RAAJDHANI ENGINEERING COLLEGE
Course Outcome

Subject(Code): Mathematics (II) (C111) **Year/Semester of Study: 1st/2nd**

COs	CO Statements
C111.1	Apply the knowledge of matrix algebra for solving system of linear equations and compute the inverse of matrices.
C111.2	Develop the essential tool of matrices to compute Eigen values and Eigen vectors required for matrix diagonalization process.
C111.3	Illustrate the concept of vector differential calculus to understand the solenoidal and irrotational vectors.
C111.4	Understand the concept of vector integral calculus and exhibit the inter dependence of line integral and double integral (Green's theorem) and apply it to solve engineering problems.
C111.5	Apply the knowledge of surface and volume integrals (Gauss divergence and Stoke's theorem) to solve engineering problems.
C111.6	Know the use of periodic functions and Fourier series, Fourier intergral, Fourier transform to analyze circuit and system communication.

Subject(Code): Chemistry(C112) **Year/Semester of Study: 1st/2nd**

COs	CO Statements
C112.1	Demonstrate and realise the trend in various periodic properties associated with different elements present in different groups and periods of modern periodic table.
C112.2	Acquire the knowledge of free energy concept for the thermodynamics associated with chemical reactions and equilibriums.
C112.3	Analyze and implement the concepts of spectroscopic techniques for identification of various organic and inorganic compounds.
C112.4	Evaluate and visualize the concept of configurations and conformations of various organic compounds
C112.5	Able to assess the generation, reaction and identification of intermediates involved during organic reactions.
C112.6	Able to understand and generalise various organic reactions like addition, substitution and elimination reaction.

Subject(Code): Basic Electronics (C113) **Year/Semester of Study: 1st/2nd**

COs	CO Statements
C113.1	Understand the operation and application of semiconductor devices.
C113.2	Understand, construction and characteristics of FETs. & MOSFET
C113.3	Apply the Feedback Amplifiers and Operational Amplifiers.
C113.4	Analyse about the fundamentals of integrated circuits.
C113.5	Remember the fundamentals of different digital arithmetic operations.
C113.6	Understand about the electronics instruments, CRO and DSO.

Subject(Code): Engineering Mechanics(C114) **Year/Semester of Study: 1st/2nd**

COs	CO Statements
C114.1	Understand the basics of objects in static equilibrium including the determination of reactions, force systems and moments and analysis of trusses.
C114.2	Apply the fundamental concept of friction, virtual work and the analytical skills to solve the problems
C114.3	Evaluate the centroid and second moment of area of sections and their engineering applications.
C114.4	Apply the Principle of dynamics in a particle for rectilinear translation for solving realistic (/Practical) engineering problems.
C114.5	Analyse the different types of impact, coefficient of restituition and principle of conservation of momentum.
C114.6	Apply the concepts of D Alembert's principle in curvilinear motion and analysis of projectile motion.

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Subject(Code): Basic Mechanical Engineering(C115) **Year/Semester of Study: 1st/2nd**

COs	CO Statements
C115.1	Understand the fundamental concept of thermodynamics system.
C115.2	Analyse the application of thermodynamics in IC engine refrigerator and heat pump.
C115.3	Understand the concept of fluid mechanics and Heat transfer
C115.4	Understand the types of engineering materials and its properties.
C115.5	Understand the different manufacturing process and techniques.
C115.6	Understand the fundamental power transfer mechanisms and aware of the fundamental robotics system.

Subject(Code):Communicative English(C116) **Year/Semester of Study: 1st/2nd**

COs	CO Statements
C116.1	Analyse awareness about the complexity of the communication process.
C116.2	Understand learning environment to practice listening, speaking, reading and writing skills.
C116.3	Analyse the tasks and activities through guided instructions and materials.
C116.4	Understand effective writing skills so as enable students to write in a clear, concise, persuasive manner
C116.5	Analyse variety of forms of writing in professional world.
C116.6	Analyse English language learning with employability skills and training.

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Subject(Code):Chemistry Laboratory(117) **Year/Semester of Study: 1st/ 2nd**

COs	CO Statements
C117.1	Analyze the alkalinity and hardness value of the water sample.
C117.2	Analyze the concentration of chlorine and ferrous iron .
C117.3	Analyse kinetics of the reactions and they'll get knowledge on dissolve oxygen and find conc of Ca in lime stone
C117.4	Understand and analyze the concept of standardization.
C117.5	Analyze viscosity and flash point of lubricating oils.
C117.6	Concentration of a given potassium permanganate solution and know the synthesis of paracetamol and aspirin.

Subject(Code): Basic Electronics Lab (C118) **Year/Semester of Study: 1st/2nd**

COs	CO Statements
C118.1	Acquire basic knowledge on electronic devices and components
C118.2	Design different electronics circuits using semiconductor diodes.
C118.3	Analyze and develop the characteristics of BJT , FET & MOSFET Circuits
C118.4	Implement Operational amplifier circuits.
C118.5	Acquire knowledge on basic digital logic gates.
C118.6	Analyze and develop the input and output waveform of different rectifier circuits.

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Subject(Code):Communicative English Lab(C119) Year/Semester of Study:1st/2nd

COs	CO Statements
C119.1	To acquire strategic competence to use both spoken and written language in range a wide communication strategies.
C119.2	Enrich fundamental concept offriction and demonstrate the analytical skills to solve the problems involving friction.
C119.3	Assimilating the knowledge for determination of centroid and second moment of area of sectionsand their engineering applications.
C119.4	To analyze the work done by forces, the energy transferred from one object to other. and apply principle of work and energy conservation for realistic (/Practical) engineering problems.
C119.5	To apply principle of work and energy conservation for realistic (/Practical) engineering problems.
C119.6	Identify the various parameters in projectile motion. Apply the principle of dynamics to analyze the curvilinear motion of rigid bodies.

Subject(Code): Workshop & Digital Manufacturing Lab Year/Semester of Study: 1st/2nd

COs	CO Statements
C120.1	Design the Preparation of job in fitting section and Study of lathe and turning operation
C120.2	Construct the Preparation of job in black smith section/ Study of milling machine and milling operation
C120.3	Students will be able to design the Preparation of job in carpentry section/milling operation on CNC milling machine
C120.4	Students will be able to implement the Study of CNC lathe machine and turning on CNC lathe.
C120.5	Students will be able to learn the Study of Robot (Pick and place and palletizing operation).
C120.6	Students will be able to analysis the Study of additive manufacturing using 3D printer and product development