1.1.1: Curricula developed and implemented have relevance to the local, regional, national, and global developmental needs, which is reflected in the Programme outcomes (POs) and Course Outcomes(COs) of the Programmes offered by the institution

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PEOs, PSOs & COs

GR-14 B.Tech (Civil Engineering)

Department Vision:

To be the best Civil Engineering department in the region by means of good teaching, research and consultancy that serves the society.

Department Mission:

- Arranging field visits, guest lectures and interactive sessions with subject experts
- Creating a strong bond between industrial needs and academic research outcomes
- Undertaking collaborative projects which offer opportunities for long-term interaction between academia and industry
- Promoting the career of the faculty members by encouraging their research work
- Adopting best teaching practices, imparting employability skills and empowering to become entrepreneurs in the trade.

Program Educational Objectives (PEOs):

PEO1	Learning new technologies and/or undertaking higher education.
PEO2	Leading a team of engineers in executing projects.
PEO3	An entrepreneur in civil engineering community and/or a leadership role exhibiting systematic approach to resolve societal problems with ethical values.

Program Educational Objectives (PSOs):

PSOs	• PSO1: Get proficiency in management and communication skills to become an entrepreneur. • PSO2: Ability to use earth sciences in execution of civil engineering projects.

Program Outcomes (POs): Engineering Graduates will be able to:

- PO-1. Apply knowledge of computing, mathematics, science and engineering basics related to Civil Engineering.
- PO-2. Identify the problems and analyse the solutions by simulating, conducting experiments and interpreting data.
- PO-3 Design civil engineering structures to meet industrial needs.
- PO-4 Explore and investigate contemporary engineering problems and proposed solutions.
- PO-5 Use latest techniques, skills and modern machinery for engineering practices.
- PO-6 Propose civil engineering solutions to solve societal problems.
- PO-7 Design sustainable systems in congruence with social and environmental issues.
- PO-8 Practice professional ethics with legal awareness and societal responsibilities.
- PO-9 Work as an individual or in a team to achieve targets.
- PO-10 Articulate thoughts and ideas effectively at different levels.
- PO-11 Manage financial and human resources for better execution of project.
- PO-12 Participate in lifelong learning process.

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Course outcomes for First Year First Semester Course	
Course Code:14198101	
Course Title: English - I	
CO1:	Understand doing self-introspection and self-vigilance
CO2:	Achieve high quality of life, strength and sovereignty of a developed nation
CO3:	Understand the importance of writing skills and its techniques
CO4:	Envision the dangers of scientific and technological innovations
CO5:	Improve the exposure to universal happenings
CO6:	Communicate the necessity to exercise humour in the daily life
Course Code:14198201	
Course Title: English - II	
CO1:	Understand the proposed technology is people's technology and its service to the humanity instead of
CO2:	Understand that climate must be preserved
CO3:	Adopt the applications of modern technologies such as nano technology.
CO4:	Understand that water is the elixir of life
CO5:	Learn to work hard with devotion and dedication.
CO6:	Understand the advantages of work. They will overcome their personal problems and address
Course Code:14198102	
Course Title: Mathematics – I (Differential Equations)	
CO1:	Solve first and higher order ordinary differential equations(ODE) with applications by various techniques
CO2:	Apply Laplace Transforms to solve Initial Value Problems and evaluate Infinite Integrals.
CO3:	Apply Partial Differentiation to solve Inequalities and to find Maxima and Minima.
CO4:	Solve First and Higher order PDE with their applications to Heat equation, Wave equation, Laplace
Course Code:14198103	
Course Title: Mathematics – II (Numerical Methods and Integral Transforms)	
CO1:	Apply Numerical Techniques to solve Algebraic and Transcendental Equations and also Initial Value
CO2:	To interpolate the tabulated data at the given values using various interpolation techniques.
CO3:	Express a given function satisfying certain conditions in Fourier Series.
CO4:	Use finite and infinite Fourier Integral Transforms to solve BVPs
CO5:	Solve Difference Equations using Z-Transforms.
Course Code:14198202	
Course Title: Mathematics – III (Linear Algebra & Vector Calculus)	
CO1:	Use matrix theory to solve linear system of equations
CO2:	Find eigen values and Eigen vectors and use Cayley Hamilton theorem to find Inverse and Powers of a
CO3:	Learn applications of Integration and evaluation of Multiple Integrals.
CO4:	Use Beta, Gamma functions to evaluate Improper Integrals.
Course Code:14198104	
Course Title: Engineering Physics	
CO1:	Understand applications of optics using basic fundamentals of physics
CO2:	Explain the Modern Physics Concepts
CO3:	Familiar with basic elements of Quantum Theory
CO4:	knowledge about dual nature of wave function, Applications of Schrodinger wave equation Fermi-Dirac
CO5:	Identify the appropriate solid state materials for engineering applications
CO6:	formulate and solve the engineering problems on light and optics, Electromagnetism, wave mechanics
CO7:	Correlate Advanced Topics in Physics with Engineering Applications
CO8:	Get acquainted with Current Trends in Physics

