



EXCEL ENGINEERING COLLEGE

(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM – 637303

R2020 Course Outcome

Course Code : C101

Course Name : 20MA104 Mathematics – I for Electrical Sciences

After the completion of this course, students are able to [Blooms Taxonomy]

C101.1	Apply the concept of orthogonal reduction to diagonals the given matrix
C101.2	Understand the limit definition and rules of differentiation to differentiate functions
C101.3	Determine the circle of curvature, evaluate and envelope of the curves
C101.4	Compute double and triple integrals
C101.5	Apply the concepts of differentiation and integration to vectors

Course Code : C102

Course Name : 20BM101 Basics of Electrical and Biomedical Engineering

After the completion of this course, students are able to [Blooms Taxonomy]

C102.1	Explain the concepts related with electrical circuits and wiring
C102.2	Explain the different three phase connections and the concepts of magnetic circuits
C102.3	Interpret the operating principle of AC and DC machines
C102.4	Identify the major role that advances in medical technology
C102.5	Describe the process used for communication among neurons

Course Code : C103

Course Name : 20ENE01 Communicative English

After the completion of this course, students are able to [Blooms Taxonomy]

C103.1	Use effectively the lexical, grammatical and semantic knowledge
C103.2	Communicate with clarity using intentional vocabulary in English
C103.3	Articulate perfectly and express their opinions confidently using communicative strategies
C103.4	Accomplish listening and reading skills for lifelong learning
C103.5	Comprehend, interpret and present data

Course Code : C104

Course Name : 20PH102 Physics for Electrical Sciences

After the completion of this course, students are able to [Blooms Taxonomy]

C104.1	Compare the working of lasers and propagation of light through optical fibers and its applications
C104.2	Demonstrate the thermal conductivity of the good and bad conductors
C104.3	Explain the knowledge about elasticity
C104.4	Interpret the knowledge about semiconductor materials
C104.5	Illustrate the working of optoelectronic devices

Course Code : C105

Course Name : 20CS102 Problem Solving using Python

After the completion of this course, students are able to [Blooms Taxonomy]

C105.1	Develop algorithmic solutions to simple computational problems and read, write, execute by simple python programs.
C105.2	Structure simple python programs for solving problems.
C105.3	Administer the role of control statements and functions involving the idea of modularity
C105.4	Represent compound data using python strings and lists.
C105.5	Read and write data from/to files in python Programs.

Course Code : C106

Course Name : 20BM102 Biomedical Engineering Practices Laboratory

After the completion of this course, students are able to [Blooms Taxonomy]

C106.1	Construct basic Hospital electrical wirings for Intensive Care Units [ICU
C106.2	Test and Measure patient lead leakage including electrical quantities using Patient Safety Analyzers
C106.3	Demonstrate sine, square and triangular waveforms with required frequency and amplitude using function generator
C106.4	Identify the RLC Components and Logic gates
C101.5	Design medical electronic circuits using Electronic Design tools

Course Code : C107

Course Name : 20MC101 Induction Programme

After the completion of this course, students are able to [Blooms Taxonomy]

C107.1	Perform curricular and co-curricular activities excellently
C107.2	Do the skill based training with excellence
C107.3	Work as team for the given task
C107.4	Gain character and behaviour
C107.5	Demonstrate the acquired skills effectively

Course Code : C108

Course Name : 20MA204 Mathematics - II for Electrical Sciences

After the completion of this course, students are able to [Blooms Taxonomy]

C108.1	Compute an analytic function ,when its real or imaginary part is known
C108.2	Identify the Singularities and its corresponding Residues for the given function
C108.3	Compare Laplace transform, Inverse Laplace transform and solve the linear differential equations by Laplace transform techniques.
C108.4	Solve Engineering problems using Fourier transform techniques
C108.5	Solve difference equations using Z-transforms that arise in discrete time systems

Course Code : C109

Course Name : 20BM201 Biochemistry

After the completion of this course, students are able to [Blooms Taxonomy]

