COURSE OUTCOMES (COs)

MAT 101 - LINEAR ALGEBRA AND CALCULUS

CO 1. solve systems of linear equations, diagonalize matrices and characterise quadratic forms

CO 2. compute the partial and total derivatives and maxima and minima of multivariable functions

CO 3. compute multiple integrals and apply them to find areas and volumes of geometrical shapes, mass and centre of gravity of plane laminas

CO 4 perform various tests to determine whether a given series is convergent, absolutely convergent or conditionally convergent

CO 5 determine the Taylor and Fourier series expansion of functions and learn their applications

PHT 110 ENGINEERING PHYSICS B (FOR NON-CIRCUIT BRANCHES)

CO 1 Compute the quantitative aspects of waves and oscillations in engineering systems.

CO 2 Apply the interaction of light with matter through interference, diffraction and identify these phenomena in different natural optical processes and optical instruments.

CO 3 Analyze the behaviour of matter in the atomic and subatomic level through the principles

of quantum mechanics to perceive the microscopic processes in electronic devices.

CO 4 Apply the knowledge of ultrasonics in non-destructive testing and use the principles of acoustics to explain the nature and characterization of acoustic design and to provide a safe and healthy environment.

CO 5 Apply the comprehended knowledge about laser and fibre optic communication systems in various engineering applications Mapping of course outcomes with program outcomes

HUN 101 LIFE SKILLS

CO 1 Define and Identify different life skills required in personal and professional life

CO 2 Develop an awareness of the self and apply well-defined techniques to cope with emotions and stress.

CO 3 Explain the basic mechanics of effective communication and demonstrate these through presentations.

CO 4 Take part in group discussions

Dr. K Vijayakumar
Principal
Thejus Engineering College
Vellarakkad P.O., Erumapetty
Thrissur - 680 584

CO 5 Use appropriate thinking and problem solving techniques to solve new problems CO 6 Understand the basics of teamwork and leadership Mapping of course outcomes with program outcome

MAT 102 VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS

CO 1 Compute the derivatives and line integrals of vector functions and learn their applications

CO 2 Evaluate surface and volume integrals and learn their inter-relations and applications.

CO 3 Solve homogeneous and non-homogeneous linear differential equation with constant coefficients
CO 4 Compute Laplace transform and apply them to solve ODEs arising in engineering

CO 5 Determine the Fourier transforms of functions and apply them to solve problems in Engg.

CYT 100 ENGINEERING CHEMISTRY

CO 1 Apply the basic concepts of electrochemistry and corrosion to explore its possible applications in various engineering fields.

CO 2 Understand various spectroscopic techniques like UV-Visible, IR, NMR and its applications.

CO 3 Apply the knowledge of analytical method for characterizing a chemical mixture or a compound. Understand the basic concept of SEM for surface characterisation of nanomaterials.

CO 4 Learn about the basics of stereochemistry and its application. Apply the knowledge of conducting polymers and advanced polymers in engineering.

CO 5 Study various types of water treatment methods to develop skills for treating Wastewater.

HUN 102 PROFESSIONAL COMMUNICATION

CO 1 Develop vocabulary and language skills relevant to engineering as a profession

CO 2 Analyze, interpret and effectively summarize a variety of textual content

CO 3 Create effective technical presentations

CO 4 Discuss a given technical/non-technical topic in a group setting and arrive at

generalizations/consensus

CO 5 Identify drawbacks in listening patterns and apply listening techniques for specific needs

CO 6 Create professional and technical documents that are clear and adhering to all the necessary conventions.

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MAT 206 GRAPH THEORY

CO1 Explain vertices and their properties types of paths classification of graphs and trees & their properties.

CO2 Demonstrate the fundamental theorem on Eulerian and Hamiltonian graphs.

CO3 Illustrate the working of prim's and Kruskal's algorithms for finding minimum cost spanning tree and Bijkstra's and Floyd-Warshall algorithms for finding shortest paths.

CO4 Explain planar graphs, their properties and an application for planar graphs.

CO5 Illustrate how one can represent a graph in a computer.

CO6 Explain the vertex color problem in graphs and illustrate an example application for vertex cloring.

MAT 203 DISCRETE MATHEMATICAL STRUCTURES

CO1 Check the validity of predicates Propositional and Quantified Propositional Logic using truth tables, deductive reasoning and inference theory on Propositional Logic.

CO2 Solve counting problems by applying elementary counting techniques – Rule 0f Sum, Rule of Product, Permutation, Combination, Binomial Theorem, Pigeonhole Principle and Principle of Inclusion and Exclusion.

CO3 Classify binary relations into various types and illustrate an application for each type of binary relation, in Computer Science.

CO4 Illustrate an application for Partially Ordered Sets an dComplete Lattices, in Computer Science

CO5 Explain Generating Functions and solve First Order Second Order Linear Recurrence Relations with Constant Coefficients.

CO6 Illustrate the abstract algebra systems Semigroups, Monoids, Groups, Homomorphism and Isomorphism of Monoids and Groups.

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CS 201 DISCRETE COMPUTATIONAL STRUCTURES

CO1 Identify and apply operations on discrete structures such as sets, relations and functions in different areas of computing.

CO2 verify the validity of an argument using propositional and predicate logic.

CO3 construct proofs using direct proof, proof by contraposition, proof by contradiction and proof by cases, and by mathematical induction.

