ST.PETERS ENGINEERING COLLEGE

DEPARTMENT OF MECHANICAL ENGINEERING

Correlation between the Course outcomes and Program Outcomes A.Y. 2021-22

II YEAR I SEM

COURSECODE	COURSENAME	COURSE OUTCOMES	PROGRAM OUTCOMES													
			1	2	3	4	5	6	7	8	9	10	11	12	Pso1	Pso2
AS20-00HS07	UNIVERSAL HUMAN VALUES-II	C211.1 Interpret the concept of right understanding towards the relationships and physical facilities	3	2	2											2
		C211.2 Identify the co-existence of self and body to live in harmony with the universe	2	1	1											1
		C211. Develop the key elements of Trust and respect to achieve harmony in family	3	2	2											
		C211.4 Build the harmony in the society by using the universal values like resolution, prosperity, fearlessness and gratitude.	2	1	1											1
		C211.5 Relate the whole existence of physical order, pranicorder ,animal order and human order for harmony in nature.	2	1	1											1
		C211.6 Develop the natural acceptance of human values and competence in professional ethics	3	2	2	1										
		Average	**3**	**2**	**2**	**1**										**1**
AS20-03PC01	MECHANICS OF SOLIDS	C212.1Explain basic concepts of stress, strain and their relations based on linear elasticity. Material behaviors due to different types of loading will be discussed.	3	2											3	2
		C212.2 Solve stresses and deformation of a bar due to an axial loading under uniform and non-uniform conditions.	3	2	2										3	2
		C212.3 Develop shear-moment diagrams of a beam and find the maximum moment/shear and their locations.	3	3	2										3	2
		C212.4 Analyze and design structural members subjected to bending and combined stresses using the fundamental concepts of stress, strain and elastic behavior of materials.	3		2										2	3
		C212.5 Construct principal planes and stresses, and apply the results to combined loading case.	3	2											3	2

		C212.6 Design cylinders and torsions to support a given load.	3		3											3	2
		Average	**3**	**2.3**	**2.25**											**2.83**	**2.16**
AS20-03PC02	**PRODUCTION TECHNOLOGY**	C213.1 Describe the types, materials, allowances and defects in casting	3	3	3	3	3										
		C213.2 Explain the patterns, design of gating system and solidification.	3	2	2	2	2										2
		C213.3Distinguish between the various weldingprocesses applicable in the manufacturing industries.	3	3	2	2	2										2
		C213.4Explain the advanced welding processes, defects and testing of welds	3	2	3	2	2										
		C213.5Apply the different deformation processapplicable for the various products.	3	2	2	3	2										
		C213.6Explain the various extrusion, forgingprocesses.	3	2	2	2	2										
		Average	**3.0**	**2.3**	**2.3**	**2.3**	**2.1**										**2**
AS20-03ES05	**MATERIALS SCIENCE AND METALLURGY**	C214.1 ability to Understand the basics of materials	3									2					2
		C214.2 ability to Understand Estimate the analysis of phases and lever rule	2						2			3				3	
		C214.3 ability to Understand increase thecomponents and phases	3			3										3	3
		C214.4 ability to Understand the statistical or microscopic analysis of physical explanations	3			2											
		C214.5 ability to Understand the utility of the knowledge heat treatment and types of heat treatments	3	3		2											
		Average	**2.8**	**3**		**2.3**			**2**			**2.5**				**3**	**2.5**
AS20-03PC03	**THERMODYNAMICS**	C215.1 ability to Understand the basic techniques of thermal conversions.	3									2					2
		C215.2 ability to UnderstandEstimate the analysis of power and refrigeration cycles with air water – vapour mixtures	2						2			3				3	

