

SVM Institute of Technology, Bharuch  
 Department of EC  
 Syllabus: Backlog examination (ODD SEM 2018-19)  
 BE – IV (7<sup>th</sup>Sem) EC

**Name of Faculty:** Prof.N.N.Parmar

**Subject Code:** 2171003

**Subject Name:** Digital Signal Processing

Sr. No.	Unit	Topics
1	Unit 1	<b>Introduction to DSP:</b> Overview: Signals, systems and signal processing, classification of signals, elements of digital signal processing system, concept of frequency in continuous and discrete time signals, Periodic Sampling, Frequency domain representation of sampling, Reconstructions of band limited signals from its samples
2	Unit 2	<b>Discrete-Time Signals and Systems (Frequency Domain analysis):</b> Z-transform & Inverse z-transform, Linear convolution and its properties, Linear Constant Coefficient Difference equations, Frequency domain representation of Discrete-Time Signals & Systems, Representation of sequences by discrete time Fourier Transform, (DTFT), Properties of discrete time Fourier Transform, and correlation of signals, Fourier Transform Theorems.
3	Unit 3	<b>Analysis of Linear Time Invariant System:</b> Analysis of LTI systems in time domain and stability considerations. Frequency response of LTI system, System functions for systems with linear constant-coefficient Difference equations, Freq. response of rational system functions relationship between magnitude & phase, All pass systems, inverse systems, Minimum/Maximum phase systems, systems with linear phase.
4	Unit 4	<b>Structures for Discrete Time Systems:</b> Block Diagram and signal flow diagram representations of Linear Constant-Coefficient Difference equations, Basic Structures of IIR Systems, lattice and lattice-ladder structures, Transposed forms, Direct and cascade form Structures for FIR Systems, Linear Phase FIR structure, Effects of Co-efficient quantization.

**Text Book:**

1. “Digital Signal Processing: Principles, Algorithm & Application”, 4th edition, Proakis, Manolakis, Pearson
2. “Discrete Time Signal Processing”: Oppenheim, Schaffer, Buck Pearson education publication, 2nd Edition, 2003.

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**Name of Faculty:** Prof. Ankit D. Patel, Prof. Akanksha A. Mishra

**Subject Code:** 2171008      **Subject Name:** Data Communication and Networking

Sr. No.	Unit	Topics
1	Unit 1	<b>Introduction to Data Communication and Networking:</b> Uses of Computer Networks, Network Hardware, Network Software Internet Reference Models (OSI and TCP/IP)
2	Unit 2	<b>Physical Layer:</b> Basis for Data Communication, Guided Transmission Media , Wireless Transmission Medium, Circuit Switching and Telephone Network, High Speed Digital Access
3	Unit 3	<b>Data Link Layer:</b> Data Link Layer Design Issues, Error Detection and Correction, Data Link Control and Protocols, Example Data Link Protocol
4	Unit 4	<b>Medium Access Layer:</b> Channel Allocation Problem, Multiple Access, CSMA, CSMA/CD, CSMA/CA
5	Unit 5	<b>Local Area Network:</b> Ethernet, Fast Ethernet, Gigabit Ethernet, Wireless LAN, Blue tooth, Connecting devices:-Repeaters, Hub, Bridges, Switch, Router, Gateways, Virtual LAN, Example Networks: X.25, Frame Relay, ATM, ISDN

Text Books:

1. Computer Networks by Andrew S. Tanenbaum (Fifth Edition), Pearson Education
2. Data Communication and Networking by Behrouz A. Forouzan (Fourth Edition), Tata McGraw Hill

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**Name of Faculty:** Prof.Jigisha Kapadia

**Subject Code:** 2171103

**Subject Name:** Industrial Automation(DE-2)

Sr. No.	Unit	Topics
1	Unit 1	<b>Introduction:</b> Automation overview, Requirement of automation systems, Architecture of Industrial Automation system, Introduction of PLC and supervisory control and data acquisition (SCADA). Industrial bus systems: modbus & profibus
2	Unit 3	<b>Distributed Control System:</b> Overview of DCS, DCS software configuration, DCS communication, DCS Supervisory Computer Tasks, DCS integration with PLC and Computers, Features of DCS, Advantages of DCS.

**Text Book:**

- [1] Industrial Instrumentation and Control By. S.K. Singh The McGraw Hill Companies
- [2] Process Control Instrumentation Technology By. C.D. Johnson, PHI

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Syllabus: Backlog examination (EVEN SEM 2018-19)  
BE – III (6<sup>th</sup>Sem) EC

**Name of Faculty:** Prof.Jigisha Kapadia

**Subject Code:** 2161102

**Subject Name:** Advanced Microprocessor

Sr. No.	Unit	Topics
1	Unit 1	Introduction: Need of advance microprocessors, Difference between RISC and CISC, RISC Design philosophy, ARM Design Philosophy, History of ARM microprocessor, ARM processor family, Development of ARM architecture
2	Unit 3	<b>ARM Instruction set:</b> Data processing instructions, Arithmetic and logical instructions, Rotate and barrel shifter, Branch instructions, Load and store instructions, Software interrupt instructions, Program status register instructions, Conditional execution, Multiple register load and store instructions, Stack instructions, Thumb instruction set, advantage of thumb instructions, Assembler rules and directives, Assembly language programs for shifting of data, factorial calculation, swapping register contents, moving values between integer and floating point registers

**Text Book:**

- [1] ARM Assembly Language Programming & Architecture By. Muhammad Ali Mazidi, Kindle
- [2] Arm Assembly Language, Fundamentals and Techniques, 2nd edition, William Hohl, Christppher Hinds, CRC Press.