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Course Code:	
Course Title: Engineering Physics Laboratory	
CO1:	Understand the techniques of interference and diffraction experimentally.
CO2:	Understand the resistance dependence on temperature for thermist or and to apply the experimental
CO3:	Enables to understand the velocity of sound and modes of propagation.
CO4:	Determination of Hall coefficient experimentally and knowledge about semiconductors
CO5:	Experimental knowledge on electricity and magnetism
CO6:	Understand the basics of Mechanics experimentally.
Course Code:14198112	
Course Title: Engineering Chemistry	
CO1:	Compare and contrast the chemical behaviour and physical properties of common substances.
CO2:	Understand the conventional and modern methods of processing of water for industrial and domestic
CO3:	Estimate the mixture of constituents present in industrial waste using conductometric and potentiometric titrations
CO4:	Classification of corrosion and factors effecting corrosion.
CO5:	Study the production and utility of polymers.
CO6:	Define a fuel and classify them on the basis of their physical state.
CO7:	Perform laboratory experiments that illustrate basic chemical principles
Course Code:14198212	
Course Title: Engineering Chemistry Laboratory	
CO1:	Experiment volumetric analysis and titrations with different indicators
CO2:	Analyse a few instrumental methods of chemical analysis
CO3:	Demonstrate different methods of chemical analysis and use of some commonly employed instruments.

GR-14 B.Tech Electrical & Electronic Engineering

Department Vision:

To be a pioneering department in preparing students to compete globally in their profession and making significant contribution to the society.

Department Mission:

- Establishing centers of excellence with focus on advancedtechnology
- By preparing the students for successful careers based on a strong normalethical foundation
- Delivering world class teaching, mentoring, intellectual stimulation, industry collaborations and state of the art research
- By training and educating students as global citizens to become entrepreneursin their chosen field

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Program Educational Objectives (PEOs):

PEO1	Engage in ongoing learning and professional development throughself- study, continuing education in Electrical and Electronics Engineering and also in other allied fields
PEO2	Apply their engineering skills, exhibiting critical thinking and problem solving skills in professional engineering practices or tacklesocial, technical and business challenges
PEO3	Improve professional competence through lifelong learn inincluding higher education and research

Program Specific Outcomes (PSO's):

PSO1	Apply knowledge of power system configuration, electrical equipmentand protection practices to the design and specifications of electrical generation, transmission, distribution and utilization systems
PSO2	To design. Analyze, test and evaluate the performance of theelectrical machines and transformers
PSO3	To develop the expertise in the technology associated with efficient conversion and control of electrical power by static means fromavailable forms to the required form
PSO4	Graduates will able to work as research fellow and implement theirknowledge in all electrical and electronics research organization of defense, renewable energy, mines, chemical and power plants

Program Outcomes (POs): Engineering Graduates will beable to:

1	**Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complexengineering problems.
2	**Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3	**Design/development of solutions:** Design solutions for complex engineering problemsand design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4	**Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5	**Modern tool usage:** Create, select, and apply appropriate techniques, resources, andmodern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6	**The engineer and society:** Apply reasoning informed by the contextual knowledgeto assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7	**Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate theknowledge of, and need for sustain able development.
8	**Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9	**Individual and team work:** Function effectively as an individual, and as a memberor leader in diverse teams, and in multidisciplinary settings.