		C215.3 ability to Understandincrease the utility of the knowledge fluid flow and heat transfer problems solved	3			3									3	3
		C215.4 ability to Understandthe statistical or microscopic analysis of physical explanations	3			2										
		C215.5 ability to Understand the utility of the knowledge fluid flow and heat transfer problems solved. Steam tables and charts given in the appendix.	3	3		2										
		Average	**2.8**	**3.0**		**2.3**			**2.0**			**2.5**			**3.0**	**2.5**
AS20-03PC04	**MECHANICS OF SOLIDS LAB**	C216.1 Compute the tensile and shear properties of materials using UTM	3	3	3	3	3									
		C216.2 Compute the torsion and impact strength using respective test setup	3	2	2	2	2									2
		C216.3 Compute the response of the beam by deflection method	3	3	2	2	2									2
		C216.4 Calculate the deflection of springs using tensile and compression tests	3	2	3	2	2									
		C216.5 Construct principal planes and stresses, and apply the results to combined loading case..	3	2	2	3	2									
		C216. Design cylinders and torsions to support agiven load	3	2	2	2	2									
		Average	**3.0**	**2.3**	**2.3**	**2.3**	**2.1**									**2**
AS20-03PC05	**PRODUCTION TECHNOLOGY**	C217.1 Describe the types, materials, allowances and defects in casting.	3	3	3	3	3									
		C217.2 Explain the patterns, design of gating system and solidification.	3	2	2	2	2									2
		C217.3Distinguish between the various welding processes applicable in the manufacturing industries.	3	3	2	2	2									2
		C217.4Explain the advanced welding processes, defects and testing of welds	3	2	3	2	2									
		C217.5Apply the different deformation process applicable for the various products.	3	2	2	3	2									
		C217.6Explain the various extrusion, forging processes.	3	2	2	2	2									
		Average	**3.0**	**2.3**	**2.3**	**2.3**	**2.1**									**2**

AS20-03ES06	**MATERIAL SCIENCE LAB**	C218.1 Infer the influence of heat treatment process in mechanical properties and micro structure	3	2					2						3	2
		C218.2 Apply specific testing methods for material characterization	3	2	2				2						3	2
		C218.3 ability to Understand the basics of materials	3	3	2				1						3	2
		C218.4 ability to Understand Estimate the analysis of phases and lever rule	3		2										2	3
		C218.5 ability to Understand increase the components and phases	3	2					1						3	2
		C218.6 Apply specific testing methods for material characterization	3	2											3	2
		Average	**3**	**2**	**2**				**2.5**						**3**	**2**

ST.PETERS ENGINEERING COLLEGE

DEPARTMENT OF MECHANICAL ENGINEERING

Correlation between the Course outcomes and Program Outcomes A.Y. 2021-22

III- YEAR I SEM

COURSECODE	COURSENAME	COURSE OUTCOMES	PROGRAM OUTCOMES													
			1	2	3	4	5	6	7	8	9	10	11	12	Pso1	Pso2
ME501PC	DYNAMICS OF MACHINERY	C311.1 Analyze Dynamics of the three-dimensional particle motion in various coordinate systems: Cartesian, natural and cylindrical	3									2				
		C311.2 Ability to Describe the concepts of gyroscopic effects and effect of precision motion on the stability of moving vehicles and learn the concepts of static and dynamic force analysis of planar mechanisms.	3						2			3				
		C311.3 Solve the torque of friction-clutches, brakes and dynamometers and its importance	3			3									2	
		C311.4 Ability to describe the importance of turning moment diagrams, fly wheels	3			2										
		C311.5 Ability to Describe concepts of various governors and balancing of rotary and reciprocating mass its analysis.	3	3		2									2	
		C311.6 Ability to solve the simple free and forced damped vibrations	2	3		3									3	3
		Average	**2.8**	**3.0**		**2.2**			**2.0**			**2.5**			**2.3**	**3.0**
ME502PC	DESIGN OF MACHINE MEMBERS-I	C312.1 Knowledge about the principles of design and various theories of failures.	3	3		3										3
		C312.2 Ability to estimate the fluctuating loads using the Soderberg and Goodman techniques	3	3		3										
		C312.3 Design strength of riveted joints, welded and bolted joint	3	3	2										3	3
		C312.4 Design of keys, cotter and knuckle joints.	3	3		3									3	3
		C312..5 Ability to design shafts for various types of loading	3	3		3									3	3
		C312.6 Evaluate the importance of shaft and coupling.	3	3		3									2	
		Average	**3.0**	**3.0**	**2.0**	**3.0**									**2.7**	**3.0**
ME503PC	METROLOGY & MACHINETOOLS	C313.1 Illustrate the concepts of metal cutting, chip formation, single point cutting tool geometry, basic parts and tool operations of Lathe machine	3	3	3	3	3									
		C313.2 Identify the basic parts, operations of machine	3	2	2	2	2									2