C109.1	Explain the Chemical bonds and its application
C109.2	Classify the Metabolic activity of Carbohydrates
C109.3	Understand the basics of Protein Metabolism
C109.4	Compare fatty acid metabolism and nucleic acid metabolism
C109.5	Classify the bio energetic and high energy compounds

Course Code : C110

Course Name : 20ENE02 Advanced Communicative English

After the completion of this course, students are able to [Blooms Taxonomy]

C110.1	Apply knowledge of English grammar for effective communication
C110.2	Make use of common English phrases and vocabulary strength
C110.3	Build self-confidence and enhance professionalism
C110.4	Implement listening, reading and writing skills in real - life situations
C110.5	Speak fluently in English with proper pronunciation, intonation, tone and accent.

Course Code : C111

Course Name : 20CH202 Chemistry for Electrical Sciences

After the completion of this course, students are able to [Blooms Taxonomy]

C111.1	Develop innovative and eco-friendly method for water purification to meet the growing industrial demand
C111.2	Understand the basic principles and mechanism of working of batteries and fuel cells
C111.3	Deliberate about various types of alloys and engineering materials
C111.4	Use the principles of electro chemical cells, EMF, electroplating and electrolysis & cones and development of its lateral surfaces.
C111.5	Demonstrate the importance of protection of metals from corrosion

Course Code : C112

Course Name : 20ME203 Engineering Graphics

After the completion of this course, students are able to [Blooms Taxonomy]

C112.1	Develop the conic sections, special curves, and draw orthographic views from pictorial views.
C112.2	Affront the principles of orthographic projections of points in all quadrants, lines and planes in first quadrant.
C112.3	Construct the projections of simple solids like prisms, pyramids, cylinder and cone.
C112.4	Build the sectional views of solids like cube, prisms, pyramids, cylinders & cones and development of its lateral surfaces.
C112.5	Organize and draw isometric and perspective sections of simple solids

Course Code : C113

Course Name : 20BM202 Biochemistry Laboratory

After the completion of this course, students are able to [Blooms Taxonomy]

C113.1	Get knowledge on the PH and buffer solution preparation
C113.2	Have adequate knowledge on qualitative analysis of bio molecules
C113.3	Gain knowledge on the estimation of biomolecules.
C113.4	Acquire knowledge on collections of blood
C113.5	Get sufficient knowledge on the concept of SDS electrophoresis

Course Code : C114

Course Name : 20MC202 Interpersonal Skills

After the completion of this course, students are able to [Blooms Taxonomy]

C114.1	Practice interpersonal communication skills to influence and build good relationships
C114.2	Identify and pursue personal learning goals.
C114.3	Give evident feedback
C114.4	Reveal group dynamics and amiable behavior
C114.5	Emphasis the communication process

Course Code : C115

Course Name : 20ENE03 HINDI

After the completion of this course, students are able to [Blooms Taxonomy]

C115.1	Construct simple sentences and use vocabulary required for day-to-day conversation
C115.2	Distinguish and understand the basic sounds of Hindi language.
C115.3	Appear for Hindi examinations conducted by Dakshin Bharat Hindi Prachar Sabha.

Course Code : C116

Course Name : 20ENE04 FRENCH

After the completion of this course, students are able to [Blooms Taxonomy]

C116.1	To help students acquire familiarity in the French alphabet & basic vocabulary
C116.2	listen and identify individual sounds of French
C116.3	Use basic sounds and words while speaking
C116.4	Read and understand short passages on familiar topics
C116.5	Understand and use basic grammar and appropriate vocabulary in completing language tasks

Course Code : C201

Course Name : 20MA302 Partial Differential Equations and Linear Algebra

After the completion of this course, students are able to [Blooms Taxonomy]

C201.1	Apply linear independence and dependence of vectors and basis of vector spaces
C201.2	Construct an orthonormal basis by applying the Gram-Schmidt process
C201.3	Classify the linear and non-linear partial differential equations
C201.4	Apply Fourier series to solve engineering problems
C201.5	Interpret the solution of Partial Differential Equations.

