EXCEL ENGINEERING COLLEGE, KOMARAPALAYAM
DEPARTMENT OF BIOMEDICAL ENGINEERING
COURSE OUTCOMES
ANNA UNIVERSITY R 2017

Course Code : **C101**
Course Name : **HS8151 Communicative English**

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

C101.1	Read and understand articles of a general kind in magazines and newspapers.
C101.2	Participate effectively in Formal and informal conversations; introduce themselves and their friends and express opinions in English
C101.3	Comprehend conversations and short talks delivered in English
C101.4	Write short essays of a general kind and personal letters and emails in English.
C101.5	Speak in informal group activities

Course Code : **C102**
Course Name : **MA8151 Engineering Mathematics - I**

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

C102.1	Use both the limit definition and rules of differentiation to differentiate functions.
C102.2	Apply the functions of several variables in engineering field.
C102.3	Evaluate integrals using techniques of integration, such as substitution, partial fractions and integration by parts.
C102.4	Apply integration to compute multiple integrals, area, volume, integrals in polar coordinates, in addition to change of order and change of variables.
C102.5	Apply various techniques in solving differential equations

Course Code : **C103**
Course Name : **PH8151 Engineering Physics**

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

C103.1	Gain knowledge on the basics of properties of matter and its applications,
C103.2	Acquire knowledge on the concepts of waves and optical devices and their applications in fibre optics
C103.3	Adequate knowledge on the concepts of thermal properties of materials and their applications in expansion joints and heat exchangers,.
C103.4	Get knowledge on advanced physics concepts of quantum theory and its applications in tunneling microscopesAcquaint with Ultrasonics and its application in NDT .
C103.5	Understand the basics of crystals, their structures and different crystal growth techniques.

Course Code   **:**   **C104**

Course Name   **:**   **CY8151 Engineering Chemistry**

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

C104.1	Understanding polymerisation and some important industrial polymers.
C104.2	Learn Thermodynamic properties and their inter relationship.
C104.3	Acquaint With UV and IR Spectral analysis.
C104.4	Know The Principle Of cooling curves and alloys.
C104.5	Acquire Knowledge of Nano and micro struture materials.

Course Code   **:**   **C105**

Course Name   **:**   **GE8151 Problem Solving and Python Programming**

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

C105.1	Apply algorithm, pseudo code and flow chart for problem solving.
C105.2	Write simple Python programs.
C105.3	Develop Python programs with various programming constructs and functions.
C105.4	Implement lists, tuples and dictionaries in various applications.
C105.5	Use of files and file operations efficiently

Course Code   **:**   **C106**

Course Name   **:**   **GE8152 Engineering Graphics**

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

C106.1	Illustrate free hand sketching of plane curves, visualization concepts and multiple views of objects
C106.2	Create orthographic projection of points, lines and plane surfaces
C106.3	Develop projection of a simple geometrical solids
C106.4	Compose Projection of sectioned solids and development of surface
C106.5	Imagine isometric and perspective views of simple solids

Course Code   **:**   **C107**

Course Name   **:**   **GE8161 Problem Solving and Python Programming Laboratory**

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

C107.1	Write, test, and debug simple Python programs.
C107.2	Implement Python programs with suitable language constructs.
C107.3	Use functions effectively for structuring Python programs.
C107.4	Apply suitable data structures in various applications
C107.5	Develop python applications using files

Course Code : **C108**

Course Name : **BS8161 Physics and Chemistry Laboratory**

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

C108.1	Analyze the mechanical properties and thermal properties of materials.
C108.2	Acquire the practical knowledge about band gap of a semiconductor and in optics such as Interference & Diffraction
C108.3	Gaining the knowledge of electrochemical redox reaction
C108.4	Apply knowledge of measurement of hardness producing ions, alkalinity, conductance, EMF
C108.5	Understand the impact of water quality and to solve engineering problems