		tools like Drilling, Boring, Shaping, Slotting, Planing and estimating their machining times.														
		C313.3 Identify the abrasives, bonds and basic parts and operations of machine tools like Milling, Grinding, Lapping, Honing, broaching and estimating their machining times.	3	3	2	2	2									2
		C313.4 Illustrate concepts of measurements like limits, fits, tolerances, types of assemblies, linear, angular, optical, surface measuring instruments and gauges.	3	2	3	2	2									
		C313.5 Classify different methods of assessment of surface finish and symbols for indicating surface finish.	3	2	2	3	2									
		C313.6 Explain the concepts of measurement of screw thread, gear, alignment tests on lathe and co-ordinate measuring machines.	3	2	2	2	2									
		Average	**3.0**	**2.3**	**2.3**	**2.3**	**2.1**									**2.0**
SM504PC	**BUSINESS ECONOMICS & FINANCIAL ANALYSIS**	C314.1Understand the concepts of managerial economics and financial analysis for optimal decision making in business environment.	3	3	3											3
		C314.2 Analyze different forms of business organizations existing in the modern business.	3	3	3										2	
		C314.3 Design and implement different structures of market covering how price is determined under different market structures.	3	3												2
		C314.4 Understand the significance of demand, its analysis, measurement of demand and its forecasting.	3	2	2											
		C314.5 Apply the Principle of double entry to give an exposure to the maintenance of books of records and allocation of profits in an enterprise.	3	3	3						2					
		Average	**3.0**	**2.8**	**2.7**						**2.0**				**2.0**	**2.5**
ME505PC	**THERMAL ENGINEERING II**	C315.1 Able to calculate, Compare and Analyse the steam power cycles.	3	3	2	2									3	3
		C315.2 Able to define, select, HP Boilers, Mountings an5d accessories, draft systems, chimney, etc.	3	3	2	2									2	3

		C315.3 Able to calculate, compare and analysis the steam nozzles.	3	3	2	2									3	3
		C315.4 Able to describe the principle of steam turbines and reaction turbines, their mechanical details, velocity diagrams for steam turbine blades, etc. to design, size and selection for given applications.	3	3	2	2									2	3
		C315.5 Able to calculate, Compare, Analyse the steam condensers and Gas turbine power plants.	3	3	2	2									3	3
		C315.6 Able to explain and identify the thermal equipment's such as Jet and Rocket Propulsions.	3	3		2									2	3
		Average	**3**	**3**	**2**	**2**									**2.4**	**3**
ME506PC	**OPERATIONS RESEARCH**	C316.1 Students able to solve problems on linear programming	3	3		2									3	
		C316.2 Students able to solve problems on transportation and assignment models	3	2		3									2	
		C316.3 Students able to apply operations research concepts in the models of the sequencing and replacement	3	2		3									2	
		C316.4 Students able to solve the problems on theory of games and inventory	3	2		3									2	
		C316.5 Students able to solve the problems on simulation, waiting lines & Dynamic Programming.	3	2		3									3	
		Average	**3.00**	**2.20**		**2.80**									**2.40**	
ME507PC	**THERMAL ENGINEERING LAB**	C317.1 Compute the performance of IC Engines.	3	2					2						3	
		C317.2 Predict the characteristics of Fuels and Lubricates used in IC Engines.	3	2	2				2						3	
		C317.3 Compute the Performance of steam generator and turbine.	3	3											3	
		C317.4 Outline the valve timing diagram and port timing diagram of IC Engines.	3	2					2						2	
		C317.5 Compute the heat distribution in an IC engine and steam generator	3	2					2						3	
		C317.6 Predict the significant factors affecting the performance of IC engine and steam generators	3	2											3	
		Average	**3.0**	**2.2**	**2.0**				**2.0**						**2.8**	
ME508PC	**METROLOGY & MACHINE TOOLS LAB**	C318.1Illustrate the step turning operations on lathe.	3	3	3	3	3				3					3
		C318.2Illustrate the Tapper turning operations on lathe.	3	3	3	3	3				3					3
		C318.3Illustrate the thread cutting and Knurling operations on lathe.	3	3	3	3	3				3					3

		C318.4 Practice on manufacturing of components using lathe and alignment tests.	3	3	3	3	3				3					3
		C318.5 Practice on manufacturing of components using tally surface equipment.	3	3	3	3	3				3					3
		C318.6 Practice on manufacturing of components using alignments and tests of equipment.	3	3	3	3	3				3					3
		Average	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**				**3.0**					**3.0**
ME509PC	**KINEMATICS & DYNAMICS LAB**	C319.1 Analyze Dynamics of the three-dimensional particle motion in various coordinate systems: Cartesian, natural and cylindrical	3									2				
		C319.2 Ability to Describe the concepts of gyroscopic effects and effect of precision motion on the stability of moving vehicles and learn the concepts of static and dynamic force analysis of planar mechanisms.	3						2			3				
		C319.3 Solve the torque of friction-clutches, brakes and dynamometers and its importance	3			3									2	
		C319.4 Ability to describe the importance of turning moment diagrams, fly wheels	3			2										
		C319.5 Ability to Describe concepts of various governors and balancing of rotary and reciprocating mass its analysis.	3	3		2									2	
		C319.6 Ability to solve the simple free and forced damped vibrations	2	3		3									3	3
		Average	**2.8**	**3.0**		**2.2**			**2.0**			**2.5**			**2.3**	**3.0**