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10	**Communication:** Communicate effectively on complex engineering activities with theengineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11	**Project management and finance:** Demonstrate knowledge and understanding of theengineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multi-disciplinaryenvironments.
12	**Life-long learning:** Recognize the need for, and have the preparation and abilityto engage in independent and life-long learning in the broadest context of technological change.

Course Outcomes for First Year First SemesterCourse	
Course Code: 14199102	
Course Title: Mathematics-I	
CO-1	Solve first and higher order ordinary differential equations (ODE) with applications byvarious techniques
CO-2	Apply Laplace Transforms to solve Initial Value Problems and evaluate InfiniteIntegrals
CO-3	Apply Partial Differentiation to solve Inequalities and to find maxima and minima
CO-4	Solve first and higher order PDE with their applications to Heat equation, waveequation, Laplace equation
Course Code: 14199101	
Course Title: English-I	
CO-1	Take inspiration by reading autobiographies
CO-2	Aspire for the useful innovations to improve living
CO-3	Help the common man and achieve the social cause
CO-4	Achieve the target without compromise
Course Code: 14199104	
Course Title: Applied Mechanics	
CO-1	Summaries the behavior of basic materials under the influence of different external
CO-2	Determine shear Force and Bending moments in statically determinate Beams and draw theDiagrams.
CO-3	Examine the different methods to find slope and deflection of beams subjected to loads
CO-4	Estimate the principal stresses & strains and torsional stresses in structural members
Course Code: 14199191	
Course Title: Professional Ethics & Human Values	
CO-1	Understood the core values that shape the ethical behavior of an engineer
CO-2	Exposed awareness on professional ethics and human values
CO-3	Known their role in technological development
CO-4	knowledge of contemporary issues related to human and professional Interactions atworkplace which helps students to understand practically the importance of trust, mutually satisfying human behavior and enriching interaction with nature
Course Code: 14199103	
Course Title: Computer Programming	

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CO-1	Obtain the knowledge about different languages used in computer programming
CO-2	Write algorithm. Flow chart, and structure of C program and make use of different C tokens
CO-3	Develop program by using control structure , different looping and Jump statements
CO-4	Implement applications of Array, structure and String inside the program
Course Code: 14199181	
Course Title: Engineering Workshop & IT Workshop	
CO-1	Explain the limitations, tolerances, safety aspects of electrical systems & wiring.
CO-2	Select wires/cables and other accessories used in different types of wiring
CO-3	Make simple lighting and power circuits
CO-4	Make disassembling and assembling of PC.
Course Code: 14199111	
Course Title: English Communication Lab I	
CO-1	Learn to communicate in English
CO-2	Comprehend native speaker's accent
CO-3	Speak appropriately in real life situations
CO-4	Display public speaking skills in the required context
Course Code: 14199112	
Course Title: Computer Programming Lab	
CO-1	Obtain the knowledge about different languages used in computer programming
CO-2	Write algorithm. Flow chart, and structure of C program and make use of different C tokens
CO-3	Develop program by using control structure , different looping and Jump statements
CO-4	Implement applications of Array, structure and String inside the program
Course Code : 14199105	
Course Title : Basic Engineering Drawing	
CO-1	Apply principles of drawing to represent dimensions of an object
CO-2	Outline the Polygons and engineering curves
CO-3	Illustrate projections of points, lines, plane and solids
CO-4	Illustrate 3D views through isometric views
Course Outcomes for First Year Second Semester Course	
Course Code: 14199203	
Course Title: Mathematics-II	
CO-1	Apply numerical techniques to solve algebraic and transcendental equations and also initial value problems and ODE
CO-2	To interpolate the tabulated data at the given values using various interpolation techniques
CO-3	Express a given function satisfying certain conditions in Fourier series
CO-4	Use finite and infinite Fourier Integral Transforms to solve BVPs
Course Code: 14199204	
Course Title: Engineering Physics	
CO-1	Understand applications of optics using basic fundamentals of Physics