Course Code : C202

Course Name : 20BM301 Signals and Systems for Bioengineers

After the completion of this course, students are able to [Blooms Taxonomy]

C202.1	Explain the basic concepts of Biosignals and Physiological Systems with its Characteristics
C202.2	Analyze Analog CT signals and systems with Fourier series, CTFT including Laplace Transform for LTI Analog System Analysis
C202.3	Analyze Discrete DT signals and systems using Fourier transform, DTFT and Z-Transform Transform for LTI Discrete System Analysis
C202.4	Analyze Concurrent, Coupled and Correlated Physiological Process with examples for event detection in Biomedical applications
C202.5	Explain Joint Time Frequency [JTFA] Concepts for Biosignal interpretation and Classification

Course Code : C203

Course Name : 20BM302 Circuit Theory

After the completion of this course, students are able to [Blooms Taxonomy]

C203.1	Interpret DC and AC circuits using basic laws
C203.2	Solve and verify network theorems
C203.3	Analyze transient response of RC, RL and RLC circuits
C203.4	Analyze any circuits by using frequency domain method
C203.5	Illustrate the magnetically coupled circuits

Course Code : C204

Course Name : 20BM303 Electronic Devices and Circuits

After the completion of this course, students are able to [Blooms Taxonomy]

C204.1	Explain the characteristics of PN junction diode and Zener diode
C204.2	Interpret the construction, operation and characteristics of BJT and FET devices
C204.3	Identify and design a suitable amplifier for a given specification
C204.4	Summarize Explain the performance of operational amplifier
C204.5	Analyze the applications of operational amplifier

Course Code : C205

Course Name : 20BM304 Biosensors and Measurements

After the completion of this course, students are able to [Blooms Taxonomy]

C205.1	Understand common biochemical interactions used to quantify biological molecules and the electronic technologies used to detect and measure them
C205.2	Apply principles of electrochemical sensors and its sensing capabilities
C205.3	To know the principles behind Seismic (mass) and Thermal sensors for human body status
C205.4	Understand biochemical assaying formats and molecular level recognition
C205.5	To fully explore benefits of optical sensors with its relevant source and detectors for non-invasive devices & quantification

Course Code : C206

Course Name : 20BM305 Human Anatomy and Physiology

After the completion of this course, students are able to [Blooms Taxonomy]

C206.1	Explain basic structure and functions of cell
C206.2	Understand anatomy and physiology of various systems of human body
C206.3	Identify all systems in the human body.
C206.4	Explain organs and structures involving in system formation and functions.
C206.5	Understand human digestive and excretory system functional aspects

Course Code : C207

Course Name : 20BM306 Electronic Devices and Circuits Laboratory

After the completion of this course, students are able to [Blooms Taxonomy]

C207.1	Find the V-I characteristics of PN junction and Zener diode
C207.2	Demonstrate the construction, operation and characteristics of BJT and FET
C207.3	Design and analyze the frequency response of amplifiers and oscillators
C207.4	Analyze the application of operational amplifier
C207.5	Analyze the operation of multivibrators using 555 timer

Course Code : C208

Course Name : 20MC301 Environmental Science

After the completion of this course, students are able to [Blooms Taxonomy]

C208.1	Describe the ecosystem and environment
C208.2	Understand the ecological balance and preservation of bio diversity
C208.3	Demonstrate various types of pollution in order to control pollution
C208.4	Classify the energy sources for the conservation of non conventional energy sources
C208.5	Identify the nature and management of e-waste and solid waste

Course Code : C209

Course Name : 20BMA01 Scientific Computing for Biologists

After the completion of this course, students are able to [Blooms Taxonomy]

