.56
			C411.3	57.33	1.72
			C411.4	45.33	1.36
			C411.5	52.00	1.56
			C411.6	50.67	1.52

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C412	ME6016	Advanced I.C. Engines	C412.1	76.00	2.28
			C412.2	73.33	2.2
			C412.3	78.67	2.36
			C412.4	72.00	2.16
			C412.5	76.00	2.28
			C412.6	72.00	2.16
C413	ME6811	Project Work	C413.1	100.00	3
			C413.2	100.00	3
			C413.3	100.00	3
			C413.4	93.33	2.8
			C413.5	100.00	3.00
			C413.6	93.33	2.80

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# KARPAGA VINAYAGA

## COLLEGE OF ENGINEERING AND TECHNOLOGY

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### Assessment tools and processes used for measuring the attainment of POs and PSOs

Assessment Tool Type	Assessment Tool Title	Tool Description
Direct Assessment Tools	COs attained	The CO values of theory, laboratory and project courses with appropriate weightage as per CO-PO mapping are taken into account for calculation of direct attainment of PO's and PSO's.
	Co-curricular & Extra Curricular Activities	Assessment in the form of Quiz, seminar presentation will be conducted at the end of the each activity and the results will be used to calculate the attainment of PO6 to PO12 and PSOs
Indirect Assessment Tools	Graduate Exit Survey	An exit Survey on 5-point rating scale is conducted towards the closure of the programme to measure the self- assessment of students in terms of attainment of <b>POs</b>
	Alumni Survey	An Alumni Survey on 5-point rating scale is conducted to collect variety of information about program satisfaction from our Graduates end.
	Employer Survey	An Employer Survey on 5-point rating scale is conducted to collect information about our graduate's skills and capability.

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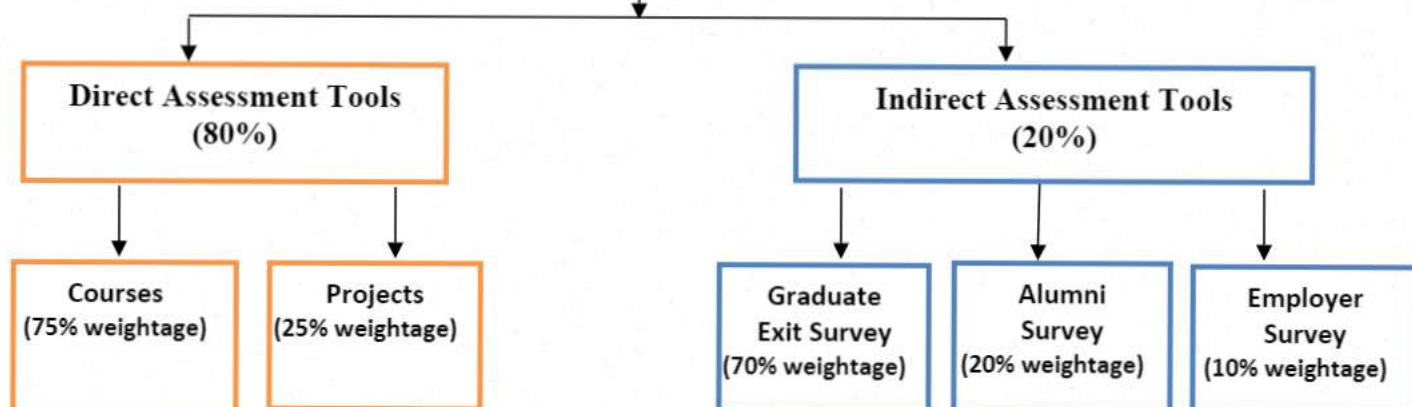
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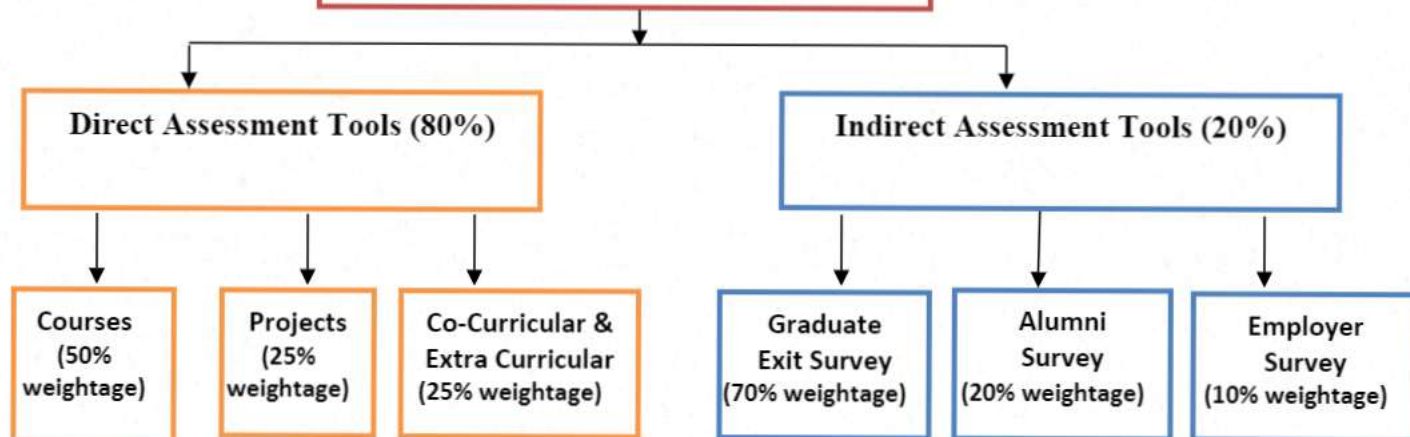
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### PO & PSO assessment tools