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CO-2	Explain the Modern Physics Concepts
CO-3	Familiar with Basic Elements of Quantum Theory
CO-4	knowledge about dual nature of wave function, Applications of Schrodinger waveequation Fermi-Dirac probability function
Course Code: 14199201	
Course Title: English-II	
CO-1	Be inspired by Bose's achievements so that he may start his own original work
CO-2	Be inspired by Bhabha's achievements so as to make his own experiments
CO-3	Realize that development is impossible without scientific research
CO-4	Appreciate the art of writing a short story and try his hand at it.
Course Code: 14199202	
Course Title: Mathematics – III	
CO-1	Use matrix theory to solve linear system of equations
CO-2	Find eigen values and Eigen vectors and use Cayley Hamilton theorem to find Inverse and Powers of a Matrix and also reduce a given Quadratic form to Canonical form
CO-3	Learn applications of Integration and evaluation of Multiple Integrals
CO-4	Use Beta, Gamma functions to evaluate Improper Integrals
Course code : 14199212	
Course Title: Engineering Physics Laboratory	
CO-1	To handle optical instruments like microscope and spectrometer
CO-2	To demonstrate the importance of dielectric material in storage of electric field energyin capacitors
CO-3	To evaluate the resistivity of the given semiconductor using probe method
CO-4	To identify the type of semi-conductor
Course Code: 14199206	
Course Title: Environmental Studies	
CO-1	Gain a higher level of personal involvement and interest in understanding and solvingenvironmental problems
CO-2	Comprehend environmental problems from multiple perspectives with emphasis on human modern life styles and developmental activities
CO-3	Demonstrate knowledge relating to the biological systems involved in the major global environmental problems of 21st century
CO-4	Recognize the interconnectedness of human dependence on the earth's eco system
Course Code: 14199211	
Course Title: English Communicative English Laboratory II	
CO-1	Learn to communicate in English
CO-2	Comprehend native speaker's accent
CO-3	Speak appropriately in real life situations
CO-4	Display public speaking skills in the required context
Course Code : 14199205	
Course Title : Advanced computer programming	
CO-1	Obtain the knowledge about different languages used in computer programming
CO-2	Write algorithm. Flow chart, and structure of C program and make use of different C tokens

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CO-3	Develop program by using control structure , different looping and Jump statements
CO-4	Implement applications of Array, structure and String inside the program
Course Code : 14199213	
Course Title : Advanced computer programming Lab	
CO-1	Obtain the knowledge about different languages used in computer programming
CO-2	Write algorithm. Flow chart, and structure of C program and make use of different C tokens
CO-3	Develop program by using control structure , different looping and Jump statements
CO-4	Implement applications of Array, structure and String inside the program

GR-14 B.Tech (Mechanical Engineering)

Department Vision: To be recognized as a Global Centre of Excellence in Mechanical Engineering Education, Research and Consultancy

Department Mission: Department of Mechanical Engineering strives to provide scope for all round development of the students and staff by engaging them in various activities such as

- Participative learning so that students internalize their classroom learning practices.
- Student centric learning practices such as summary sessions, learn-ahead-of class, problem solving.
- Extensive practical courses to foster learning by observation.
- Exposing students, faculty and staff to various industrial practices and usage of modern tools to reinforce their classroom/laboratory learning.
- Sensitization towards importance of ethical practice, societal responsibility, leadership skills, entrepreneurship skills, communication skills and lifelong learning.

Program Educational Objectives (PEOs):

PEO1	Working professional in Mechanical Engineering field or other disciplines to develop products, processes to solve Mechanical Engineering related or other problems for betterment of society.
PEO2	Pursuing further education to enrich their knowledge in Mechanical Engineering or other fields.
PEO3	Undertaking entrepreneurial ventures in Mechanical Engineering or other disciplines.

