ST.PETERS ENGINEERING COLLEGE

DEPARTMENT OF MECHANICAL ENGINEERING

Correlation between the Course outcomes and Program Outcomes A.Y. 2020-21

II YEAR II SEM

COURSECODE	COURSENAME	COURSE OUTCOMES	PROGRAM OUTCOMES														
			1	2	3	4	5	6	7	8	9	10	11	12	Pso1	Pso2	
ME401ES	BASIC ELECTRICAL AND ELECTRONICS ENGINEERING	C221.1 Recall the basic Electric circuits (Remember)	1	2													1
		C221.2 Analyze the various concepts in AC circuits (Analysis)	1		2												1
		C221.3 Explain various components of Low Voltage Electrical Installations (Understand)	1		2												1
		C221.4Illustrate the construction and working of Electrical Machines. (Understand)	1	2													1
		C221.5 Identify semiconductor devices like PN Junction Diode and Zener Diode and their Applications. (Apply)	1		2												1
		C221.6 Compare semiconductor devices like BJT and FET. (Understand)	1		2												1
		Average	**1**	**2**	**2**												**1**
ME402PC	KINEMATICS OF MACHINERY	C222.1Ability to describe the principles of kinematic pairs, chains and their classification. **(Knowledge)**	3	2											3	2	
		C222.2 Ability to explain the Degrees of Freedom, inversions, equivalent chains and planar mechanisms. **(Understand)**	3	2	2										3	2	
		C222.3 Analyze the planar mechanisms for position, velocity and acceleration. **(Analysis)**	3	3	2										3	2	
		C222.4Construct planar four bar and slider crank mechanisms for specified kinematic conditions. **(Analysis)**	3		2										2	3	
		C222.5Ability to draw the profiles of cams and followers for specified motions.**(Understand)**	3	2											3	2	
		C222.6 Evaluate gear tooth geometry and select appropriate gears for the required applications.**(Evaluate)**	3		3										3	2	
		Average	**3**	**2.3**	**2.25**										**2.83**	**2.16**	

ME403PC	**THERMAL ENGINEERING - I**	C223.1. Understand working principles of an IC Engine. (Understand)	3	2					2						3		3
		C223.2. Analyze combustion in SI and CI engines. (Analysis)	3	2	2				2						3		3
		C223.3Study performance of an IC Engine (Understand)	3	3											3		3
		C223.4. Understand working principles of Air-Compressors and Analyze Reciprocating Air-Compressors.(Analysis)	3	2					2						2		3
		C223.5. Understand working principles of Rotary air compressor and to analyze Centrifugal and Axial flow compressors . (Analysis)	3	2					2						3		
		C223.6. Understand the basic concepts of power and refrigeration cycles. Their efficiency and coefficients of performance. (Understand)	3	2											3		
		Average	**3**	**2.2**	**2**				**2**						**2.8**		
ME404PC	**FLUID MECHANICS AND HYDRAULIC MACHINES**	C224.1. Able to state the effect of fluid properties on a flow system.(Remember)	3												2	1	
		C224.2. Able to describe continuity equation and identify type of fluid flow patterns.(Understand)	3												2	1	
		C224.3. Able to demonstrate boundary layer concepts in Fluid Flow Systems. (Apply)	2	3	2										3	3	
		C224.4. Able to analyze a variety of practical fluid flow and measuring devices and utilize Fluid Mechanics principles in design. (Analyze)	3	2											3	3	
		C224.5. Able to select and analyze an appropriate turbine with reference to given situation inpower plants. (Understand)	2	3											3	3	
		C224.6. Able to investigate performance parameters of a given Centrifugal and Reciprocatingpump. (Create)	2	2											3	3	
		Average	**2.5**	**2.5**	**2**										**2.67**	**2.34**	
ME405PC	**INSTRUMENTATION AND CONTROL SYSTEMS**	C225.1. Identify various elements and their purpose in typical instruments (Remember)	3									2				1	3
		C225.2. Analysis of errors so as to determine correction factors for each instrument. (Analysis)	2									3			3		2