C209.1	Understand the principles of acquiring biological data
C209.2	Summarize the tools of biomedical signals
C209.3	Classify the biological signals and patterns
C209.4	Apply statistics capabilities to determine significance in Bio-studies
C209.5	Create plots and reports for tabular biological data

Course Code : C210

Course Name : 20MA402 Probability And Stochastic Process

After the completion of this course, students are able to [Blooms Taxonomy]

C210.1	Explain the concepts of random variables and probability distributions.
C210.2	Compare the functions of multiple random variables.
C210.3	Interpret the concepts of random processes in their fields.
C210.4	Determine correlation and spectral densities.
C210.5	Estimate the response of linear time invariant systems for random inputs with more than one variable.

Course Code : C211

Course Name : 20BM401 Digital Electronics

After the completion of this course, students are able to [Blooms Taxonomy]

C211.1	Apply Boolean theorems to minimize logic expressions in different forms and implement them using logic gates
C211.2	Design various combinational circuits using logic gates
C211.3	Design synchronous-sequential circuits for a given specification
C211.4	Analyze the characteristics and structure of different memory systems and programmable logic devices
C211.5	Interpret the various ADC and DAC

Course Code : C212

Course Name : 20BM402 Medical And Radiation Physics

After the completion of this course, students are able to [Blooms Taxonomy]

C212.1	Interpret about non-ionizing radiation, interaction with tissue and its effects.
C212.2	Define and compare intensities of sensory stimuli
C212.3	Summarize how ionizing radiation interacts with the human body, how to quantify it and its levels seen in the environment and healthcare
C212.4	Explain the fundamentals of radioactivity and radioactive isotopes
C212.5	Illustrate the methods of detecting and recording the ionizing radiation and its interaction with matter

Course Code : C213

Course Name : 20BM403 Healthcare Data Analytics

After the completion of this course, students are able to [Blooms Taxonomy]

C213.1	Understand the basics of big data and its contribution towards health analytics.
C213.2	Analyze the use of medical text data for processing/retrieval of health information
C213.3	Determine the role of social media in health analytics and the need for data Warehousing
C213.4	Use R environment for analyzing healthcare data using Bayesian, Stochastic approach and Markov models.
C213.5	Illustrate the need for wireless health and quantified self -movement in health analytics.

Course Code : C214

Course Name : 20BM404 PATHOLOGY AND MICROBIOLOGY

After the completion of this course, students are able to [Blooms Taxonomy]

C214.1	Analyze structural and functional aspects of living organisms.
C214.2	Summarize the function of microscope
C214.3	Interpret the importance of public health.
C214.4	Compare the methods involved in treating the pathological diseases.
C214.5	Infer the immunology related concepts

Course Code : C215

Course Name : 20CS407 Data Structures Using OOPS

After the completion of this course, students are able to [Blooms Taxonomy]

C215.1	Understand the basics of C++.
C215.2	Illustrate the member function and classes,
C215.3	Summarize the inheritance and polymorphism.
C215.4	Identify the linear and non-linear data structures.
C215.5	Solve the sorting and searching problems.

Course Code : C216

Course Name : 20BM405 Pathology And Microbiology Laboratory

After the completion of this course, students are able to [Blooms Taxonomy]

C216.1	Explain the function of microscope.
C216.2	Perform different chemical examinations, Histopathological examinations,
C216.3	Perform practical experiments on tissue processing, cry processing, staining Processes etc
C216.4	Discover the growth of microorganism
C216.5	Identify Antigen-Antibody reaction

Course Code : C217

Course Name : 20MC401 Soft Skill

After the completion of this course, students are able to [Blooms Taxonomy]

C217.1	Relate the significance and fundamental nature of soft skills.
C217.2	Take part in a wide range of Public speaking and professional group discussions.
C217.3	Plan one's time effectively and productively, especially at work.
C217.4	Make use of leadership skills to manage stress & conflict.
C217.5	Organize presentation effectively and participate in interview with confidence.