Program Specific Outcomes (PSO's):

PSO1	Join a technically sophisticated workforce as successful professionals in a wide range of mechanical engineering and related fields.
PSO2	Continuously improve and expand their technical and professional skills through formal means as well as through informal self-study.
PSO3	Pursue advanced degrees in engineering, business, or other professional fields.
PSO4	Advance themselves professionally and personally by accepting professional and social responsibilities and pursuing leadership roles.

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Program Outcomes (POs): Engineering Graduates will be able to:

1	Apply fundamental knowledge of Science, Mathematics and Engineering principles in solving problems related to Mechanical Engineering.
2	Apply principles of design engineering, thermal engineering, production engineering and industrial engineering to arrive at a physically meaningful analysis of engineering problems.
3	Present feasible designs for simple domestic and industrial Mechanical Engineering problems through drawings and other multimedia tools to meet desired needs.
4	Identify, formulate and solve Mechanical engineering problems through rigorous research methodology.
5	Use Drafting, Modeling and Analysis Software and/or hardware tools for meaningful and economically viable Engineering practice.
6	Apply knowledge of Thermal, Design, Automation Technologies and Management principles to inter-disciplinary engineering problems and their societal implications.
7	Understand and propose, where ever possible, environment-friendly and sustainable solutions to Mechanical Engineering problems.
8	Expertise in following ethical code of conduct in professional activities.
9	Use their analytical, teamwork, leadership skills in the development of products and provide solutions to problems sought by local and/or global community.
10	Communicate verbally, textually and graphically to collaborate effectively towards engineering activities
11	Inspire confidence in team members to realize the goals of the organization and manage finances an sizeable projects by choosing the right blend of common sense solutions.
12	Develop confidence and a sense of curiosity towards life-long learning to adapt to ever changing technologies.

Course outcomes for First Year First Semester Course	
Course Code:14198101	
Course Title: English-I	
CO1:	Understand doing self introspection and self vigilance
CO2:	Achieve high quality of life, strength and sovereignty of a developed nation
CO3:	Understand the importance of writing skills and its techniques
CO4:	Envision the dangers of scientific and technological innovations
CO5:	Improve the exposure to universal happenings
CO6:	Communicate the necessity to exercise humour in the daily life
Course Code: 14198102	
Course Title: Mathematics – I	
CO1:	Solve first and higher order ordinary differential equations(ODE) with applications by various techniques.
CO2:	Apply Laplace Transforms to solve Initial Value Problems and evaluate Infinite Integrals.
CO3:	Apply Partial Differentiation to solve Inequalities and to find Maxima and Minima.
CO4:	Solve First and Higher order PDE with their applications to Heat equation, Wave equation, Laplace equation
Course Code: 14198103	
Course Title: Mathematics – II	
CO1:	Apply Numerical Techniques to solve Algebraic and Transcendental Equations and also Initial Value Problems and ODE.
CO2:	To interpolate the tabulated data at the given values using various interpolation techniques.
CO3:	Express a given function satisfying certain conditions in Fourier Series.
CO4:	Use finite and infinite Fourier Integral Transforms to solve BVPs.