		C225.3. Understand static and dynamic characteristics of instrument and should be able to determine loading response time. (Understand)	1	2			3										1
		C225.4. Explain transducer regarding accuracy and loading time. (Understand)	1			2			3								1
		C225.5. Analyze the control system for control of position, temperature, acceleration & process control. (Analysis)			1			2			3						
		C225.6. Analyze the measuring system for the measurement of Flow and liquid level. (Analysis)		3			2		1								
		Average	**1**	**2.3**	**2**	**2**	**2.3**	**2.5**	**2**		**3**						**1**
EE409ES	**BASIC ELECTRICAL AND ELECTRONICS ENGINEERING LAB**	C226.1 Illustrate the performance, Characteristics and Load test on DC Shunt motor and DC Generator	2		3	1									1	3	2
		C226.2 Analyze the measurement of three phase power and explain the performance of induction motor & Transformer	1	2			3								2	1	3
		C226.3 Demonstrate the various electric circuits laws and theorems		3	1		2								2	3	1
		C226.4 Explain the various characteristics of different transducers	3	2		1									3	1	2
		C226.5 Apply the simple circuits based on diodes and transistors	1		3	2									2	1	3
		C226.6 Explain the study of CRO and measurement of AC Signals	2	3	2										1	2	3
		Average	**1.8**	**2.5**	**2.2**	**1.3**	**2.5**								**1.8**	**1.8**	**2.3**
ME407PC	**FLUID MECHANICS AND HYDRAULIC MACHINES LAB**	C227.1.Able to understand the basic working principle of a transformer; obtain the equivalent circuit parameters, estimate efficiency & regulation at various loads of 1-Φ transformers.	1	3												2	
		C227.2.Able to understand load sharing of transformers & conversion of 3- Φ to 2-Φ supply.		2	3											2	
		C227.3.Able to determine the equivalent circuit parameters of a single phase induction motor. Determine the performance characteristics of 3-Φ Induction motor & calculate its efficiency by direct and indirect methods.				2	1										
		C227.4.Able to analyze the regulation of an alternator by various methods at different power factors.				3										2	

		C227.5.Able to determine the synchronous motor's performance curves at various power factors and field currents.			2	3											2
		C227.6.Able to determine the maximum temperature rise by using back to back test.		2													
		Average	**1**	**3.6**	**2.5**	**2.6**										**2**	**2**
ME408PC	**INSTRUMENTATION AND CONTROL SYSTEMS LAB**	C228.1. Identify various elements and their purpose in typical instruments (Remember)	3									2				1	3
		C228.2. Analysis of errors so as to determine correction factors for each instrument. (Analysis)	2									3			3		2
		C228.3. Understand static and dynamic characteristics of instrument and should be able to determine loading response time. (Understand)	1	2			3										1
		C228.4. Explain transducer regarding accuracy and loading time. (Understand)	1			2			3								1
		C228.5. Analyze the control system for control of position, temperature, acceleration & process control. (Analysis)			1			2			3						
		C228.6. Analyze the measuring system for the measurement of Flow and liquid level. (Analysis)		3			2		1								
		Average	**1**	**2.3**	**2**	**2**	**2.3**	**2.5**	**2**		**3**						**1**

ST.PETERS ENGINEERING COLLEGE

DEPARTMENT OF MECHANICAL ENGINEERING

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III- YEAR II SEM

COURS ECODE	COURSENAME	COURSE OUTCOMES	PROGRAM OUTCOMES													
			1	2	3	4	5	6	7	8	9	10	11	12	Pso1	Pso2
ME601PC	DESIGN OF MACHINE MEMBERS-II	C321.1 Analyse the importance of sliding and roller contact bearings.	3		3	3									3	3
		C321.2 Illustrates the categories of engine parts.	2	3	3										3	3
		C321.3 Demonstrate the basic concepts of power transmission systems and pulleys.	3	3	3	3									3	3
		C321.4 Compare different types of gears and force analysis.	3	2	3	3									3	3
		C321.5 Explain the importance compound, differential, ball of power screws and failures	3	3	3	3									3	3
		C321.6 Evaluate the plastics and wear deformation for the gear	3	3	3	3									3	3
		Average	**3**		**3**	**3**									**3**	**3**
ME602PC	HEAT TRANSFER	C322.1 Analyze the different processes in conduction and convection mechanism (Analysis)	3	3												
		C322.2 Ability to understand the unsteady heat conduction processes.(Knowledge)	3	3											2	2
		C322.3Knowledge of the various processes involved in convection.(Knowledge)		3											3	
		C322.4Analyze the significance of the dimensional analysis in conduction and convection mechanisms(Analysis)	3	3	3											
		C322.5 Design and analysis of heat exchanger Equipment's. (Synthesis)		2	3											3
		C322.6Analyze the significance of radiation analysis through experiments.(Analysis)	3	3		3									3	
		Average	**3.0**	**2.8**	**3.0**	**3.0**									**2.6**	**2.5**
ME603PC	CAD & CAM	C323.1: Students will be able to Describe the peripherals of computer aided system.	3	1	-	-	2	-	-	-	-	-	-	-	-	1