Course Code : **C109**

Course Name : **HS8251 Technical English**

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

C109.1	Read technical texts and write area- specific texts effortlessly
C109.2	Listen and comprehend lectures and talks in their area of specialisation successfully
C109.3	Speak appropriately and effectively in varied formal and informal contexts
C109.4	Write reports and winning job applications
C109.5	Perform better in interview through various softskills

Course Code : **C110**

Course Name : **MA8251 Engineering Mathematics - II**

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

C110.1	Understand the use of matrix algebra techniques that is needed by engineers for practical applications.
C110.2	Apply the concept of vector calculus in Engineering disciplines
C110.3	Analysis the real integrals by applying concept of complex integration.
C110.4	Comprehend different spoken excerpts critically and infer unspoken and implied meanings.
C110.5	Understand the knowledge of Laplace Transforms in solving Ordinary Differential Equations.

Course Code : **C111**

Course Name : **PH8253 Physics for Electronics Engineering**

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

C111.1	Gain knowledge on classical and quantum electron theories, and energy band structures
C111.2	Acquire knowledge on basics of semiconductor physics and its applications in various devices
C111.3	Get knowledge on magnetic and dielectric properties of materials
C111.4	Have the necessary understanding on the functioning of optical materials for optoelectronics
C111.5	Understand the basics of quantum structures and their applications in spintronics and carbon electronics

Course Code **:** **C112**
Course Name **:** **BM8251 Engineering Mechanics for Biomedical Engineers**

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

C112.1	Illustrate the vectorial and scalar representation of forces and moments.
C112.2	Analyze the rigid body in equilibrium
C112.3	Evaluate the properties of surface and solids
C112.4	Calculating dynamic forces exerted in rigid body
C112.5	Determine the friction and the effects by the laws of friction

Course Code **:** **C113**

Course Name **:** **BM8201 Fundamentals of Bio Chemistry**

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

C113.1	Explain the Chemical bonds and its application
C113.2	Classify the Metabolic activity of Carbohydrates
C113.3	Understand the basics of Protein Metabolism
C113.4	Compare fatty acid metabolism and nucleic acid metabolism
C113.5	Classify the bio energetic and high energy compounds

Course Code **:** **C114**
Course Name **:** **EC8251 Circuit Analysis**

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

C114.1	Introduce the basic concepts of DC and AC circuits behavior
C114.2	Study the transient and steady state response of the circuits subjected to step and sinusoidal excitations.
C114.3	Introduce different methods of circuit analysis using Network theorems, duality and topology.
C114.4	Understand the significance of time constants in determining the speed of transient responses.
C114.5	Understand the concept of network matrices for two-port networks.

Course Code **:** **C115**
Course Name **:** **GE8261 Engineering Practices Laboratory**

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

C115.1	Illustrate the basic wiring connection of electrical components
C115.2	Measure the electrical quantities of circuits
C115.3	Recall and Apply the basics of electronic principles to the circuits
C115.4	Develop the fabrication of electronic circuits to improve their knowledge.
C115.5	Analyze the circuit for application oriented.

Course Code : **C116**
Course Name : **BM8211 Bio Chemistry Laboratory**
After the completion of this course, students are able to [Blooms Taxonomy]

C116.1	Get knowledge on the PH and buffer solution preparation
C116.2	Have adequate knowledge on qualitative analysis of bio molecules
C116.3	Gain knowledge on the estimation of biomolecules
C116.4	Acquire knowledge on collections of blood .
C116.5	Get sufficient knowledge on the concept of SDS electrophoresis

Course Code : **C201**
Course Name : **MA8352 LINEAR ALGEBRA AND PARTIAL DIFFERENTIAL EQUATIONS**
After the completion of this course, students are able to [Blooms Taxonomy]

C201.1	Explain the fundamental concepts of advanced algebra and their role in modern mathematics and applied contexts.
C201.2	Demonstrate accurate and efficient use of advanced algebraic techniques.
C201.3	Demonstrate their mastery by solving non - trivial problems related to the concepts and by proving simple theorems about the statements proven by the text.
C201.4	Able to solve various types of partial differential equations.
C201.5	Able to solve engineering problems using Fourier series