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CO5:	Solve Difference Equations using Z-Transforms.
Course Code : 14198103	
Course Title: Engineering Physics	
CO1:	Understand applications of optics using basic fundamentals of Physics
CO2:	Explain the Modern Physics Concepts
CO3:	Familiar with Basic Elements of Quantum Theory
CO4:	Knowledge about dual nature of wave function, Applications of Schrodinger wave equation Fermi-Dirac probability function, Position of Fermi level in intrinsic and extrinsic semiconductors, Semiconductor conductivity
CO5:	Identify the appropriate solid state materials for engineering applications
CO6:	Formulate and solve the engineering problems on light and optics, Electromagnetism, wave mechanics
CO7:	Correlate Advanced Topics in Physics with Engineering Applications
CO8:	Get acquainted with Current Trends in Physics
Course Code: 14198106	
Course Title: Environmental Studies	
CO1:	Demonstrate a scientific understanding of the physical and biological dynamics of global ecologies including first-hand knowledge of local and regional ecosystems
CO2:	Analyze the social, economic, and political and policy dynamics involved in both the emergence and the resolution of environmental problems
CO3:	Explain and analyze the historical development, ethical implications, and religious dimensions of the human relationship with the nonhuman world
CO4:	Understand the complex relationships between natural and human systems.
CO5:	Understand Industrial designs must be correlate with the government rules and policies.
Course outcomes for First Year Second Semester Course	
Course Code: 14198201	
Course Title: English – II	
CO1:	Understand the proposed technology is people's technology and its service to the humanity instead of making them servant of machines.
CO2:	Understand that climate must be preserved
CO3:	Adopt the applications of modern technologies such as nanotechnology.
CO4:	Understand that water is the elixir of life
CO5:	Learn to work hard with devotion and dedication.
CO6:	Understand the advantages of work. They will overcome their personal problems and address themselves to national and other problems.
Course Code: 14198202	
Course Title: Mathematics –III	
CO1:	Use matrix theory to solve linear system of equations
CO2:	Find eigen values and Eigen vectors and use Cayley Hamilton theorem to find Inverse and Powers of a Matrix and also reduce a given Quadratic form to Canonical form.
CO3:	Learn applications of Integration and evaluation of Multiple Integrals.
CO4:	Use Beta, Gamma functions to evaluate Improper Integrals.
CO5:	Use vector differentiation and integration with vector integral theorems
Course Code: 14198203	
Course Title: Engineering Chemistry	
CO1:	Compare and contrast the chemical behaviour and physical properties of common substances.
CO2:	Understand the conventional and modern methods of processing of water for industrial and domestic use.
CO3:	Estimate the mixture of constituents present in industrial waste using conductometric and potentiometric titrations

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CO4:	Classification of corrosion and factors effecting corrosion.
CO5:	Study the production and utility of polymers.
CO6:	Define a fuel and classify them on the basis of their physical state.
CO7:	Perform laboratory experiments that illustrate basic chemical principles
Course Code: 14198291	
Course Title: Professional Ethics and Human Values	
CO1:	Understood the core values that shape the ethical behaviour of an engineer
CO2:	Exposed awareness on professional ethics and human values.
CO3:	Known their role in technological development.
CO4:	A knowledge of contemporary issues related to human and professional
CO5:	Interactions at workplace which helps students to understand practically the importance of trust, mutually satisfying human behaviour and enriching interaction with nature
Course Code: 14198211	
Course Title: English Communication Skills Lab-II	
CO1:	Understand the benefits of learning kinesics
CO2:	Make the social life comfortable with conversational ability
CO3:	Adopt employability skills
CO4:	Develop coordinating skills
CO5:	Exhibit good argumentative skills
CO3:	Speak appropriately in real life situations
CO4:	Display public speaking skills in the required context
CO5:	Handle different communicative situations

GR-14 B.Tech (Electronics & Communication Engineering)

Department Vision:

Create an educational environment to mound the students to meet the challenges of modern Electronics & Communication industry through state of the art Technical knowledge and Innovative experimental Approaches.

Department Mission:

- To create learning, development and testing environment to meet ever challenging needs of the Electronic industry
- TocreateentrepreneurialenvironmentandindustryInteractionforMutualbenefit
- To become a global partner in training human resources in the fields of chip design, instrumentation and networking
- To associate with internationally reputed Institutions for Academic excellence and collaborative Research

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Program Educational Objectives (PEOs):

PEO1	To prepare students with excellent comprehension of basic Sciences, mathematics and engineering subjects facilitating them to gain employment or pursue postgraduate studies with an appreciation for lifelong learning.
PEO2	To train students with problem solving capabilities such as analysis and design with adequate practical skills wherein they demonstrate creativity and innovation that would enable them to develop state of the art equipment and technologies of multidisciplinary nature for societal development.

Program Specific Outcomes (PSO's):

PSO1	Analyze and design analog and digital circuits or systems for a given specification and function
PSO2	Implement functional blocks of hardware-software co-designs for signal processing and communication applications.