CO4 Solve problems using algebraic structures.

CO5 Solve problems using counting techniques and combinatorics.

CO6 Apply recurrence relations to solve problems in different domains.

MAT 201 PARTIAL DIFFERENTIAL EQUATIONS & COMPLEX ANALYSIS

CO1 Understand the concept and the solution of partial differential equation

CO2 Analyze and solve one dimensional wave equation and heat equation.

CO3 Understand complex functions, its continuity, differentiability with the use of Cauchy Riemann equations.

CO4 Evaluate complex integrals using Cauchy's integral theorem and Cauchy's integral formula, understand the series expansion of analytic function.

CO5 Understand the series expansion of complex function about a singularity and apply Residue theorem to compute several kinds of real integrals.

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2.6.1

COURSE OUTCOMES

	07MA6003 ADVANCED ENGINEERING MATHEMATICS
CO1	Apply special functions in various engineering problems
CO2	Apply integral transforms in various engineering problems
CO3	Formulate engineering problems into Mathematical models using differential equations
CO4	**Analyze the solutions of wave equation**
CO5	Apply the tools of probability techniques
CO6	Apply the tools of sampling distribution in the field of engineering
	CS201 DISCRETE COMPUTATIONAL STRUCTURES
CO1	Identify and apply operations on discrete structures such as sets , relations and functions in different areas of computing
CO2	Apply recurrence relations to solve problems in different domains
CO3	Solve problems using algebraic structures
CO4	Apply the concept of latices and Boolian algebra
CO6	Verify the validity of an argument using propositional and predicate logic
CO6	Construct proofs using direct proof , proof by contrapositive , proof by contradiction and proof by mathematical induction
	HUN101 LIFE SKILL
CO1	Define and Identify different life skills required in personal and professional life
CO2	Develop an awareness of the self and apply well-defined technique to cope with emotions and stress
CO3	Explain the basic mechanics of effective communication and demonstrate these through presentations.
CO4	Take part in group discussions
CO5	Use appropriate thinking and problem solving techniques to solve new problems
CO6	Understand the basics of teamwork and leadership
	PHT 100 ENGINEERING PHYSICS A
CO1	Compute the quantitative aspects of waves and oscillations in engineering systems.
CO2	Apply the interaction of light with matter through interference, diffraction and identify these phenomena in different natural optical processes and optical instruments.
CO3	processes in electronic devices.
CO4	problems
CO5	system

	PHT 110 ENGINEERING PHYSICS B
CO1	Compute the quantitative aspects of waves and oscillations in engineering systems.
CO2	Apply the interaction of light with matter through interference, diffraction and identify these phenomena in different natural optical processes and optical instruments.
CO3	processes in electronic devices.
CO4	acoustic design and to provide a safe and healthy environment
CO5	Apply the comprehended knowledge about laser and fibre optic communication systems in various engineering applications
	HS210 LIFE SKILLS
CO1	1.- Students will be able to describe, analyze and apply the theories of communication in order to evaluate communication and presentation skills.
CO2	problems and case studi
CO3	conflicts.
CO4	1. They will recognize the importance of ethics and values in engineering and effectively solve ethical dilemmas in given situati
CO5	- They will be able to recall, summarize, choose and demonstrate leadership skills in accordance with given scenarios
	HS 200 BUSINESS ECONOMICS
CO1	To understand ethical business practices to develop the ability to explain core economic terms, concepts and theories
CO2	employability and prepare a business plan for an entrepreneurship project.
CO3	effect of trade cycles in business
CO4	a wide varety of technical plans
CO5	To make investment decisions based on capital budgeting methods in alignment with micro economic and macro economic theories .
CO6	Able to use methods for the business assessment, by reading and explaining balancesheets and Profit and Loss Accounts
	MA201 LINEAR ALGEBRA AND COMPLEX ANALYSIS
CO1	Apply the concept of analytic functions and testing the limit and continuity.
CO2	Discuss the transformations and finding the image of region under the transformation.
CO3	Evaluate by using cauchy's integral theorem or formula, Expand the function by Laurent's series.
CO4	Apply the concepts of singularities, Evaluate by using Residue theorem.
CO5	Solve system of linear equations , Identify Linear dependence and independence.
CO6	Diagonalize matrices and characterise quadratic form.
	PHL 120 ENGINEERING PHYSICS LAB
CO 1	Develop analytical or experimaental skill and impart prerequisite hands on experience for engineering laboratories.
CO 2	Understand the need for precise measurement practises for data recording.
CO 3	Understand principle,concept ,working and application of relevant technologies and comparison of results with theoretical calculations.
CO 4	Analyze the techniques and skill associated with modern scientific tools such as lasers.
CO 5	Develop basic communication skills through working in groups in performing the laboratory experiments an dby interpreting the results.
	HUN102 PROFESSIONAL COMMUNICATION
CO 1	Develop vocabulary and language skills relevant to engineering as a profession
CO 2	Analyze, interpret and effectively summarize a variety of textual content
CO 3	Create effective technical presentations
CO 4	Discuss a given technical/non-technical topic in a group setting and arrive at generalizations/consensus
CO 5	Identify drawbacks in listening patterns and apply listening techniques for specific needs
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THEJUS ENG... VELLARAKKAD ... THRISSUR 680 584

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