Course Code : C301

Course Name : 20BM501 Biocontrol Systems

After the completion of this course, students are able to [Blooms Taxonomy]

C301.1	Understand the need for mathematical modeling of various systems, representation of systems in block diagrams and signal flow graphs and are introduced to biological control systems
C301.2	Analyze the time response of various systems and discuss the concept of system stability
C301.3	Analyze the frequency response characteristics of various systems using different charts
C301.4	Understand the concept of modeling basic physiological systems
C301.5	Comprehend the application aspects of time and frequency response analysis in physiological control systems.

Course Code : C302

Course Name : 20BM502 BIOMEDICAL INSTRUMENTATION

After the completion of this course, students are able to [Blooms Taxonomy]

C302.1	Comprehend the development of biomedical instrumentation and its application in medical field.
C302.2	Excel in measuring the blood pressure, cardiac output and heart sounds and to design small products related to this application.
C302.3	Conceive the basics of EEG and the concepts of measuring the brain activity
C302.4	Understand the basic principle, working and design of various automated diagnostic equipment related to ENT and ophthalmology.
C302.5	Ability to plan, design and implement an instrument for medical applications.

Course Code : C303

Course Name : 20BM503 Biosignal Processing

After the completion of this course, students are able to [Blooms Taxonomy]

C303.1	Apply DFT for the analysis of digital signals and systems
C303.2	Design IIR filters using Impulse invariance and bilinear transformation techniques.
C303.3	Design FIR filters using the windowing and sampling techniques
C303.4	Apply the wave detection techniques in ECG signals
C303.5	Analyze the PCG and EEG signals using adaptive segmentation technique

Course Code : C304

Course Name : 20BM504 Radiological Equipments

After the completion of this course, students are able to [Blooms Taxonomy]

C304.1	Describe the working principle of X ray machine and its application
C304.2	Illustrate the principle computed tomography
C304.3	Interpret the technique used for visualizing various sections of the body using magnetic resonance imaging
C304.4	Demonstrate the applications of radio nuclide imaging
C304.5	Outline the methods of radiation safety

Course Code : C305

Course Name : 20BM507 Biomedical Instrumentation Laboratory

After the completion of this course, students are able to [Blooms Taxonomy]

C305.1	Design preamplifiers and amplifiers for various bio signal recordings.
C305.2	Measure various non-electrical parameters using suitable sensors/transducers
C305.3	Record and measure Galvanic Skin Resistance, pH and Conductivity with necessary instruments.
C305.4	Record and measure Galvanic Skin Resistance, pH and Conductivity with necessary instruments
C305.5	Measure the lung volumes and lung capacities using spirometry.

Course Code : C306

Course Name : 20BM508 Biosignal Processing Laboratory

After the completion of this course, students are able to [Blooms Taxonomy]

C306.1	Perform basic signal processing operations using Open Source Software or MATLAB
C306.2	Perform convolution, DFT and FFT operations using Open Source Software MATLAB
C306.3	Design FIR and IIR filter for the specification derived from the given problem and simulate the frequency response.
C306.4	Perform event detection in EEG and ECG signals
C306.5	Apply PCA and ICA algorithm in the given biomedical signal

Course Code : C307

Course Name : 20BME02 Biometric Systems

After the completion of this course, students are able to [Blooms Taxonomy]

C307.1	Infer knowledge on biometric authentication system and applications of biometric systems
C307.2	Explain the functional description of fingerprint enhancement, feature extraction, classification and matching technique
C307.3	Discuss about various classifiers, algorithm, feature extraction of face and hand geometry recognition
C307.4	Describe about iris recognition
C307.5	Identify issues in the voice scan and multimodal biometrics

Course Code : C308

Course Name : 20BM601 Medical Regulatory Affairs and Ethics

After the completion of this course, students are able to [Blooms Taxonomy]

