

Department of Mechanical Engineering

Course Outcomes - Academic Year 2019-20 3rd Semester

SL NO	SUBJECT	COURSE OUTCOMES	BTL
1	Engineering Economics	CO# Students will be able to :	
		CO1 Understand the scope, basics of the Economics and able to explain the demand and supply for maintaining the market equilibrium.	2
		CO2 Explain the law of production and understand the analysis of the cost, revenue and its minimization.	2
		CO3 Understand the market structure and break even analysis	2
		CO4 Explain the effect of interest and depreciation capital assets and apply the engineering project cost evaluation for various projects.	3
		CO5 Explain the inflation, cause and measures and understand the banking system	2
		CO6 Perform and evaluate payback period and capitalized cost on one or more economic alternatives.	2
SL NO	SUBJECT	COURSE OUTCOMES	BTL
2	Mathematics – III	CO# Students will be able to :	
		CO1 Apply & solve Analytic Function, Cauchy-Riemann equations, line integral in complex plane, Cauchy Integral theorem, Taylor's series, Maclaurin's series, Laurent's series.	3
		CO2 Solve and explain Residue Integration method, Evaluation of Real Integrals, Error & Error Propagation, Lagranges Interpolation, Newton's Divided Difference Interpolation, Newton's Forward and backward Interpolation, Spline's Interpolation.	3, 2
		CO3 Explain Trapezoidal Rule, Simpson's 1/3rd Rule, Simpson's 3/8th Rule, Gauss Integral Formula, Euler's Method for ODE, Runge-Kutta 2 <sup>nd</sup> order and 4 <sup>th</sup> order Method, Multi-Step method.	2
		CO4 CO4: Studnets will be able to apply & solve Probability & Random Variables, Probability Distribution Funtion, Probability Density Function, Binomial Distribution, Poisson's Distribution, Uniform Distribution, Normal Distribution.	3
		CO5 Apply & solve distribution of several random variable, scope of statistics & random sampling, sampling distribution, correlation analysis, regression analysis.	3
		CO6 Solve Fitting of straight lines, Estimation of Paramter & statistical Hypothesis.	3
SL NO	SUBJECT	COURSE OUTCOMES	BTL
3	Mechanics Of Solid	CO# Students will be able to :	
		CO1 Define types of stresses and strains and calculate the values of youngs modulus of elasticity ,modulus of rigidity and bulk modulus of elasticity.	1,3
		CO2 Calculate the the principal stresses on principal plane.	3
		CO3 Calculate the shear force and bending moment of different types bo beam.	2
		CO4 Calculate torque and power produced by the rotating of rigid body.	3
		CO5 Classify types of springs and calculate the stiffness and spring rate of helical spring.	2,3
		CO6 Calculate the deflection produced in the beam.	3
SL NO	SUBJECT	COURSE OUTCOMES	BTL
4	Fluid Mechanics And Hydraulic Machines	CO# Students will be able to :	
		CO1 Verify the Bernoulli's theorem.	3
		CO2 Calculate the discharge of fluid through venturimeter,orifice meter.	3
		CO3 Calculate the pressure of fluids by using manometer,U-tube manometer and differential manometer.	3
		CO4 Explain the impact of jet on different plates and calculate the force exerted by the jet on the plate.	2, 3
		CO5 Define hydraulic ,mechanical,volumetric and overall efficiency and calculate the overall efficiency of Pelton,Francis and Kaplan turbine.	1, 3
		CO6 Classify types of pump,explain the working of centrifugal pump and reciprocating pump and calculate the efficiency in centrifugal pump.	2,2,3
SL NO	SUBJECT	COURSE OUTCOMES	BTL
5	Object Oriented Programming Using Java	CO# Students will be able to :	
		CO1 Understand the use of OOPs concepts	2
		CO2 Understand the use of Packages and Interface in java.	2
		CO3 Develop and understand exception handling, multithreaded applications with synchronization	3
		CO4 Understand the use of Collection Framework	2
		CO5 Design GUI based applications and develop applets for web applications	3
		CO6 Understand the use of abstraction.	2
SL NO	SUBJECT	COURSE OUTCOMES	BTL
6	Mechanics of Solid Lab.	CO# Students will be able to :	