Course Code : **C202**
Course Name : **EC8352 SIGNALS AND SYSTEMS**
After the completion of this course, students are able to [Blooms Taxonomy]

C202.1	Understand the basic properties of signal & systems
C202.2	Know the methods of characterization of LTI systems in time domain
C202.3	Analyze continuous time signals and system in the Fourier and Laplace domain
C202.4	Analyze discrete time signals and system in the Fourier and Z transform domain
C202.5	Analyze Linear time invariant system in the discrete time system

Course Code : **C203**
Course Name : **BM8351 ANATOMY AND HUMAN PHYSIOLOGY**
After the completion of this course, students are able to [Blooms Taxonomy]

C203.1	Describe basic structural and functional elements of human body
C203.2	Explain gaseous exchange and fluid maintenance in the human body.
C203.3	Enlighten organs and structures involving in system formation and functions.
C203.4	Identify all systems in the human body.
C203.5	Elucidate special senses in the human body.

Course Code   **:**   **C204**
Course Name   **:**   **BM8301 SENSORS AND MEASUREMENTS**

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

C204.1	Describe the purpose and methods of measurements.
C204.2	Explain the principle of different sensors and its applications.
C204.3	Analyze the characteristics of different transducers.
C204.4	Describe the need and function of various signal conditioning circuits.
C204.5	Explain different display and recording devices for various applications.

Course Code   **:**   **C205**
Course Name   **:**   **EC8353 ELECTRON DEVICES AND CIRCUITS**

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

C205.1	Explain the structure and working operation of basic electronic devices.
C205.2	Able to identify and differentiate both active and passive elements
C205.3	Analyze the characteristics of different electronic devices such as diodes and transistors
C205.4	Choose and adapt the required components to construct an amplifier circuit.
C205.5	Employ the acquired knowledge in design and analysis of oscillators

Course Code   **:**   **C206**
Course Name   **:**   **BM8302 PATHOLOGY AND MICROBIOLOGY**

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

C206.1	Analyze structural and functional aspects of living organisms.
C206.2	Explain the function of microscopes.
C206.3	Discuss on the importance of public health.
C206.4	Describe treatment methods involved in curing the pathological diseases.
C206.5	Perform practical experiments on tissue processing, sterilization techniques and staining processes.

Course Code   **:**   **C207**
Course Name   **:**   **BM8311 PATHOLOGY AND MICROBIOLOGY LABORATORY**

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

C207.1	Analyze structural and functional aspects of living organisms
C207.2	Summarize the function of microscope
C207.3	Interpret the importance of public health
C207.4	Compare the methods involved in treating the pathological diseases
C207.5	Infer the immunology related concepts

Course Code : **C208**
Course Name : **BM8312 DEVICES AND CIRCUITS LABORATORY**

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

C208.1	Design RL and RC circuits
C208.2	Verify Thevenin & Norton theorem KVL & KCL, and Super Position Theorems
C208.3	Draw the characteristics of series and parallel resonance circuits.
C208.4	Discuss the characteristics of basic electronic devices.
C208.5	Describe the characteristics of Amplifiers

Course Code : **C209**
Course Name : **BM8313 HUMAN PHYSIOLOGY LABORATORY**

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

C209.1	Use basic laboratory skills and apparatus to obtain reproducible data from biochemical experiments.
C209.2	Separate and analyze the importance of macromolecules.
C209.3	Discuss the various blood parameters in pathological conditions.
C209.4	Analyze, interpret and report the results of the laboratory experiments.
C209.5	Implement experimental protocols and adopt to plan and carry out simple investigations.