C308.1	Understand Medical Devices Regulatory Affairs and MDRA Basics
C308.2	Apply FDA / CDRH Functioning to Medical Device and invitro diagnostics
C308.3	Perform biocompatibility Studies on Medical Devices and Clinical Investigation of Medical Devices
C308.4	Understand General controls and Special Controls including Pre- market approval
C308.5	Know Law within medical practice and its issues in doctor– patient relationship

Course Code : C309

Course Name : 20BM602 Biomaterials and Artificial Organs

After the completion of this course, students are able to [Blooms Taxonomy]

C309.1	Understand and classify biomaterials based on their characteristics property
C309.2	Justify different metals and ceramics usage based on different application.
C309.3	Decide polymeric materials and its distinctive combinations that could be used as a tissue replacement implants
C309.4	Apply the knowledge in artificial organ using these materials
C309.5	Comprehend the knowledge about the need for artificial organs with its desired design consideration, organ replacement and steps required to evaluate the device.

Course Code : C310

Course Name : 20BM603 Biomechanics

After the completion of this course, students are able to [Blooms Taxonomy]

C310.1	Illustrate the ways in which the kinetic and kinematics quantities can be applied to study human movement
C310.2	Describe tissue injury in bone and cartilage using principle of mechanics
C310.3	Identify the viscoelastic properties of blood and analyze Newtonian and non-Newtonian fluids
C310.4	Derive the criteria for orthopedic implant design using complex mechanics of skeletal muscles
C310.5	Analyze the stresses and strains in shoulder, spine and hip using different loading conditions

Course Code : C311

Course Name : 20BM604 Diagnostic and Therapeutic Equipment's

After the completion of this course, students are able to [Blooms Taxonomy]

C311.1	Measure different bioelectrical signals using various methods
C311.2	Record the ECG, EEG and EMG signals using surface electrodes.
C311.3	Examine the electrical safety measurements
C311.4	Illustrate various diagnostic and therapeutic techniques.
C311.5	Analyze the different bio signals using suitable tools

Course Code : C312

Course Name : 20BM605 Mini Project

After the completion of this course, students are able to [Blooms Taxonomy]

C312.1	Formulate a real world problem, identify the requirement and develop the design solutions.
C312.2	Express the technical ideas, strategies and methodologies.
C312.3	Utilize the new tools, algorithms, techniques that contribute to obtain the solution of the project.
C312.4	Test and validate through conformance of the developed prototype and analysis the cost effectiveness.
C312.5	Prepare report and present the oral demonstrations.

Course Code : C313

Course Name : 20BME41 Rehabilitation Engineering

After the completion of this course, students are able to [Blooms Taxonomy]

C313.1	Understand need and concepts of rehabilitation engineering in general.
C313.2	Understand the concept of mobility and functioning of sensory augmentation.
C313.3	Identify the key components and design of universal accessibility.
C313.4	Analyse the design of orthotics and prosthetics of upper and lower extremities.
C313.5	Design manual and power wheelchair

Course Code : C401

Course Name : 20BM701 Hospital Management

After the completion of this course, students are able to [Blooms Taxonomy]

C401.1	Illustrate the ways in which the kinetic and kinematics quantities can be applied to study human movement
C401.2	Describe tissue injury in bone and cartilage using principle of mechanics
C401.3	Identify the viscoelastic properties of blood and analyze Newtonian and non-Newtonian fluids
C401.4	Derive the criteria for orthopedic implant design using complex mechanics of skeletal muscles
C401.5	Analyze the stresses and strains in shoulder, spine and hip using different loading conditions

Course Code : C402

Course Name : 20BM702 Medical Image Processing

After the completion of this course, students are able to [Blooms Taxonomy]

C402.1	Understand the fundamentals of image analysis and different Image formats
C402.2	Apply morphology techniques for binary images
C402.3	Explore Binary Large Object extraction and classification for cytometer images
C402.4	Demonstrate color images and its classification for a head CT image
C402.5	Illustrate Geometric Transformation, Image Registration and path tracing for medical images