		CO1 Calculate tensile strength,compressive strength and bending strength of materials by using Universal Testing Machine.	3
		CO2 Calculate modulus rigidity and fatigue strength of material.	3
		CO3 Calculate spring constant under tension and compression.	3
		CO4 Measure using load indicator and load cells.	3
		CO5 Measure strain by using strain measurement.	3
		CO6 Measure stress by using stress rossete.	3
SL NO	SUBJECT	COURSE OUTCOMES	BTL
7	Fluid Mechanics And Hydraulic Machines Lab.	CO# Students will be able to :	
		CO1 Verify the Bernoulli's theorem.	3
		CO2 Calculate the discharge of fluid through venturimeter,orifice meter.	3
		CO3 Calculate the pressure of fluids by using manometer,U-tube manometer and differential manometer.	3
		CO4 Explain the impact of jet on different plates and calculate the force exerted by the jet on the plate.	2,3
		CO5 Define hydraulic ,mechanical,volumetric and overall efficiency and calculate the overall efficiency of Pelton,Francis and Kaplan turbine.	1, 3
		CO6 Classify types of pump,explain the working of centrifugal pump and reciprocating pump and calculate the efficiency in centrifugal pump.	2,2,3
SL NO	SUBJECT	COURSE OUTCOMES	BTL
8	Oop Using Java Lab.	CO# Students will be able to :	
		CO1 Understand the programming language concepts	2
		CO2 Write, Debug and document well-structured java applications	3
		CO3 Implement Java classes from specification, create and use objects from predefined class libraries	3
		CO4 Understand the behaviour of primitive data types , control statements , object reference and arrays	2
		CO5 Implement Modular , multithreading and event driven programming	3
		CO6 Implement interface, inheritance polymorphism,exception handling, file I/O and multithreading	3
Course Outcomes - Academic Year 2019-20 4th Semester			
SL NO	SUBJECT	COURSE OUTCOMES	BTL
1	Kinematics & Dynamics of Machines	CO# Students will be able to :	
		CO1 Define degree of freedom and clasifying different types of link and mechanism.	1
		CO2 Define gear terminology and calculating velocity ratio of gear trains.	1
		CO3 Calculate the frictional torque of different types of clutch and bearing.	3
		CO4 Define types of belt and rope drive and calculate power transmission through belt drive.	1
		CO5 Define types of braking system and calculating braking torque for different types of braking system.	1,3
		CO6 Calculate the frictional force produced in screw jack,clutch and bearings.	3
SL NO	SUBJECT	COURSE OUTCOMES	BTL
2	Engineering Thermodynamics	CO# Students will be able to :	
		CO1 Apply various laws of thermodynamics to various processes and real systems .	3
		CO2 Apply the concept of Entropy, work and other important thermodynamic properties for various ideal gas processes.	3
		CO3 Calculate the performance of various thermodynamic gas power cycles and gas refrigeration cycle .	3
		CO4 Calculate the sensible heat and latent heat of the steam.	3
		CO5 Classify types of steam boiler.	2
		CO6 Apply the concept of thermodynamic properties in various equipment of boiler.	3
SL NO	SUBJECT	COURSE OUTCOMES	BTL
3	Introduction to Physical Metallurgy and Engineering Materials	CO# Students will be able to :	
		CO1 Define mechanical properties of material and explain F.C.C and B.C.C structure of material.	1, 2
		CO2 Classify the types of steel and cast iron and explain Iron-Carbon equilibrium diagram.	2
		CO3 Explain time ,temperature and transformation diagram.	2
		CO4 Define the properties of non-ferrous material.	1
		CO5 Classify thermosetting and thermoplastic.	2
		CO6 Classify the composite material and Ceramic materials.	2
SL NO	SUBJECT	COURSE OUTCOMES	BTL
4	Mechanical Measurement, Metrology & Reliability	CO# Students will be able to :	
		CO1 Classify the types of measuring instrument,performance characteristics of measuring instrument.	2
		CO2 Classify the types of transducers and amplifier.	2
		CO3 Classify types of strain measuring instrument and pressure measuring instrument.	2
		CO4 Explain types of errors.	2
