**DRONACHARYA Group of Institutions**

B-27, Knowledge Park – III, Greater Noida, Uttar Pradesh - 201308
Approved by: All India Council for Technical Education (AICTE), New Delhi
Affiliated to: Dr. A. P. J. Abdul Kalam Technical University (AKTU), Lucknow

# DEPARTMENT OF ELECTRONICS AND COMPUTER ENGINEERING

## Academic Year -2024-25

## Course Outcomes

**B.TECH.6<sup>th</sup> SEM**

## Software Engineering (BCS601)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | Explain various software characteristics and analyze different software Development Models. |
| (CO2) | Demonstrate the contents of a SRS and apply basic software quality assurance practices to ensure that design, development meet or exceed applicable standards. |
| (CO3) | Compare and contrast various methods for software design |
| (CO4) | Formulate testing strategy for software systems, employ techniques such as unit testing, Test driven development and functional testing |
| (CO5) | Manage software development process independently as well as in teams and make use of Various software management tools for development, maintenance and analysis. |

## Digital Signal Processing (BECZ601)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | Design and describe different types of realizations of digital systems (IIR and FIR) and their utilities. |
| (CO2) | Select design parameters of analog IIR digital filters (Butterworth and Chebyshev filters) and implement various methods such as impulse invariant transformation and bilinear transformation of conversion of analog to digital filters. |
| (CO3) | Design FIR filter using various types of window functions. |
| (CO4) | Define the principle of discrete Fourier transform & its various properties and concept of circular and linear convolution. Also, students will be able to define and implement FFT i.e. a fast computation method of DFT. |
| (CO5) | Define the concept of decimation and interpolation. Also, they will be able to implement it in various practical applications. |

# Computer Networks (BCS603)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | Explain basic concepts, OSI reference model, services and role of each layer of OSI model and TCP/IP, networks devices and transmission media, Analog and digital data transmission . |
| (CO2) | Apply channel allocation, framing, error and flow control techniques. |
| (CO3) | Describe the functions of Network Layer i.e. Logical addressing, subnetting & Routing Mechanism. |
| (CO4) | Explain the different Transport Layer function i.e. Port addressing, Connection Management, Error control and Flow control mechanism. |
| (CO5) | Explain the functions offered by session and presentation layer and their Implementation. |

# Software Engineering Lab (BCS651)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | Identify ambiguities, inconsistencies and incompleteness from a requirements specification and state functional and non-functional requirement |
| (CO2) | Identify different actors and use cases from a given problem statement and draw use case diagram to associate use cases with different types of relationship |
| (CO3) | Draw a class diagram after identifying classes and association among them |
| (CO4) | Graphically represent various UML diagrams, and associations among them and identify the logical sequence of activities undergoing in a system, and represent them pictorially |
| (CO5) | Able to use modern engineering tools for specification, design, implementation and testing |

## Digital Signal Processing Lab (BECZ651)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | Create and visualize various discrete/digital signals using MATLAB/Scilab. |
| (CO2) | Implement and test the basic operations of Signal processing |
| (CO3) | Examine and analyse the spectral parameters of window functions. |
| (CO4) | Design IIR and FIR filters for band pass, band stop, low pass and high pass filters. |
| (CO5) | Design the signal processing algorithms using MATLAB/Scilab. |

## Computer Networks lab (BCS653)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | Simulate different network topologies. |
| (CO2) | Implement various framing methods of Data Link Layer. |
| (CO3) | Implement various Error and flow control techniques. |
| (CO4) | Implement network routing and addressing techniques. |
| (CO5) | Implement transport and security mechanisms |

## Constitution of India (BNC601)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | Understand the key features of the Indian Constitution, including fundamental rights, duties, and directive principles. |
| (CO2) | Analyze the structure, powers, and functions of the Indian government, including the legislature, executive, and judiciary. |
| (CO3) | Explain the significance of constitutional amendments and their impact on Indian governance and society. |
| (CO4) | Evaluate the role of the Indian Constitution in shaping democracy, governance, and public policy. |
| (CO5) | Apply constitutional provisions to contemporary legal and administrative issues in India. |

# OBJECT ORIENTED PROGRAMMING (KOE064)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | Explain the fundamental concepts of Object-Oriented Programming (OOP) such as classes, objects, inheritance, polymorphism, abstraction, and encapsulation. |
| (CO2) | Apply object-oriented principles to design and implement real-world applications using programming languages like C++/Java. |
| (CO3) | Analyze the efficiency and reusability of object-oriented code through design patterns and best practices. |
| (CO4) | Develop modular, reusable, and maintainable software solutions using OOP concepts. |
| (CO5) | Evaluate different object-oriented methodologies and tools for software development. |

# Microcontroller for Embedded System Design (BECZ061)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | Explain the advance concept of 8051 architectures and AVR family architecture and compare them for different applications. |
| (CO2) | To demonstrate the basics of MSP430x5x Microcontroller |
| (CO3) | To execute the I/O interfacing and peripheral devices associated with Microcontroller SoC (system on chip). |
| (CO4) | Evaluate the data transfer information through serial & parallel ports and implement its interfacing with MSP430. |
| (CO5) | Demonstrate the basics of IoT, WSN and its application sectors and design IoT based projects using MSP430 microcontroller. |