		C323.2: Students will be able to Model engineering components by applying solid modeling techniques.	-	-	2	2	3	-	-	-	-	1	-	-	2	-
		C323.3 : Students will be able to Write NC and CNC programming code by applying principles of Numerical Control systems.	-	-	2	1	3	-	-	-	-	1	-	-	1	-
		C323.4: Students will be able to Describe the concept of part family and methods of identifying the part families.	1		2	1	3	-	-	-	-	-	-	-	-	-
		C323.5: Students will be able to Describe computer aided process planning and various computer aided inspection methods in quality control.	1	2	-	3	2	-	-	-	-	-	-	-	-	2
		C323.6 : Students will be able to Describe computer integrated manufacturing and its basic components.	1	-	-	-	1	-	-	1	-	-	3	-	-	-
		Average	**1.5**	**1.5**	**2**	**1.7**	**2.8**			**1**		**1**	**3**		**1.5**	**1.5**
ME604PC	**FINITE ELEMENT METHODS**	C324.1 Describe finite element method to solve problems in solid mechanics, fluid mechanics and heat transfer.	3	2		2										
		C324.2 Hypothesize the stiffness equations and solve the problems on one dimensional steeped bar and tapered bar.	3	3	3											
		C324.3 Hypothesize the stiffness equations and solve problems in one dimensional structures including trusses, beams.	3	3	3											
		C324.4 Hypothesize FE characteristic equations for two dimensional elements and analyze plain stress, plain strain and axi-symmetric problems.	3	3											3	
		C324.5 Apply finite element method to solve problems in 1-D & 2-Dheat transfer.	3	2	2											
		C324.6 Solve and Apply the finite element formulations for problems involving dynamics and Interpret results obtained from FEA software like ANSYS.	3	2			3									3
		Average	**3.0**	**2.5**	**2.6**	**2.0**	**3.0**								**3.0**	**3.0**
ME611PC	**UNCONVENTIONAL MACHINING PROCESSES**	C325.1. Identify various elements and their purpose in typical instruments (Remember)	3	3	2	2	2								3	3
		C325.2. Analysis of errors so as to determine correction factors for each instrument. (Analysis)	3	3	2	2	2								2	2

		C325.3. Understand static and dynamic characteristics of instrument and should be able to determine loading response time. (Understand)	3	3	2	2	2								3	3
		C325.4. Explain transducer regarding accuracy and loading time. (Understand)	3	3	2	2	2								2	2
		C325.5. Analyze the control system for control of position, temperature, acceleration & process control. (Analysis)	3	3	2	2	2								3	2
		C325.6. Analyze the measuring system for the measurement of Flow and liquid level. (Analysis)	3	3	2	2	2								2	2
		Average	**3**	**3**	**2**	**2**	**2**								**2.4**	**2.4**
EE409ES	**RENEWABLE ENERGY SOURCES**	C326.1 Explain renewable energy sources & systems. (Remember)	3		2	2		3							3	3
		C326.2 Apply engineering techniques to build solar, wind, tidal, geothermal, biofuel, fuel cell, Hydrogen and sterling engine. . (Understand)	3			2	3	3							2	3
		C326.3 Analyze and evaluate the implication of renewable energy. Concepts in solving numerical problems pertaining to solar radiation geometry and wind energy systems. (Understand)	3		3	3	3								3	3
		C326.4 Demonstrate self -learning capability to design & establish renewable energy systems . (Understand)	3			2		2							2	3
		C326.5 Conduct experiments to assess the performance of solar PV, solar thermal and biodiesel systems. .(Remember)	3			3									3	3
		C326.6 Understand, Analyze and estimate the potential of new and renewable energy source (RES), the solar energy option, Environmental impact of renewable energy, about sun and its radiation measurements. (Understand)														
		Average	**3.0**		**2.5**	**2.4**	**3.0**	**2.6**							**2.6**	**3.0**
ME605PC	**HEAT TRANSFER LAB**	C327.1 Evaluate the basic laws of heat transfer.	3	3												
		C327.2 Analyze problems involving steady state heat conduction in simple geometries.	3	3											2	2
		C327.3 Evaluate heat transfer coefficients for natural convection		3											3	
		C327.4 Analyze heat exchanger performance by using the method of log mean temperature difference.	3	3	3											
		C327.5 Analyze heat exchanger performance by using the method of heat exchanger effectiveness.		2	3											3