		CO5 Define temperature measurement and fluid flow measurement.	1
		CO6 Define reliability and maintainability.	1
SL NO	SUBJECT	COURSE OUTCOMES	BTL
5	Data Structure	CO# Students will be able to :	
		CO1 Explain various linear data structures like stacks, queues, linked lists using static and dynamic allocation and use them in solving problems.	2
		CO2 Understand the recursive and non-recursive procedures for solving problems like searching mechanism (linear search, binary search, hashing).	2,3
		CO3 Acquire the knowledge of the nonlinear data structures like binary tree, binary search tree and threaded binary trees and use them in designing applications like sorting, expression trees etc.	2
		CO4 Apply the various sorting algorithms including bubble sort, insertion sort, selection sort, heap sort and quick sort.	3
		CO5 Able to understand algorithms for graph traversals and shortest path problems.	2
		CO6 Able to choose appropriate abstract data types and algorithms to solve particular problems.	3
SL NO	SUBJECT	COURSE OUTCOMES	BTL
6	Organisational Behaviour	CO# Students will be able to :	
		CO1 Define organisational behaviour, and explain nature of learning.	1,2
		CO2 Define personality and explain determinants of personality, personality Traits.	1,2
		CO3 Explain perception and explain perceptual process, importance of perception in OB.	1,2
		CO4 Explain types of communication , gateways and Barriers to communication, communication as a tool for improving Interpersonal Effectiveness.	2
		CO5 Explain Theories of Leadership- Trait theory, Leader Behaviour theory, Contingency Theory, Leadership and Followership, How to be an effective leader.	2
		CO6 Explain organizational culture and organizational effectiveness.	2
SL NO	SUBJECT	COURSE OUTCOMES	BTL
7	Kinematics & Dynamics of Machines Laboratory	CO# Students will be able to :	
		CO1 Calculate the efficiency of screw jack.	3
		CO2 Explain the function of clutch and calculate the frictional torque produced in the clutch.	2, 3
		CO3 Explain the working of epicyclic gear train and calculate the velocity ratio of epicyclic gear train.	2, 3
		CO4 Calculate the power by using dynamometer.	3
		CO5 Calculate acceleration by using Coriolis component of acceleration.	3
		CO6 Calculate radius of gyration of connecting rod.	3
SL NO	SUBJECT	COURSE OUTCOMES	BTL
		CO# Students will be able to :	
		CO1 Classify the internal combustion engine .explain the working of spark ignition and compression ignition engine.	2,2
		CO2 Calculate the air standard efficiency of petrol and diesel engine.	3

8	Engineering Thermodynamics Laboratory	CO3	Calculate the volumetric efficiency of reciprocating air compressor.	3
		CO4	Explain the working of refrigeration system and calculate the co-efficient of performance of vapour compression refrigeration system.	2,3
		CO5	Verify Joule thomson co-efficient.	2
		CO6	Measure the quality of steam by calorimeter.	3
SL NO	SUBJECT	CO#	COURSE OUTCOMES	BTL
9	Introduction to Physical Metallurgy and Engineering Materials Laboratory	CO#	Students will be able to :	
		CO1	Explain Crystal Structures through Ball Models.	2
		CO2	Explain principle and operation of Metallurgical Microscope .	2
		CO3	Explain microstructural Analysis of Carbon Steels .	2
		CO4	Explain microstructural Analysis of Non-Ferrous Metals.	2
		CO5	Explain the heat treatment procedure of steel.	2
CO6	Calculate the amount of energy absorbed doing impact test	3		
Course Outcomes - Academic Year 2019-20 5TH SEMESTER				
SL NO	SUBJECT	CO#	COURSE OUTCOMES	BTL
1	Energy Conversion Techniques	CO#	Students will be able to :	
		CO1	Explain the concepts of magnetic circuits.	2
		CO2	Explain the operation of dc machines.	2
		CO3	Analyse the differences in operation of different dc machine configurations.	4
		CO4	Develop knowledge About the constructional details, principle of operation, testing and applications of transformers.	3
		CO6	Explain the Starting, Breaking and speed control of three phase induction motor	2
SL NO	SUBJECT	CO#	COURSE OUTCOMES	BTL