Course Code : **C210**
Course Name : **MA8391 PROBABILITY AND STATISTICS**

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

C210.1	Understand the fundamental knowledge of the concepts of probability and have knowledge of standard distributions which can describe real life phenomenon.
C210.2	Understand the basic concepts of one and two dimensional random variables and apply in engineering applications.
C210.3	Apply the concept of testing of hypothesis for small and large samples in real life problems.
C210.4	Apply the basic concepts of classifications of design of experiments in the field of agriculture and statistical quality control
C210.5	Have the notion of sampling distributions and statistical techniques used in engineering and management problems.

Course Code : **C211**

Course Name : **BM8401 MEDICAL PHYSICS**

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

C211.1	Explain about non-ionizing radiation, interaction with tissue and its effects.
C211.2	Define and compare intensities of sensory stimuli
C211.3	Summarizes how ionizing radiation interacts with the human body, how to quantify it and its levels seen in the environment and healthcare
C211.4	Explain the fundamentals of radioactivity and radioactive isotopes
C211.5	Illustrates the methods of detecting and recording the ionizing radiation and its interaction with matter

Course Code : **C212**

Course Name : **EE8452 BASICS OF ELECTRICAL ENGINEERING**

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

C212.1	Uunderstand the concepts related with electrical circuits and wiring.
C212.2	Design simple electrical circuits and understand through nodal, mesh analysis about constructing series and parallel configuration of circuits with sources and variable loads.
C212.3	Get knowledge on electrical machines and on its efficient operating principle.
C212.4	Understand metering principles, safety measures while working with electrical circuits.
C212.5	Analyse existing power distribution and hence apply technology in electrical applications

Course Code : **C213**

Course Name : **EC8453 LINEAR INTEGRATED CIRCUITS**

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

C213.1	Design linear and non linear applications of OP – AMPS
C213.2	Design applications using analog multiplier and PLL
C213.3	Design ADC and DAC using OP – AMPS
C213.4	Generate waveforms using OP – AMP Circuits
C213.5	Analyze special function Ics

Course Code : **C214**

Course Name : **EC8393 FUNDAMENTALS OF DATA STRUCTURES IN C**

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

C214.1	Implement linear and non-linear data structure operations using C
C214.2	Suggest appropriate linear / non-linear data structure for any given data set.
C214.3	Apply hashing concepts for a given problem
C214.4	Modify or suggest new data structure for an application
C214.5	Appropriately choose the sorting algorithm for an application

Course Code : **C215**

Course Name : **EC8392 DIGITAL ELECTRONICS**

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

C215.1	Use digital electronics in the present contemporary world
C215.2	Design various combinational digital circuits using logic gates
C215.3	Do the analysis and design procedures for synchronous and asynchronous sequential circuits
C215.4	Use the semiconductor memories and related technology
C215.5	Use electronic circuits involved in the design of logic gates

Course Code : **C216**

Course Name : **EC8381 FUNDAMENTALS OF DATA STRUCTURES IN C LABORATORY**

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

C216.1	Implement linear and non-linear data structure operations using C
C216.2	Suggest appropriate linear / non-linear data structure for any given data set.
C216.3	Apply hashing concepts for a given problem
C216.4	Modify or suggest new data structure for an application
C216.5	Appropriately choose the sorting algorithm for an application

Course Code : **C217**

Course Name : **BM8411 INTEGRATED CIRCUITS LABORATORY**

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

C217.1	Design oscillators and amplifiers using operational amplifiers.
C217.2	Design filters using Opamp and perform experiment on frequency response.
C217.3	Analyse the working of PLL and use PLL as frequency multiplier.
C217.4	Design DC power supply using ICs.
C217.5	Aquire knowledge in using SPICE

Course Code : **C301**

Course Name : **EC8394 ANALOG AND DIGITAL COMMUNICATION**

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

C301.1	Apply analog and digital communication techniques.
C301.2	Use data and pulse communication techniques
C301.3	Know digital communication techniques
C301.4	Analyze Source and Error control coding
C301.5	Utilize multi-user radio communication.