Course Code : C403

Course Name : 20BM703 Neural Networks And Fuzzy Logic

After the completion of this course, students are able to [Blooms Taxonomy]

C403.1	Demonstrate an Understand of the basic concepts and principles of neural computation as an approach to intelligent problem solving
C403.2	Illustrate the commonly used neural network architectures and learning algorithms
C403.3	Distinguish classes of problems solving including Vagueness problem
C403.4	Explore Fuzzy Logic and its solutions to complex control methods
C403.5	Design a neural network and Fuzzy Logic to solve a particular problem

Course Code : C404

Course Name : 20BM704 Biomedical Image Analysis Laboratory

After the completion of this course, students are able to [Blooms Taxonomy]

C404.1	Study the DICOM and NIFTI-1 data formats
C404.2	Interpret the display a medical image stored in a file
C404.3	Experiment Basic medical image segmentation and its Image Analysis
C404.4	Explore Medical Image Classification, Registration and Fusion concepts
C404.5	Case Study on some recent advances in analysis of medical images

Course Code : C405

Course Name : 20BM706 Design Project

After the completion of this course, students are able to [Blooms Taxonomy]

C405.1	Understanding about design and its evolution throughout history
C405.2	Identify and incorporate appropriate engineering standards in design
C405.3	Identify the usage new tools, algorithms, techniques that contribute to obtain the solution of the project
C405.4	Test and validate through conformance of the designed model or part and analysis the cost effectiveness
C405.5	Prepare technical report and oral presentations

Course Code : C406

Course Name : 20BME22 Robotics in Medicine

After the completion of this course, students are able to [Blooms Taxonomy]

C406.1	Understand the necessity of robots in various applications and the working of basic electric, electronic and other types of drives required in robots.
C406.2	Identify a suitable sensor for a specific robot.
C406.3	Derive the mathematical model of robotic systems and analyze its kinematic behavior.
C406.4	Design robots for diverse environments encompassing all types of motions and paths and the ideas for performing various robotic tasks with the application of programming skills.
C406.5	Design of different types of robots for various applications.

Course Code : C407

Course Name : 20BME24 Hospital Information System

After the completion of this course, students are able to [Blooms Taxonomy]

C407.1	Discuss the relationship between health care data and health care information
C407.2	Discuss how accreditation, facility licensure, and certification influence the information needs of health care facilities
C407.3	Identify the major types of administrative and clinical information systems used in health care
C407.4	Discuss emerging trends in information technology (such as mobility, Web services, Internet, wireless).
C407.5	Describe the roles, responsibilities, and major functions of the IT department or organization

Course Code : C408

Course Name : 20BME52 Medical Optics

After the completion of this course, students are able to [Blooms Taxonomy]

C408.1	Explain the basic properties of light source
C408.2	Demonstrate knowledge of the fundamentals of optical properties of tissues
C408.3	Describe surgical applications of laser
C408.4	Describe photonics and its therapeutic applications
C408.5	Apply the concepts of laser and light to understand the laser safety procedures

Course Code : C409

Course Name : 20BME21 Human Assist Devices

After the completion of this course, students are able to [Blooms Taxonomy]

C409.1	Interpret the various mechanical techniques that will help in assisting the heart functions
C409.2	Explain the working principles and parameters of the dialysis unit
C409.3	Indicate the methodologies to assess the hearing loss
C409.4	Infer the various orthotic devices and prosthetic devices to overcome orthopedic problems
C409.5	Discuss the sensory impairments and its substitutions

Course Code : C410

Course Name : 20BM801 Major Project

After the completion of this course, students are able to [Blooms Taxonomy]

C410.1	Review the literature and develop solutions for framed problem statement and use idea in mini project for major project
C410.2	Implement hardware and/or software techniques for identified problems
C410.3	Test and analyze the modules of planned project
C410.4	Write technical report and deliver presentation
C410.5	Apply engineering and management principles to achieve project goal