Program Outcomes (POs): Engineering Graduates will be able to:

1	**Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2	**Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3	**Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified need switch appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4	**Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5	**Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6	**The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, leg a land cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7	**Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8	**Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9	**Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10	**Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11	**Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one' sown work, as a member and leader in a team, to manage projects and in multi-disciplinary environments.
12	**Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

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Course outcomes (Cos) o fall courses of all programs offered by the institution

Course Outcomes for First Year First Semester Course	
Course Code:14199101	
Course Title: ENGLISH –I	
CO-1	The learner will understand how Gandhi grew in introspection and maturity.
CO-2	The learners will achieve a higher quality of life, strength and sovereignty of a developed nation.
CO-3	This develops in the student the scientific attitude to solve many problems which we find difficult to tackle.
CO-4	The learner will be able to think clearly and logically and write clearly and logically.
CO-5	The learner will understand that all men can come together and avert the peril.
CO-6	This provides the students to think about the scientific phenomena from a different angle and also exposes the readers to poetic expressions.
Course Code:14199102	
Course Title: Mathematics – I	
CO-1	Transform the knowledge of solving system of linear equations using matrices.
CO-2	Apply mean value Rolls, Lagranges and Cauchy mean value theorem in engineering applications
CO-3	Acquire the knowledge maxima and minima of function of several variables
CO-4	Evaluate multiple integrals and their applications
CO-5	Understand Beta and Gamma functions, evaluate improper integrals
Course code: 14199111	
Course Title: English Communication Skills Lab-I	
CO-1	Paraphrase short academic texts using suitable strategies and conventions
CO-2	Make formal structured presentations on academic topics using PPT slides with relevant graphical elements
CO-3	Build the ability to convey in different communicative forms.
Course Outcomes for First Year Second Semester Course	
Course Code: 14199201	
Course Title: ENGLISH –II	
CO-1	Paraphrase short academic texts using suitable strategies and conventions
CO-2	Make formal structured presentations on academic topics using PPT slides with relevant graphical elements
CO-3	Build the ability to convey in different communicative forms
Course code: 14199204	
Course Title: Engineering Physics	
CO-1	To impart knowledge of physical optical phenomenon like Interference, Diffraction and polarization involving design of optical instruments with higher resolution To explain the concept of dielectric constant and polarization in dielectric materials and summarize Gauss's law in the presence of dielectrics
CO-2	To interpret dielectric loss, Lorentz field and Claussius- Mosotti relation and classify the magnetic materials based on susceptibility and their temperature dependence. To apply the Gauss' Theorem for divergence and Stokes' Theorem for curl and evaluate Maxwell's displacement current and correction in Ampere's law.
CO-3	To assess the electromagnetic wave propagation in different media and its power and explain the working principle of optical fibers and its classification based on refractive index profile and mode of propagation with their applications. To classify the energy bands of semiconductors and outline the properties of n-type and p-type semiconductors

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CO-4	To study the basic Quantum mechanics, interpretation of the direct and indirect band gap in semiconductors and identify the type of semiconductor using Hall effect.
Course Code: 14199202	
Course Title: Mathematics – III	
CO-1	Solve problems in engineering domain related to Linear Algebra using matrices.
CO-2	Analyze and solve engineering problems using Laplace Series.
CO-3	Analyze and solve engineering problems using Fourier Series.
CO-4	Solve engineering problems using Complex Integration
Course code: 14199206	
Course Name: Environmental Studies	
CO-1	Gain a higher level of personal involvement and interest in understanding and solving environmental problems.
CO-2	Comprehend environmental problems from multiple perspectives with emphasis on human modern lifestyles and developmental activities
CO-3	Demonstrate knowledge relating to the biological systems involved in the major global environmental problems of the 21st century
CO-4	Recognize the interconnectedness of human dependence on the earth's ecosystems
CO-5	Influence their society in proper utilization of goods and services.
Course code: 14199211	
Course Name: English Communication Skills Lab-II	
CO-1	Communicate confidently in English in social and professional contexts with improved skills of fluency and accuracy
CO-2	Speak grammatically correct sentences employing appropriate vocabulary suitable to different contexts
CO-3	Read for various scholarly materials for information and comprehension
Course code: 14199212	
Course Name: Engineering Physics Lab	
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