Course Code : C302
Course Name :   BM8501 BIOCONTROL SYSTEMS

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

C302.1	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
C302.2	Analyze the time response of various systems and discuss the concept of system stability
C302.3	Analyze the frequency response characteristics of various systems using different charts
C302.4	Understand the concept of modeling basic physiological systems
C302.5	Comprehend the application aspects of time and frequency response analysis in physiological control systems.

Course Code : C303
Course Name :   BM8502 BIOMEDICAL INSTRUMENTATION

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

C303.1	Differentiate different bio potentials and its propagations.
C303.2	Illustrate different electrode placement for various physiological recordings
C303.3	Design bio amplifier for various physiological recordings
C303.4	Explain various technique for non-electrical physiogical measurements
C303.5	Demonstrate different biochemical measurement techniques.

Course Code : C304
Course Name :   EC8553 DISCRETE-TIME SIGNAL PROCESSING

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

C304.1	Apply DFT for the analysis of digital signals and systems
C304.2	Design IIR and FIR filters
C304.3	Characterize the effects of finite precision representation on digital filters
C304.4	Design multirate filters
C304.5	Apply adaptive filters appropriately in communication systems

Course Code : C305
Course Name :   GE8077 TOTAL QUALITY MANAGEMENT

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

C305.1	Explain about principles of Quality Management
C305.2	Apply the Quality management principles
C305.3	Summarizes Quality management tools with Technique I
C305.4	Explain the Quality management tools with Technique II
C305.5	Illustrates the Quality management system

Course Code   **:**   **C306**

Course Name   **:**   **OBT552 BASICS OF BIOINFORMATICS**

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

C306.1	Describe various bioinformatics resources and classify biological databases and their file formats
C306.2	Construct sequence alignment, analyze and interpret the data
C306.3	Perform phylogenetic analysis and interpret the data
C306.4	Perform sequence analysis, restriction site mapping, primer designing and visualization of protein structures
C306.5	Comprehend and apply the in-silico tools towards drug discovery

Course Code   **:**   **C307**

Course Name   **:**   **EC8562 DIGITAL SIGNAL PROCESSING LABORATORY**

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

C307.1	Carryout basic signal processing operations
C307.2	Demonstrate their abilities towards MATLAB based implementation of various DSP systems
C307.3	Analyze the architecture of a DSP Processor
C307.4	Design and Implement the FIR and IIR Filters in DSP Processor for performing filtering operation over real-time signals
C307.5	Design a DSP system for various applications of DSP

Course Code   **:**   **C308**

Course Name   **:**   **BM8511 BIO MEDICAL INSTRUMENTATION LABORATORY**

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

C308.1	Design the amplifiers for various bio signal recordings.
C308.2	Measure the various non-electrical parameters using suitable sensors/transducers
C308.3	Design multiplexer and demultiplexer for for bio signals
C308.4	Anayze the data from pulse rate and blood pressure ment
C308.5	Design PCB layout for any bio amplifier.

Course Code   **:**   **C309**

Course Name   **:**   **HS8381 INTERPERSONAL SKILLS/LISTENING&SPEAKING**

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

C309.1	Listen and respond appropriately
C309.2	Listen and speak clearly
C309.3	Make effective presentations
C309.4	Participate in group discussions
C309.5	Participate confidently and appropriately in conversations both formal and informal

Course Code : **C310**
Course Name : **EC8691 MICROPROCESSORS AND MICROCONTROLLERS**

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

C310.1	Identify the system design concepts of 8086 microprocessor.
C310.2	Understand and execute programs based on 8086 microprocessor
C310.3	Design and interface I/O circuits.
C310.4	Design and implement 8051 microcontroller based systems.
C310.5	Design Memory Interfacing circuits.

Course Code : **C311**
Course Name : **BM8601 DIAGNOSTIC AND THERAPEUTIC EQUIPMENT- I**

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

C311.1	Describe the working and recording setup of all basic cardiac equipment.
C311.2	Understand the working and recording of all basic neurological equipment's.
C311.3	Discuss the recording of diagnostic and therapeutic equipment's related to EMG.
C311.4	Explain about measurements of parameters related to respiratory system.
C311.5	Describe the measurement techniques of sensory responses.