		C327.6 Explain radiation heat exchange between gray body surfaces.	3	3		3									3	
		Average	**3.0**	**2.8**	**3.0**	**3.0**									**2.6**	**2.5**
ME606PC	**CAD & CAM LAB**	C328.1 Draw the 2D & isometric views of different figures using Autocad software	3	2							3				1	1
		C328.2Design a 3D geometry using AutoCad		3	2	1					3					
		C328.3 Calculate stresses on 2D components using Ansys software.	2		3						3					2
		C328.4 Calculate stress, strain, harmonic analysis on components using Ansys software	3	2							3					
		C328.5 Conduct Thermal analysis on components using Ansys software	1	3							3					
		C328.6 Write a process sheet &Produce a component using CNC Turning & Milling machine.	1	3							3					
		Average	**2.0**	**2.6**	**2.5**	**1.0**					**3.0**				**1.0**	**1.5**
EN608HS	**ADVANCED COMMUNICATION SKILLS LAB**	C329.1Breakdown the ideas in to its elementary constituents, analyze and act after a meaning full thought process.	1								3	2	1	3		
		C329.2Analyze the phrase and passage and explicitly pass on the ideas meaning fully.	2								3	2		3		
		C329.3Manage to interpret the given phrase or the graphical rendering and review the contents well individually or as a group.	1								3	2		3		
		C329.4Concentrate on the communication aspect of complicated ideas and respond positively.	2								3	2	1	3		
		C329.5Debate the issues and find the rudiments of the problem individually and as a group.	1								3	2	1	3		
		C329.6Respond intelligently and seek clarification and understand completely									3	2	1	3		
		Average	**1.5**								**3**	**2**	**1**	**3**		

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Correlation between the Course outcomes and Program Outcomes A.Y. 2020-21

IV YEAR – II SEM

COURSECODE	COURSENAME	COURSE OUTCOMES	1	2	3	4	5	6	7	8	9	10	11	12	Pso1	Pso2
CE833OE	ENTREPRENEURSHIP AND SMALL BUSINESS ENTERPRISES	C421.1 Understand about different types of entrepreneurs & their training & developing methods (Understand)	3	2					2						3	
		C421.2 Buildup a New venture by studying the opportunities available in the markets . (Create)	3	2	2				2						3	
		C421.3 Identify the institutions which helps entrepreneurs to solve the problems during establishing & developing the organization(Remember)	3	3											3	
		C421.4 Design a strategy for marketing, managing and developing the organization. (Create)	3	2					2						2	
		C421.5 Understand the techniques of harvesting & expanding of a venture. (Understand)	3	3					2						3	
		C421.6 Locate the institutions which helps in developing new entrepreneurs. (Remember)	3	3											3	
		Average	**3**	**2.2**	**2**				**2**						**2.8**	
ME853PE	RENEWABLE ENERGY SOURCES	C422.1 Explain renewable energy sources & systems. (Remember)	3		2	2		3							3	
		C422.2 Apply engineering techniques to build solar, wind, tidal, geothermal, biofuel, fuel cell, Hydrogen and sterling engine. . (Understand)	3			2	3	3							2	
		C422.3 Analyze and evaluate the implication of renewable energy. Concepts in solving numerical problems pertaining to solar radiation geometry and wind energy systems. (Understand)	3		3	3	3								3	
		C422.4 Demonstrate self -learning capability to design & establish renewable energy systems . (Understand)	3			2		2							2	
		C422.5 Conduct experiments to assess the performance of solar PV, solar thermal and biodiesel systems. .(Remember)	3			3									3	

		C422.6 Understand, Analyze and estimate the potential of new and renewable energy source (RES), the solar energy option, Environmental impact of renewable energy, about sun and its radiation measurements. (Understand)														
		Average	**3.0**		**2.5**	**2.4**	**3.0**	**2.6**							**2.6**	
ME863PE	**UNCONVENTIONAL MACHINING PROCESSES**	C423.1: Define basic techniques of modern machining process and principle of USM. .(Remember)	3	3	2	2	2								3	3
		C423.2: Explain the principle behind AWJM and chemical machine, estimate the MRR.. (Understand)	3	3	2	2	2								2	3
		C423.3 : Define principle ,characteristics of EBM and calculate MRR .(Remember)	3	3	2	2	2								3	3
		C423.4: Differentiate thermal and non-thermal process and define EBM process and LBM process .(Analysis)	3	3	2	2	2								2	2
		C423.5: Define applications of plasma and estimate know MRR by using plasma. .(Remember)	3	3	2	2	2								3	2
		C423.6 : Express the principle of plasma arc machining with basic understanding of the methods used for evolving the plasma state using inert gases (Understand)	3	3	2	2	2								2	2
		Average	**3**	**3**	**2**	**2**	**2**								**2.4**	**2.4**