#### POs Assessment (For PO1 to PO5)




#### POs & PSOs Assessment (For PO6 to PO12 & PSO1 & PSO2)



#### Target and Attainment level for Co-Curricular and Extra Curricular Activities

3 (High)	If $\geq 60$ % of students should score <b>more than class average</b>
2 (Moderate)	If $\geq 50$ to $< 60$ % of students should score <b>more than class average</b>
(Low)	If $< 50$ % of students should score <b>more than class average</b>

  
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### Calculation of PO -PSO attainment

PO-PSO Attainment	Weightage	Assessment Tools
Direct PO -PSO Attainment	80%	CO attainment of Courses CO attainment of Courses, Projects, Co-curricular and Extra Curricular Activities
Indirect PO-PSO Attainment	20%	<b>Graduate Exit survey</b> (70% contribution)
		<b>Alumni Survey</b> (20% contribution)
		<b>Employer Survey</b> (10% contribution)
Overall PO -PSO Attainment	<b>[Direct Attainment * 0.8 +Indirect Attainment * 0.2]</b>	

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### PO, PSO Attainment for Courses

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C101	-	-	-	-	-	-	-	-	2.0	3.0	-	1.0	1.0	-
C102	2.0	1.0	1.0	-	-	-	-	-	-	-	-	1.0	1.0	-
C103	2.0	1.0	-	-	-	-	-	-	-	-	-	1.0	1.0	2.0
C104	2.0	1.0	-	-	-	-	1.0	-	-	-	-	1.0	1.0	-
C105	3.0	2.0	1.0	1.0	-	-	-	-	-	-	-	1.0	1.0	-
C106	3.0	2.0	1.0	1.0	-	-	-	1.0	1.0	2.0	-	2.0	2.0	-
C107	2.0	2.0	1.0	-	2.0	-	-	2.0	2.0	1.0	-	-	-	1.0
C108	2.0	1.0	-	-	1.0	-	-	2.0	2.0	1.0	-	-	2.0	-
C109	2.0	1.0	-	-	1.0	1.0	1.0	2.0	2.0	1.0	-	-	1.0	-
C110	-	-	-	-	-	-	-	-	1.0	3.0	-	-	1.0	-
C111	1.0	1.0	1.0	-	-	-	-	-	-	-	-	1.0	1.0	-
C112	1.0	1.0	-	-	-	1.0	1.0	-	-	-	-	1.0	1.0	-
C113	2.0	1.0	-	-	-	1.0	1.0	-	-	-	-	1.0	1.0	-
C114	1.0	1.0	-	-	-	-	-	-	-	-	-	1.0	1.0	-
C115	2.0	1.0	1.0	1.0	-	-	-	-	-	-	-	1.0	1.0	-
C116	2.0	1.0	-	-	3.0	-	-	2.0	2.0	1.0	-	-	3.0	3.0
C117	2.0	-	-	-	-	-	-	2.0	2.0	1.0	-	-	1.0	-
C201	3.0	2.0	2.0	1.0	-	-	-	-	-	-	-	2.0	1.0	-
C202	2.0	1.0	1.0	1.0	-	-	-	-	-	-	-	1.0	2.0	-