2	Design Of Machine Elements	CO#	Students will be able to :	
		CO1	Explain the design procedure ,types of load ,fatigue ,creep and theories of failure.	2
		CO2	Explain types of riveted, threaded and welded joints and design riveted,threaded and welded joints.	2
		CO3	Classify types of key and pin and design shaft, key and pin.	2
		CO4	Classify types of coupling and designing rigid coupling and flexible coupling.	2
		CO5	Classify springs and design helical spring and leaf spring.	2
CO6	Define bearing ,classify types of bearings and design roller bearing and sliding contact bearing.	1		
SL NO	SUBJECT	CO#	COURSE OUTCOMES	BTL
3	Machining Science & Technology	CO#	Students will be able to :	
		CO1	Explain the geometry of cutting tools in ASA and ORS system and calculate the cutting force of lathe tool dynamometer and drill tool dynamometer.	2,3
		CO2	Explain the working of lathe,drilling,planning,shaping,grinding and milling machine.	2
		CO3	Explain indexing mechanism,thread cutting mechanism and quick return mechanism.	2,3
		CO4	Explain capstain and turret lathe machine .	2
		CO5	Classify the non-traditional machining processes and explain the working of LBM,EDM,ECCM ,AJM and EBM machine.	2,2
CO6	Calculate the material removal rate of all the non-traditional machining processes.	3		
SL NO	SUBJECT	CO#	COURSE OUTCOMES	BTL
4	Heat Transfer	CO#	Students will be able to :	
		CO1	Define mode of heat transfer and calculate the heat transfer rate through wall,cylinder and sphere.	1,3
		CO2	Classify types of fin and calculate the heat transfer rate through triangular fin,rectangular fin and trapezoidal fin.	2,3
		CO3	Explain free convection and forced convection and calculate the heat transfer rate through free and forced convection.	2,3
		CO4	Classify the types of boiling and condensation and calculate the heat transfer rate through boiling and condensation.	2,3
		CO5	Define Kirchoff's law ,Wien's law and plank's law and calculate the emissive power,monochromatic emissive power at different wave length's.	1,3
CO6	Calculate the radiative heat transfer rate both considering and not considering the radiation shield's.	3		
SL NO	SUBJECT	CO#	COURSE OUTCOMES	BTL
5	Project Management	CO#	Students will be able to :	
		CO1	Define the relation between HRM and HRD and explain the challenges of HRM.	1,2
		CO2	Explain career planning ,career development ,performance management and competency mapping.	2
		CO3	Explain compensation management .	2
		CO4	Explain job evaluation .	2
		CO5	Explain on the job and off the job training programe.	2
CO6	Explain the evaluation of effectiveness of the training programe.	2		
SL NO	SUBJECT	CO#	COURSE OUTCOMES	BTL
6	Advance Lab - I	CO#	Students will be able to :	
		CO1	Create orthographic and sectional views of screw thread, screw fastening.	3
		CO2	Design assembly of cotter joint	4
		CO3	Design assembly of knuckle joint	4
		CO4	Create sectional views of Flanged coupling.	3
		CO5	Draw and design pedestal bearing.	3
CO6	Create and draw shaft coupling, Nuts and bolts using AUTO CAD.	3		
SL NO	SUBJECT	CO#	COURSE OUTCOMES	BTL
7	Operating System	CO#	Students will be able to :	
		CO1	Explain the role, structure, services and types of operating system also discuss various issues and types of system calls.	2
		CO2	Compare and contrast the common algorithm for both preemptive and non preemptive task in os such as FCFS, SIF, Priority, RR scheduling ,differentiate between process and thread, various threading issues, cite the various approach to solve the problem of mutual exclusion related to critical regions.	2
		CO3	Understand the concept of deadlock in Operating systems how they can be managed and avoided through the Implementation of banker's algorithm and resource request algorithm and also cite different methods Involved in recovery from deadlock.	2
		CO4	Learn how virtual memory is used and describe the operation of memory management unit, also define various page replacement strategies like FIFO, LRU, Optimal, also able to analyse the use of demand paging, and segmentation.	2
