

T.Y.B.Tech (Electronics and Computer Engineering) SEM-V		
<u>Course Code And Title</u>		<u>Course Outcomes</u>
Computer Network and Cloud Computing (BTECPC501)	CO1	Analyze the requirements for a given organizational structure and select the most appropriate networking architecture and technologies
	CO2	Specify and identify deficiencies in existing protocols, and then go onto select new and better protocols.
	CO3	Have a basic knowledge of installing and configuring networking applications
	CO4	Understand the different cloud computing environments
	CO5	Apply concepts of virtualization and various cloud services to design, develop and deploying cloud applications.
Digital Signal & Image Processing (BTECPC502)	CO1	Understand mathematical description and representation of various signals and systems.
	CO2	Understand use of different transforms and analyze the discrete time signals and systems.
	CO3	To implement fundamental image processing techniques required for computer vision
	CO4	Understand Image formation process
	CO5	.To perform morphological operations on image.
	CO1	Classify various robot essential transducers and explain their working principles with

Sensors and Robotics Technology (BTECPC503A)		examples.
	CO2	.Predict the expected performance of various sensors
	CO3	Familiar with the history, concept development and key components of robotics technologies.
	CO4	Implement basic mathematics manipulations of spatial coordinate representation and transformation.
	CO5	Calculate Gripping Force required for object manipulation by various robotic end effectors
Data Warehouse & Data Mining (BTECPC503B)	CO1	Apply basic, intermediate and advanced techniques to mine the data.
	CO2	Analyze the output generated by the process of data mining.
	CO3	To solve software testing problems by designing and selecting software test models,criteria, strategies and methods.
	CO4	To apply the techniques learned to improve the quality of software development.
	CO5	To prepare a software quality plan for a software project.
Wireless and Mobile Computing (BTECPC503C)	CO1	To identify basic concepts and principles in computing, cellular architecture.
	CO2	To describe the components and functioning of mobile networking.
	CO3	To classify variety of security techniques in mobile network.
	CO4	To apply the concepts of WLAN for local as well as remote applications.

	CO5	To describe Long Term Evolution (LTE) architecture and its interfaces.
Software Engineering (BTECPC503D)	CO1	Decompose the given project in various phases of a lifecycle.
	CO2	Choose appropriate process model depending on the user requirements.
	CO3	Perform various life cycle activities like Analysis, Design, Implementation, Testing and Maintenance.
	CO4	Know various processes used in all the phases of the product.
	CO5	Apply the knowledge, techniques, and skills in the development of a software product.
Microelectronics Devices and Circuits (BTECPC504A)	CO1	Identify the energy band structures of different materials such as conductors, insulators, and semiconductors.
	CO2	Interpret basic semiconductor concepts such as transport phenomena.
	CO3	Identify pn junction diodes and its physical structure
	CO4	Formulate diode equation, relate the equation to the device physics, and identify diode circuits and different diodes such as photodiodes and LEDs.
	CO5	Identify bipolar junction transistor (BJT) and metal oxide semiconductor field effect transistors (MOSFET)
Analog & Digital	CO1	Tell difference between analog & Digital communication system.
	CO2	Choose specific modulation technique as per system requirement.

Communication (BTECPC504B)	CO3	Analyze various analog & digital signal with different techniques.
	CO4	Apply various operation on communication signals.
	CO5	Differentiate between various digital modulation & Demodulation techniques.
Programming in Java (BTECPC504C)	CO1	Understand the basic principles of Java programming language
	CO2	Apply the concepts of classes and objects to write programs in Java
	CO3	Demonstrate the concepts of Interfaces & Inheritance
	CO4	Understand multithreading and Exception handling in Java to develop robust programs
	CO5	Apply the concepts of Graphics and JDBC for project development
Electrical Machines & Instrumentation (BTECPC504D)	CO1	The ability to analyze the working of any electrical machine using mathematical equations & characteristics to check on with & without load.
	CO2	The skill to analyze the response and performance of any electrical machine.
	CO3	The ability to troubleshoot the operation of an electrical machine, instruments & sensors for a given application.
	CO4	The ability to estimate and correct deviations in measurements due to the influence of the instrument and due to the accuracy of the instrument & sensors.
	CO1	Study of Market Equilibrium

Economics and Management (BTECPC505A)	CO2	Understand Relevant Information and Decision Making
	CO3	Aware Financial Statements
	CO4	Study of Depreciation Accounting
	CO5	Understand Product Development
Business Communication (BTECPC505B)	CO1	Study of business
	CO2	Understand Intercultural Communication
	CO3	Aware Barriers to Communication
	CO4	Study of Interpersonal Communication
	CO5	Understand Negotiation and Conflict Management

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<u>Course Code And Title</u>		<u>Course Outcomes</u>
Artificial Intelligence and Machine Learning (BTECPC602)	CO1	Discuss Meaning, Scope and Stages of Artificial Intelligence
	CO2	Develop a good understanding of fundamental principles of machine learning
	CO3	Formulation of a Machine Learning problem