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C203	3.0	2.0	1.0	1.0	-	-	-	-	-	-	-	2.0	3.0	-
C204	3.0	2.0	1.0	1.0	-	-	-	-	-	-	-	2.0	3.0	-
C205	2.0	1.0	-	-	-	-	-	-	-	-	-	1.0	3.0	-
C206	2.0	1.0	1.0	-	-	-	-	-	-	-	-	1.0	2.0	-
C207	2.0	2.0	1.0	-	2.0	-	-	2.0	2.0	1.0	-	-	3.0	-
C208	2.0	1.0	1.0	-	-	-	-	-	2.0	1.0	-	-	2.0	-
C209	2.0	-	-	-	-	-	-	-	2.0	1.0	-	-	2.0	-
C210	2.0	2.0	1.0	-	-	-	-	-	-	-	-	1.0	1.0	-
C211	1.0	1.0	1.0	1.0	-	-	-	-	-	-	-	1.0	1.0	-
C212	1.0	1.0	-	-	-	-	-	-	-	-	-	1.0	2.0	-
C213	2.0	2.0	1.0	-	-	1.0	1.0	-	-	-	-	1.0	3.0	-
C214	1.0	1.0	1.0	1.0	-	1.0	2.0	-	-	-	-	1.0	1.0	-
C215	2.0	1.0	1.0	1.0	-	-	-	-	-	-	-	1.0	2.0	-
C216	2.0	1.0	-	-	1.0	-	-	1.0	2.0	1.0	-	-	3.0	-
C217	3.0	2.0	2.0	1.0	1.0	-	-	1.0	2.0	1.0	-	-	3.0	-
C218	2.0	2.0	1.0	1.0	1.0	-	-	1.0	1.0	1.0	-	-	3.0	-
C301	2.0	1.0	-	-	1.0	-	-	-	-	-	-	1.0	1.0	2.0
C302	2.0	1.0	1.0	-	-	-	-	-	-	-	-	1.0	2.0	-
C303	1.0	1.0	1.0	-	-	-	-	1.0	-	-	-	1.0	1.0	1.0
C304	1.0	1.0	-	-	-	-	-	-	-	-	-	1.0	1.0	-
C305	1.0	1.0	1.0	1.0	-	-	-	-	-	-	-	1.0	1.0	-
C306	-	-	-	-	-	3.0	1.0	3.0	-	-	-	1.0	3.0	-
C307	2.0	1.0	-	-	1.0	-	-	1.0	1.0	1.0	-	-	2.0	-