		CO5	Able to explain various issues related to file system such as structure, access method, efficiency, performance directory structure and its implementation	2
CO6	Familiar with various approach of free space management and apply the knowledge to implement disk scheduling algorithms such as SSTF, LOOK, SCAN, C-LOOK, C-SCAN and also illustrating the overview of I/O hardware application I/O interface kernel I/O subsystem.	2		
Course Outcomes - Academic Year 2019-20 6TH SEMESTER				
SL NO	SUBJECT	CO#	COURSE OUTCOMES	BTL
1	Green Technologies	CO#	Students will be able to :	
		CO1	Explain the concept of various forms of renewable energy	2
		CO2	Outline division aspects and utilization of renewable energy sources for both domestics and agricultural application	2
		CO3	Understand the need of Wind Energy and the various components used in energy generation and know the classifications	2
		CO4	Understand the concept of Biomass energy resources and their classification.	2
		CO5	Compare Solar, Wind and bio energy systems, their prospects, Advantages and limitations	2
CO6	Explain green guidelines such as GRHA and LEED .	2		
SL NO	SUBJECT	CO#	COURSE OUTCOMES	BTL
2	Production & Operation Management	CO#	Students will be able to :	
		CO1	Explain manufacturing verses service operation, strategic view operation ,strategic role of operation and operation strategies for competition advantages.	2
		CO2	Define and explain motion study,work study and time study.	1,2
		CO3	Explain factors influencing plant and ware house location , location procedure and models.	2
		CO4	Defining forecasting and explaining forecasting methods.	1,2
		CO5	Define planning and explain aggregate planning master production scheduling and capacity requirements planning.	1,2
CO6	Define sequencing and scheduling and explaining inventory control and modern trend manufacturing.	1,2		
SL NO	SUBJECT	CO#	COURSE OUTCOMES	BTL
3	Refrigeration & Air Conditioning	CO#	Students will be able to :	
		CO1	Define refrigeration systems, explain the working of air refrigeration system and calculate the Co-efficient of performance of air refrigeration systems.	1,2,3
		CO2	Explain the working of vapour compression refrigeration system and calculate the co-efficient of performance of vapour compression refrigeration system.	2,3
		CO3	Define vapour absorption refrigeration system and classify different types of vapour absorption refrigeration systems.	1,2
		CO4	Classify types of refrigerant and explaining halocarbon ,hydrocarbon and azeotropic refrigerants.	2,2
		CO5	Define psychrometric properties and explain different psychrometric processes and calculating sensible heat ,latent heat and sensible heat afctor.	1,2
CO6	Explain the working of summer ,winter and year around air conditioning systems and calculating the cooling load for air conditioning system.	2,3		
SL NO	SUBJECT	CO#	COURSE OUTCOMES	BTL
4	Cad / Cam	CO#	Students will be able to :	
		CO1	Define CAD and CAM and explain design process design work station and graphical terminal.	1, 2
		CO2	Explain computer graphics, software and data base used in CAD & CAM.	2
		CO3	Explain numerical control and NC part programing.	2
		CO4	Explain CNC ,DNC and combined CNC and DNC system.	2
		CO5	Explain adaptive manufacturing system.	2
CO6	Explain the working of computer integrated manufacturing system.	2		
SL NO	SUBJECT	CO#	COURSE OUTCOMES	BTL
5	Automobile Engineering	CO#	Students will be able to :	
		CO1	Explain different parts of engine and automobile acts.	2
		CO2	Explain braking systems and design brake lining and brake drum.	2,3
		CO3	Explain layout of transmission system.	2
		CO4	Explain working of gear box.	2
		CO5	Classify types of steering mechanism and explain the working of steering mechanism.	2
CO6	Explain starting system,charging system and ignition system of automobile.	2		
SL NO	SUBJECT	CO#	COURSE OUTCOMES	BTL
6	Business Communication & Skill For Interview	CO#	Students will be able to :	