Course Code : **C312**
Course Name : BM8651 **BIOMECHANICS**

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

C312.1	Understand the principles of mechanics
C312.2	Outline the principles of biofluid dynamics.
C312.3	Explain the fundamentals of bio-solid mechanics.
C312.4	Apply the knowledge of joint mechanics.
C312.5	Give Examples of computational mathematical modelling applied in biomechanics.

Course Code : **C313**
Course Name : **GE8291 ENVIRONMENTAL SCIENCE AND ENGINEERING**

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

C313.1	Explain the natural and facts of the environment.
C313.2	Understand the concept of Environmental pollution
C313.3	List the various natural resources
C313.4	Development and improvement in std. of living has lead to serious environmental disasters
C313.5	explore the Public awareness of environmental is at infant stage.

Course Code **:** **C314**

Course Name **:** **MD8091 HOSPITAL MANAGEMENT**

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

C314.1	Explain the principles of Hospital administration.
C314.2	Identify the importance of Human resource management.
C314.3	List various marketing research techniques
C314.4	Identify Information management systems and its uses.
C314.5	Understand safety procedures followed in hospitals.

Course Code **:** **C315**

Course Name **:** **MD8071 TELEHEALTH TECHNOLOGY**

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

C315.1	Explain the history and concept of telemedicine
C315.2	Describe the different communication modes of telemedicine
C315.3	Discuss the Ethical And Legal Aspects of Telemedicine
C315.4	Explain the PACS and DICOM
C315.5	Apply telehealth in healthcare

Course Code **:** **C316**

Course Name **:** **EC8681 MICROPROCESSORS AND MICROCONTROLLERS LABORATORY**

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

C316.1	Write ALP Programmes for fixed and Floating Point and Arithmetic operations
C316.2	Interface different I/Os with processor
C316.3	Generate waveforms using Microprocessors
C316.4	Execute Programs in 8051
C316.5	Explain the difference between simulator and Emulator

Course Code **:** **C317**

Course Name **:** **BM8611 Diagnostic And Therapeutic Equipment Laboratory**

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

C317.1	Measure different bioelectrical signals using various methods
C317.2	Assess different non-electrical parameters using various methodologies
C317.3	Illustrate various diagnostic and therapeutic techniques
C317.4	Examine the electrical safety measurements
C317.5	Analyze the different bio signals using suitable tools.

Course Code : **C318**
Course Name : **BM8612 Mini Project**

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

C318.1	Formulate a real world problem, identify the requirement and develop the design solutions.
C318.2	Express the technical ideas, strategies and methodologies.
C318.3	Utilize the new tools, algorithms, techniques that contribute to obtain the solution of the project.
C318.4	Test and validate through conformance of the developed prototype and analysis the cost effectiveness.
C318.5	Prepare report and present the oral demonstrations.

Course Code : **C319**
Course Name : **HS8581 Professional Communication**

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

C319.1	Develop adequate Soft Skills required for the workplace
C319.2	Make effective presentations
C319.3	Participate confidently in Group Discussions.
C319.4	Attend job interviews and be successful in them.
C319.5	Recognize difference between group and team

Course Code : **C401**
Course Name : **BM8701 Diagnostic And Therapeutic Equipment – Ii**

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

C401.1	Discuss the various equipment used in ICU and applications of telemetry.
C401.2	Explain the types of diathermy and its applications.
C401.3	Express the basics of ultrasound and its application in medicine
C401.4	Discuss the various extracorporeal and special diagnostic devices used in hospitals
C401.5	Outline the importance of patient safety against electrical hazard