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IV YEAR – I SEM

COURSECODE	COURSENAME	COURSE OUTCOMES	1	2	3	4	5	6	7	8	9	10	11	12	Pso1	Pso2
ME701PC	REFRIGERATION AND CONDITION	C411.1: The After completing this course the student must demonstrate the knowledge and ability to Understand the basic techniques Basic Definitions Of Refrigeration.	3	1			2									1
		C411.2: Estimate the analysis of power and refrigeration cycles with air water – vapor mixtures..			2	2	3					1			2	
		C411.3 Increase the utility of the knowledge Of Vapor absorption refrigeration cycles			2	1	3					1			1	
		C411.4 Increase the utility of the knowledge Of refrigeration Factors	1		2	1	3									
		C411.5: The utility of the knowledge refrigeration Factors problems solved. Steam tables and charts given in the appendix	1	2		3	2									2
		C411.6: Understand the basic techniques Basic Definitions Of Refrigeration.	1				1			1			3			
		Average	**1.5**	**1.5**	**2**	**1.7**	**2.8**			**1**		**1**	**3**		**1.5**	**1.5**
ME712PE	AUTOMATION AND MANUFATURING	C412.1. understand the process of automation and types	3	1	1	2	2				1				1	3
		C412.2. Exposure to workstation, which refers to the location in the factorywhere some well-defined task or operation is accomplished by an automated machine.	3	3	2	2									2	3
		C412.3 Understand and apply the Assembly system and line balancing	3	1	3	3	2								3	3
		C412.4. Understand the Automated Material handling equipment and types	3	3	3	3									3	3
		C412.5. Student gets exposure on Fundamentals of Industrial controls	3	3	2	3					2				1	3
		C412.6. Understand the Business process Re-engineering and its Softwareconfiguration	3	1	2	3	1								3	3
		Average	**3**	**2.8**	**2**	**3**	**2**				**1**				2	3

ME721PE	**POWER PLANT ENGINEERING**	C413.1Students able to explain the energy sources and conversion methods, concepts	2	3		2							2		2	
		C413.2 Students able to explain the various types of re-heat, re-generation power consumption methods energy sources and conversion methods.	3	2		3							2		2	
		C413.3 Students able to apply power plant engineering concepts in the model of the Assignment Problems	3	3		2							2		2	
		C413.4 Student able to Classify Hydro electric power plant, hydro cycles and its applications.	3	2		3							2		2	
		C413.4 Students able to explain wind energy, HAWT, VAWT, tidal energy	3	3		1		3					2		2	
		C413.5 Students able to explain wind energy, HAWT, VAWT, tidal energy	3	3		1		3					2		2	2
		Average	**2.8**	**2.6**		**2.0**		**3.0**					**2.0**		**2.0**	**2.0**
ME734PE	**TURBO MACHINERY**	C414.1: Analyze the flow equations in turbo machines.	3	3	3			3	3	3					3	3
		C414.2: Design and fundamental concepts of Axial and Radial Machines	3	3	3			3	3	3					3	3
		C414.:Understand the students, fundamental thermodynamic concepts of gas dynamics	3	3	3			3	2	3					3	3
		C414.4 :Understand the students, fundamental thermodynamic concepts of centrifugal compressors.	3	3	3			3	3	2					3	3
		C414.5: Calculate, Compare, Analyse the axial flow compressors and cascade analysis.	3	3	2			3	3	3					3	3
		C414.6 :Explain axial flow gas turbines and design cascade analysis	3	3	2			3	2	2					3	3
		Average	**3**	**3**	**2.6**			**3**	**2.6**	**2.6**					**3**	**3**
ME741PE	**UEE**	C415.1 Understands the concepts and methods of electric heating.	3	3	2	2		3	3						3	
		C415.2 Distinguish the different types of welding processes.	3	3	2	2		3	3						2	
		C415. 3Apply the Different illumination schemes depends upon the applications	3	3	2	2		3	2						3	
		C415.4 Apply the traction system schemes for urban, suburban and main line services..	3	3	2	2		3	3						2	
		C415. 5Electric traction in India-Real world problems.	3	3	2	2		3	3						3	
		C415.6 Understand lighting system in trains	3	3	2	2		3	2						2	
		Average	**3**	**3**	**2**	**2**		**3**	**2.6**						**2.4**	