	CO4	Develop a model using supervised/unsupervised machine learning algorithms for classification/prediction/clustering
	CO5	Evaluate performance of various machine learning algorithms on various data sets of a domain.
Industrial Automation & Control (BTECPC603A)	CO1	Learn and apply essential concepts behind control system elements and operations in hydraulics and pneumatics automation
	CO2	Develop the PLC Program for given Application
	CO3	Develop skills in handling the different controllers.
	CO4	To understand the working of electrical, hydraulic, pneumatic, mechanical, PLC, drives
	CO5	Explain fundamentals of sensorics technology and modular mechatronics along with robot technology
Big Data Analytics (BTECPC603B)	CO1	Identify Big Data and its Business Implications.
	CO2	List the components of Hadoop and Hadoop Eco-System
	CO3	Access and Process Data on Distributed File System
	CO4	Develop Big Data Solutions using Hadoop Eco System
	CO5	Use Big data Framework, security and governance.
	CO1	Formulate the wave equation in wave guide for analysis.
	CO2	Identify the use of microwave components and devices in microwave applications.

Microwave and Optical Fiber Communication (BTECPC603C)	CO3	Understand the working principles of all the microwave tubes.
	CO4	Understand the principles fiber-optic communication, the components and the bandwidth advantages.
	CO5	Understand the properties of the optical fibers and optical components
	CO6	Understand operation of lasers, LEDs, and detectors.
Software Testing (BTECPC603D)	CO1	To apply software testing knowledge and its processes to software applications.
	CO2	To identify various software testing problems
	CO3	To solve software testing problems by designing and selecting software test models, criteria, strategies and methods.
	CO4	To apply the techniques learned to improve the quality of software development.
	CO5	To prepare a software quality plan for a software project.
VLSI Design (BTECPC604A)	CO1	Acquire qualitative knowledge about the fabrication process of integrated circuits using MOS transistors.
	CO2	Draw the layout of any logic circuit which helps to understand and estimate parasitic effect of any logic circuit
	CO3	Design building blocks of data path systems, memories and simple logic circuits using PLA, PAL, FPGA and CPLD.
	CO4	Implement and design of building blocks of data path and array sub systems.

	CO5	Understand different types of faults that can occur in a system and learn the concept of testing and adding extra hardware to improve testability of system.
Information Theory & Coding (BTECPC604B)	CO1	Explain concept of Dependent & Independent Source, measure of information, Entropy, Rate of information and Order of a source
	CO2	Represent the information using Shannon Encoding, Shannon Fano, Prefix and Huffman, Encoding Algorithms
	CO3	Model the continuous and discrete communication channels using input, output and joint probabilities
	CO4	Determine a codeword comprising of the check bits computed using Linear Block codes, cyclic codes & convolutional codes
	CO5	Design the encoding and decoding circuits for Linear Block codes, cyclic codes, convolutional codes, BCH and Golay codes.
Analog & Digital Communication (BTECPC604C)	CO1	Understand Android architecture, activities and their life cycle.
	CO2	Apply the knowledge to design user interface using Android UI and Component.
	CO3	Describe Memory and File operations in Android
	CO4	Manage system database, remote database operations using web services and Firebase.
	CO5	Apply knowledge of map, location services, Graphics, android system and background services.
	CO1	The ability to provide knowledge and Analyze the performance of different types of

Electrical Drives and Control (BTECPC604D)		AC & DC machines.
	CO2	To apply the various drive mechanisms and methods for energy conservation.
	CO3	To apply power electronic converters to control the speed of DC motors and induction motors.
	CO4	To understand the motor and power converter for a specific application.
	CO5	To develop closed loop control strategies of drives.
Development Engineering (BTECPC605A)	CO1	Improve the skills of development engineering
	CO2	Get the knowledge of world poverty and development
	CO3	Aware about social justice
	CO4	Understand engineering for sustainable community development
Employability and Skill Development (BTECPC605B)	CO1	Improve the soft skills and communication.
	CO2	Empower Arithmetic and Mathematical Reasoning and Analytical Reasoning and Quantitative Ability
	CO3	Use of grammar.
	CO4	Development in interview skills.
	CO5	Develop problem solving techniques.

Consumer Behavior (BTECHM605C)	CO1	Study of Consumer Behavior
	CO2	Get Market Segmentation and Positioning
	CO3	Develop Models of Consumer Behavior
	CO4	Analyze Psychological Influences on Consumer Decision Making
	CO5	Study Diffusion of innovation Diffusion Process
MINI PROJECT-II (BTECM607)	CO1	Understand, plan and execute a Mini Project with team.
	CO2	Implement electronic hardware by learning PCB artwork design, soldering techniques
	CO3	Testing and troubleshooting etc. Prepare a technical report based on the Mini project.
	CO4	Deliver technical seminar based on the Mini Project work carried out.