Course Code : **C402**
Course Name : **EC8093 Digital Image Processing**

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

C402.1	Intrepret the basics and fundamentals of digital image processing
C402.2	Apply on images using the techniques of smoothing, sharpening and enhancement.
C402.3	Apply the simple image restoration concepts and filtering techniques.
C402.4	Apply the image segmentation and features extraction
C402.5	Explain the compression and recognition methods for color models

Course Code   :   C403
Course Name   :   BM8702 Radiological Equipments

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

C403.1	Describe the working principle of X ray machine and its application.
C403.2	Illustrate the principle computed tomography.
C403.3	Interpret the technique used for visualizing various sections of the body using magnetic resonance imaging
C403.4	Demonstrate the applications of radio nuclide imaging.
C403.5	Outline the methods of radiation safety.

Course Code   :   C404
Course Name   :   BM8703 Rehabilitation Engineering

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

C404.1	Intrepret the needs of rehabilitations and its future development.
C404.2	Have an in depth idea about Engineering Concepts in Sensory & Motor rehabilitation.
C404.3	Apply the different types of Therapeutic Exercise Technique to benefit the society.
C404.4	Design and apply different types Hearing aids, visual aids and their application in biomedical field
C404.5	Gain in-depth knowledge about different types of models of Hand and arm replacement.

Course Code   :   C405
Course Name   :   CS8081 Internet Of Things

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

C405.1	Explain the concept of IoT.
C405.2	Analyze various protocols for IoT.
C405.3	Design a PoC of an IoT system using Rasperry Pi/Arduino
C405.4	Apply data analytics and use cloud offerings related to IoT.
C405.5	Analyze applications of IoT in real time scenario

Course Code   :   C406
Course Name   :   OPY752 Regulatory Requirements in Pharmaceutical Industries

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

C406.1	Familiarise with the pharmaceutical industry manufacturing practices
C406.2	Explain the regulatory aspects of pharmacy products
C406.3	know the process of patenting activities
C406.4	know the quality guidelines followed for pharmaceutical products
C406.5	Show the aspects involved in document preparation for pharmaceutical product registration.

Course Code : **C407**
Course Name : **EC8762 Digital Image Processing Laboratory**

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

C407.1	Perform enhancing operations on the image using spatial filters and frequency domain filters.
C407.2	Use transforms and analyse the characteristics of the image.
C407.3	Perform segmentation operations in the images
C407.4	Estimate theefficiency of the compression technique on the images.
C407.5	Apply image processing technique to solve real health care problems.

Course Code : **C408**
Course Name : **MD8751 Hospital Training**

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

C408.1	Advocate a patient-centred approach in healthcare
C408.2	Communicate with other health professionals in a respectful and responsible manner
C408.3	Recognize the importance of inter-professional collaboration in healthcare.
C408.4	Propose a patient-centred inter-professional health improvement plan based upon the patient's perceived needs
C408.5	Use the knowledge of one's own role and those of other professions to address the healthcare needs of populations and patients served.

Course Code : **C409**
Course Name : **BM8077 Hospital Waste Management**

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

C409.1	Analyse various hazards, accidents and its control
C409.2	Design waste disposal procedures for different biowastes
C409.3	Categorise different biowastes based on its properties
C409.4	Design different safety facility in hospitals
C409.5	Propose various regulations and safety norms

Course Code **:** **C410**
Course Name **:** **BM8006 Ergonomics**

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

C410.1	Understand the principles of mechanics
C410.2	Outline the principles of biofluid dynamics
C410.3	Explain the fundamentals of bio-solid mechanics
C410.4	Apply the knowledge of joint mechanics
C410.5	Give Examples of computational mathematical modelling applied in biomechanics.

Course Code **:** **C411**
Course Name **:** **BM8811 Project Work**

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

C411.1	Review the literature and develop solutions for framed problem statement and use idea in mini project for major project.
C411.2	Implement hardware and/or software techniques for identified problems.
C411.3	Test and analyze the modules of planned project.
C411.4	Write technical report and deliver presentation
C411.5	Apply engineering and management principles to achieve project goal.