		CO1	Communicate effectively in work places.	3
		CO2	Make effective presentation.	3
		CO3	Develop problem solving skills.	3
		CO4	Extend engineering ethics and human values.	2
		CO5	Develop leadership skills.	3
CO6	Face group discussion and interview.,	3		
SL NO	SUBJECT	CO#	COURSE OUTCOMES	BTL
7	Computer Network and Data Communication	CO#	Students will be able to :	
		CO1	Describe the basic concepts of data communication, networks, Internet, OSI and TCP/IP models	2
		CO2	Illustrate the Digital-to-Digital, Analog-to-Analog and Digital-to-Analog conversion techniques	2
		CO3	Explain Analog-to-Analog conversion, different types of multiplexing techniques and transmission	2
		CO4	Understand the different functionalities of data link layer and discuss error detection and correction codes	2
		CO5	Discuss the different media access control protocols and IEEE standards for wired and wireless LANs	2,3
CO6	Understand the routing protocols and analyze how to assign the IP addresses for the given network	2		
Course Outcomes - Academic Year 2019-20 7TH SEMESTER				

SL NO	SUBJECT	COURSE OUTCOMES		BTL
1	Internet Of Things (IoT)	CO#	Students will be able to :	
		CO1	Define and explain various issues and challenges of IOT and understand the components of IOT.	1,2
		CO2	Understand various protocols of IOT and architecture of various IOT layers.	2
		CO3	Understand the resource management like software agent, data synchronization and network architecture	2
		CO4	Understand various case studies of IOT application and use of IOT in Big Data and industry. Interfacing using Raspberry Pi/Arduino	2
		CO5	Outline the difference between WoT and IoT. Understand the use of IOT in Grid and Cloud	2
CO6	Understand the revolution of Internet in Mobile Devices, Cloud & Sensor Networks	2		
SL NO	SUBJECT	COURSE OUTCOMES		BTL
2	Marketing Management	CO#	Students will be able to :	
		CO1	Understand marketing concepts and their application to profit-oriented and non-profit oriented organizations	2
		CO2	Apply these concepts to the analysis of marketing problems and development of appropriate and creative marketing strategies to solve these problems	3
		CO3	Understand the need for a customer orientation in the competitive global business environment	2
		CO4	Have an appreciation that marketing is integrated with other functional areas of business	1
		CO5	Develop an understanding and acquiring skills in how to successfully design and implement marketing plans and strategies	2
CO6	Understand the concept of marketing mix and its application in traditional and novel environments characterized by emerging information technologies	2		
SL NO	SUBJECT	COURSE OUTCOMES		BTL
3	Mechanical Vibration	CO#	Students will be able to :	
		CO1	Define types of vibration and calculate the natural frequency of free un-damped vibration.	1,3
		CO2	Explain free and forced vibration and calculate the damping factor, logarithmic decrement for free damped vibration.	2,3
		CO3	Explain single degree of freedom forced vibration systems and calculate the amplitude of vibration system.	2,3
		CO4	Explain two degrees of freedom un-damped vibration.	2
		CO5	Explain longitudinal, torsional and transverse vibration systems.	2
CO6	Explain multi degree of freedom vibration.	2		
SL NO	SUBJECT	COURSE OUTCOMES		BTL
4	Robotics	CO#	Students will be able to :	
		CO1	Explain fundamentals of robotics and classify the robot anatomy .	2
		CO2	Build mathematical model of robots .	2
		CO3	Explain inverse kinematics.	2
		CO4	Explain Lagrangian mechanics, 2D- Dynamic model, Lagrange-Euler formulation, Newton-Euler formulation.	2
		CO5	Explain Hydraulic and pneumatic actuators, Electrical actuators, Brushless permanent magnet DC motor, Servomotor, Stepper motor, Micro actuator, Micro gripper, Micro motor, Drive selection.	2
CO6	Explain Capabilities of robots, Material handling, Machine loading and unloading, Robot assembly, Inspection, Welding, Obstacle avoidance.	2		
SL NO	SUBJECT	COURSE OUTCOMES		BTL
5	Seminar	CO#	Students will be able to :	