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C308	2.0	1.0	-	-	-	-	-	1.0	1.0	1.0	-	-	2.0	-
C309	2.0	1.0	-	-	-	-	-	1.0	1.0	1.0	-	-	2.0	-
C310	2.0	1.0	1.0	1.0	-	-	-	1.0	-	-	-	1.0	2.0	1.0
C311	-	-	-	-	-	1.0	-	2.0	-	-	2.0	1.0	1.0	-
C312	2.0	1.0	-	-	-	2.0	2.0	-	-	-	-	1.0	3.0	-
C313	1.0	1.0	1.0	1.0	-	-	-	-	-	-	-	1.0	1.0	-
C314	1.0	1.0	1.0	1.0	-	-	-	-	-	-	-	1.0	1.0	-
C315	2.0	1.0	-	-	-	-	-	-	-	-	-	1.0	3.0	-
C316	2.0	2.0	1.0	-	3.0	-	-	-	1.0	2.0	3.0	-	3.0	3.0
C317	3.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
C318	-	-	-	-	-	-	-	1.0	2.0	3.0	-	-	1.0	-
C401	2	1				2	2	2				1	2	
C402	2	1	1	1								1	2	
C403	1	1	1			2						1	2	1
C404	1	1				1		2			1	1	2	
C405	1	1	1	1							2	1	2	
C406	1	1				1	1					1	1	
C407	3	2	1	1	2			1	2				3	3
C408	2	1			2			1	1				2	2
C409	2	2	2	2	2	2	2	2	2	2	2	2	2	2
C410	1	1									2	1	1	
C411	1	1									1	1	1	
C412	2	1				1	2					1	2	

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<b>C413</b>	3.00	3.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
<b>Course Attainment (A)</b>	1.85	1.28	1.12	1.14	1.75	1.56	1.64	1.62	1.83	1.64	2.12	1.2	1.85	2.15

### PO, PSO Attainment for co-curricular and extra - curricular activities

S. No	Event Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	Curriculum Gap	2.70	2.50	1.80	1.80	2.20	1.50	1.00		3.00		3.00	2.70	2.70	2.60
2	Industry Campus Lectures	3.00					2.00	2.00	3.00	2.00		2.00	3.00	2.30	
3	Professional Society Activities/Club/ outreach activities	3.00	3.00	2.00	2.00	2.50	3.00	3.00	2.00	2.30	2.00	2.00	2.00	2.75	3.00
4	Internship	3.00	3.00	3.00	3.00	1.00	1.00	1.00	3.00	3.00	3.00	1.40	3.00	3.00	3.00
5	Industrial Visit	3.00	3.00	2.00	2.00	2.00			2.00	3.00	2.00	3.00	3.00	3.00	
Average		2.94	2.88	2.20	2.20	1.93	1.88	1.75	2.50	2.66	2.33	2.28	2.74	2.75	2.87

### PO, PSO Attainment for Projects

S.No	Event Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	Project	3.00	3.00	2.00	1.70	3.00	3.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

*[Signature]*

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### PO-PSO Direct Attainment for 2016-2020 Batch

POs/PSOs	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012	PS01	PS02
Course Attainment (A)	1.85	1.28	1.12	1.14	1.75	1.56	1.64	1.62	1.83	1.64	2.12	1.2	1.85	2.15
75% of (A) for P01 to P05 & 50% of (A) for P06 to P012, PS01 & PS02 (X)	1.39	0.96	0.84	0.86	1.31	0.78	0.82	0.81	0.92	0.82	1.06	0.60	0.93	1.08
Project Attainment (B)	3.00	3.00	2.00	1.70	3.00	3.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
25% of (B) (Y)	0.75	0.75	0.50	0.43	0.75	0.75	0.50	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Co-Curricular Extra Curricular attainment (C)	1.75	1.50	1.12	1.03	1.70	1.52	1.24	1.55	1.62	1.55	1.73	1.39	1.63	1.74
25% of (C) for P06 to P012, PS01 & PS02 (Z)	-	-	-	-	-	0.38	0.31	0.39	0.41	0.39	0.43	0.35	0.41	0.44
Total Direct Attainment (X+Y+Z)	2.14	1.71	1.34	1.28	2.06	1.91	1.63	1.95	2.07	1.96	2.24	1.70	2.08	2.26

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### PO-PSO Indirect Attainment

Consolidated PO-PSO Attainment from Graduate Survey:

Attainment level	Target for graduate exit survey
3	$\geq 80\%$ of the students have to select <b>excellent or very good</b>
2	70-79% of the students have to select <b>excellent or very good</b>
1	60-69% of the students have to select <b>excellent or very good</b>