		CO1	Represent the technical concepts and understanding of the subject	1
		CO2	Demonstrate effective communication	2
		CO3	Demonstrate the presentation ability in front of a group of experts	2
		CO4	Apply modern software and/or application tools for representing	3
		CO5	Analyse the modern and contemporary trends in the engineering field	3
CO6	Show professional ethics on a stage	1		
SL NO	SUBJECT	COURSE OUTCOMES		BTL
6	Minor Project	CO#	Students will be able to :	
		CO1	Demonstrate the capability of effectively utilising the allotted time	3
		CO2	Apply the theoretical branch knowledge to the practical engineering product/services	3
		CO3	Show contribution to the team work	1
		CO4	Show cooperation to the team work	1
		CO5	Demonstrate the capability of learning from the failures	3
CO6	Mentor/lead the team/a group of people	3		
SL NO	SUBJECT	COURSE OUTCOMES		BTL
7	Cryptography and Network Security	CO#	Students will be able to :	
		CO1	Classify the symmetric encryption techniques	2
		CO2	Illustrate various Public key cryptographic techniques	2
		CO3	Understand the authentication and hash algorithms.	2
		CO4	Elaborate on authentication applications	2
		CO5	Summarize the intrusion detection and its solutions to overcome the attacks.	2
CO6	Understand the basic concepts of system level security.	2		
Course Outcomes - Academic Year 2019-20 8TH SEMESTER				
SL NO	SUBJECT	COURSE OUTCOMES		BTL
1	Entrepreneurship Development	CO#	Students will be able to :	
		CO1	Define what entrepreneurship is, consider how everyone has the potential to be entrepreneurial, and to explore the constituents of the entrepreneurial process	1
		CO2	Identify steps required to research the potential for an innovative idea for the development of an existing enterprise, a new venture or a social change opportunity	3
		CO3	Examine the key resources required to exploit an innovative idea or opportunity to develop an existing business, launch a new venture, or initiate a social enterprise	3
		CO4	Identify the key steps required for exploiting an innovative idea or opportunity to develop an existing business, launch a new venture, or initiate a social enterprise	3
		CO5	Understand the basic development of entrepreneurship as a profession.	2
CO6	Understand business models.	2		
SL NO	SUBJECT	COURSE OUTCOMES		BTL
2	Fatigue Creep & Fracture	CO#	Students will be able to :	
		CO1	Explain design philosophy and fatigue design.	2
		CO2	Explain Improvement of fatigue strength' by chemical and metallurgical processes such as nitriding, flame hardening, case carburizing .	2
		CO3	Define ductile and brittle fracture Theoretical cohesive strength of metals,	1
		CO4	Explain fatigue crack growth Behaviour of metals, linear elastic fracture mechanics (LEFM), Stress Intensity Factor(SIF), Stress field near the crack tip, Critical SIF and Fracture Toughness.	2
		CO5	Explain Strain Energy Release Rates (SERR), Elasto-Plastic Fracture Mechanics (EPFM).	2
CO6	Define Constant stress and constant strain and explain the working of strain hardening and time hardening creep relaxation.	1		
SL NO	SUBJECT	COURSE OUTCOMES		BTL
3	Seminar	CO#	Students will be able to :	
		CO1	Represent the technical concepts and understanding of the subject	1
		CO2	Demonstrate effective communication	2
		CO3	Demonstrate the presentation ability in front of a group of experts	2
		CO4	Apply modern software and/or application tools for representing	3
		CO5	Analyse the modern and contemporary trends in the engineering field	3
CO6	Show professional ethics on a stage	1		
SL NO	SUBJECT	COURSE OUTCOMES		BTL
4	Major Project	CO#	Students will be able to :	
		CO1	Demonstrate fair knowledge of most concepts of Engineering	3
		CO2	Apply the multi-disciplinary knowledge through the project	3
		CO3	Show independent decision making capability	1
		CO4	Apply modern tools and softwares for developing products and/or services	3
		CO5	Explain clear objectives of any assignment	3
CO6	Mentor/lead the team/a group of people	3		