POs-PSOs	Excellent	Very good	Good	Satisfactory	Poor	SUM (Total students)	SUM (Students who gave excellent or very good)	Attained Exit Survey %	Attainment level	70% graduate survey
PO1	50	9	-	-	-	59	59	100.00	3.00	2.10
PO2	17	40	2	-	-	59	57	96.61	3.00	2.10
PO3	39	12	8	-	-	59	51	86.44	3.00	2.10
PO4	33	17	8	-	-	59	50	84.75	3.00	2.10
PO5	39	13	7	-	-	59	52	88.14	3.00	2.10
PO6	41	14	4	-	-	59	55	93.22	3.00	2.10
PO7	44	10	5	-	-	59	54	91.53	3.00	2.10
PO8	32	26	1	-	-	59	58	98.31	3.00	2.10
PO9	34	22	3	-	-	59	56	94.92	3.00	2.10
PO10	33	25	1	-	-	59	58	98.31	3.00	2.10
PO11	31	26	2	-	-	59	57	96.61	3.00	2.10

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PO12	42	17	-	-	-	59	59	100.00	3.00	2.10
PSO1	41	15	3	-	-	59	56	94.92	3.00	2.10
PSO2	38	12	9	-	-	59	50	84.75	3.00	2.10

### Consolidated PO-PSO Attainment from Alumni Survey:

Attainment level	Target for alumni survey
3	$\geq 80\%$ of the students have to select <b>excellent or very good</b>
2	70-79% of the students have to select <b>excellent or very good</b>
1	60-69% of the students have to select <b>excellent or very good</b>

POs-PSOs	Excellent	Very good	Good	Satisfactory	Poor	SUM (Total students)	SUM (Students who gave excellent or very good)	Attained Exit Survey %	Attainment level	20% Alumni survey
PO1	34	8	3	-	-	45	42	93.33	3.00	0.60
PO2	38	6	1	-	-	45	44	97.78	3.00	0.60
PO3	33	4	8	-	-	45	37	82.22	3.00	0.60
PO4	36	5	4	-	-	45	41	91.11	3.00	0.60
PO5	38	3	4	-	-	45	41	91.11	3.00	0.60
PO6	36	6	3	-	-	45	42	93.33	3.00	0.60
PO7	34	3	8	-	-	45	37	82.22	3.00	0.60
PO8	33	7	5	-	-	45	40	88.89	3.00	0.60
PO9	38	5	2	-	-	45	43	95.56	3.00	0.60

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PO10	33	8	4	-	-	45	41	91.11	3.00	0.60
PO11	34	4	7	-	-	45	38	84.44	3.00	0.60
PO12	40	2	3	-	-	45	42	93.33	3.00	0.60
PSO1	31	5	9	-	-	45	36	80	3.00	0.60
PSO2	28	10	7	-	-	45	38	84.44	3.00	0.60

### Consolidated PO-PSO Attainment from Employer Survey:

Attainment level	Target for employer survey
3	$\geq 80\%$ of the students have to select <b>excellent or very good</b>
2	70-79% of the students have to select <b>excellent or very good</b>
1	60-69% of the students have to select <b>excellent or very good</b>

POs-PSOs	Excellent	Very good	Good	Satisfactory	Poor	SUM (Total employer)	SUM (Employers who gave excellent or very good)	Attained Exit Survey %	Attainment level	10% Employer survey
PO1	7	-	1	-	-	8	7	87.50	3.00	0.30
PO2	6	1	1	-	-	8	7	87.50	3.00	0.30
PO3	6	2	-	-	-	8	6	100.00	3.00	0.30
PO4	6	2	-	-	-	8	7	100.00	3.00	0.30
PO5	7	1	-	-	-	8	8	100.00	3.00	0.30
PO6	5	3	-	-	-	8	7	100.00	3.00	0.30

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PO7	6	1	1	-	-	8	8	87.50	3.00	0.30
PO8	6	2	-	-	-	8	7	100.00	3.00	0.30
PO9	8	-	-	-	-	8	8	100.00	3.00	0.30
PO10	7	1	-	-	-	8	8	100.00	3.00	0.30
PO11	5	2	1	-	-	8	7	87.50	3.00	0.30
PO12	4	3	1	-	-	8	7	87.50	3.00	0.30
PSO1	5	2	1	-	-	8	7	87.5	3.00	0.30
PSO2	4	3	1	-	-	8	7	87.5	3.00	0.30

### Overall PO-PSO Indirect Attainment

POs/PSOs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
70% of Graduate Exit Survey	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
20% of Alumni Survey	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
10% of Employer Survey	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total Indirect Attainment	3	3	3	3	3	3	3	3	3	3	3	3	3	3

Principal

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Chengalpattu District





# KARPAGA VINAYAGA

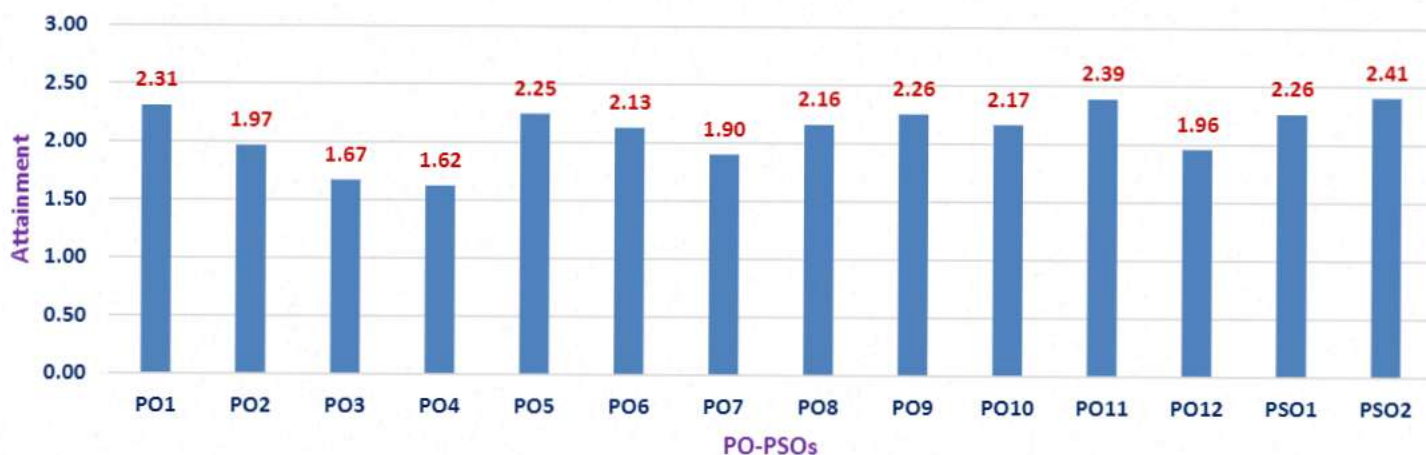
## COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai and Accredited by NAAC)  
GST Road, Chinnakolambakkam, Madhuranthagam Taluk, Chengalpattu District – 603 308, Tamil Nadu

### Overall PO – PSO Attainment for the batch 2016-20

POs/PSOs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Direct Attainment	2.14	1.71	1.34	1.28	2.06	1.91	1.63	1.95	2.07	1.96	2.24	1.7	2.08	2.26
80% of Direct Attainment (A)	1.71	1.37	1.07	1.02	1.65	1.53	1.30	1.56	1.66	1.57	1.79	1.36	1.66	1.81
Indirect Attainment	3	3	3	3	3	3	3	3	3	3	3	3	3	3
20% of Indirect Attainment (B)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Total Attainment (A+B)	2.31	1.97	1.67	1.62	2.25	2.13	1.90	2.16	2.26	2.17	2.39	1.96	2.26	2.41

### PO-PSO Attainment for the Batch 2016-2020



*[Signature]*

Principal

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