Department of Electronics and Telecommunication Engineering

A.Y. 2022-2023

B.E. 5th Sem

Course: Microcontroller **Course Code: (5ETC01)**

At the end of Microcontroller course, students will be able to:

CO No.	Course Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Categorize addressing modes of Microprocessor 8085.	L4
2	Illustrate Interfacing of various peripheral devices with Microprocessor 8085.	L3
3	Distinguish organization of Microcontroller 8051.	L4
4	Implement the programming for Microcontrollers using assembly language & C Programming.	L3
5	Demonstrate Interfacing of various peripheral devices with Microcontroller 8051.	L3
6	Compare advance Microcontrollers with applications.	L4

Course: Control System **Course Code: (5ETC02)**

At the end of Control System course, students will be able to:

CO No.	Course Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Apply mathematical models of electrical, mechanical and electromechanical systems.	L3
2	Determine transfer functions from block diagrams and signal flow graph.	L4
3	Evaluate transient response and steady state response parameters.	L5
4	Analyze stability of the LTI system using Routh criterion and root locus	L4
5	Analyze stability of the LTI system using bode plot and Nyquist criterion	L4
6	Analyze the state model and response of the system using state variable method.	L4

Course: Digital Signal Processing **Course Code: (5ETC03)**

At the end of Digital Signal Processing course, students will be able to:

CO No.	Course Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Calculate the discrete time signals and identify the type system.	L3
2	Compute the Z-transform of a sequence, identify its region of convergence and compute the inverse Z-transform.	L3
3	Evaluate the Fourier transform of a signal.	L5
4	Analyze the FIR and IIR filters	L4
5	Apply the concepts of Multirate Digital Signal Processing and the need of Filter banks.	L4
6	Illustrate the application of Digital Signal Processing.	L3

Course: Power Electronics (PE-I) **Course Code: (5ETC04)**

At the end of Power Electronics course, students will be able to:

CO No.	Course Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Illustrate the characteristics, working of SCR.	L3
2	Analyze the characteristics of various power electronics devices.	L4
3	Analyze controlled rectifiers.	L4
4	Illustrate the concept of Inverter circuits	L3
5	Analyze the chopper's circuits	L4
6	Illustrate various applications of power converters in DC drives.	L3

Course: Soft Skills and Interpersonal Communication Course Code: (5CE04)

At the end of Soft Skills and Interpersonal Communication course, students will be able to:

CO No.	Course Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Identify the problem and will effectively carry out work	L2
2	Described the task with developed leadership skills.	L2
3	Analyze the reasons and solutions over conflict and will be able to manage it.	L4
4	Recognize the need for negotiation and strategy negotiate things.	L2
5	Develop strong Interpersonal communication.	L6
6	Implement formal documentation process.	L3

Lab: Microcontroller Lab Code: (5ETC06)

At the end of Microcontroller Lab, the students will be able to:

LO No.	Lab Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Implement assembly language programming of microprocessor	L3
2	Demonstrate microprocessor interfacing with peripheral devices	L3
3	Evaluate embedded C program for the microcontroller programming.	L5

Lab: Digital Signal Processing Lab Code: (5ETC07)

At the end of Digital Signal Processing Lab, the students will be able to:

LO No.	Lab Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Demonstrate the various basic digital signals.	L3
2	Analyze the digital filters.	L4
3	Apply MATLAB software for DSP & its applications.	L3

Lab: Power Electronics **Lab Code: (5ETC08)**

At the end of Power Electronics Lab, the students will be able to:

LO No.	Lab Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Analyze the characteristics of various power electronics devices	L4
2	Demonstrate the operation of converter circuits	L4
3	Evaluate the operation of the firing control circuit.	L5

Lab: Electronic lab based on Instrumentation **Lab Code: (5ETC09)**

At the end of Signals & Systems Lab, the students will be able to:

LO No.	Lab Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Demonstrate the concepts of various Sensors.	L3
2	Analyze the various physical quantities using transducers	L4
3	Illustrate an instrumentation amplifier	L3

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B.E. 6th Sem

Course: Communication Network **Course Code: (6ETC01)**

At the end of Communication Network course, students will be able to:

CO No.	Course Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Analyze different types of network devices and their functions within a network.	L4
2	Evaluate the basic functions of data logical link control and media access control protocol.	L5
3	Analyze the layers of the OSI and TCP/IP model.	L4
4	Analyze routing strategies for an IP based networking infrastructure.	L4
5	Evaluate the concept of reliable and unreliable transfer protocol of data and how TCP and UDP implement these concepts.	L5
6	Analyze various Application layer Protocols.	L4

Course: Computer Architecture **Course Code: (6ETC02)**

At the end of Computer Architecture course, students will be able to:

CO No.	Course Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Illustrate how computers work.	L3
2	Categorize the performance of computers	L4
3	Calculate floating point arithmetic operations and design ALU as per the requirement	L3
4	Compare how computers are designed & built.	L4
5	Illustrate different types of memory system	L3
6	Illustrate issues affecting recent processors.	L3

Course: Satellite Communication (PE-II) **Course Code: (6ETC03)**

At the end of Satellite Communication course, students will be able to:

CO No.	Course Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Illustrate the frequency bands used in satellite communication	L3
2	Apply the basics of orbital mechanism, the types of satellite orbits and orbital aspects of Satellite communication.	L3
3	Distinguish the various typical phenomena in satellite communication.	L4
4	Compare different satellite channel parameters.	L4
5	Illustrate the working of different satellite subsystems	L3
6	Illustrate the various services of satellites.	L3

Course: Engineering Economics **Course Code: (6ETC05)**

At the end of Engineering Economics course, students will be able to:

CO No.	Course Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Illustrate the basic concept of Engineering Economics.	L3
2	Analyze the theory of production & production cost.	L4
3	Compare the different cash flow methods.	L4
4	Evaluate Engineering alternatives & project evaluation.	L5
5	Compare the depreciation methods & depreciation analysis.	L4
6	Illustrate the Indian Banking System & balance sheet reading.	L3

Course: Data Communication & Internet **Course Code: (6KS05)**

At the end of Engineering Economics course, students will be able to:

CO No.	Course Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Develop an understanding of computer networking basics.	L5
2	Develop and understanding of different components of data communication, various protocols.	L5
3	Discuss on information sharing and network.	L2
4	Describe flow of data, categories of network, different topologies.	L1
5	Interpret signals, transmission media, errors in media communication and their corrections.	L3
6	Describe the building blocks of digital communication system.	L2

Lab: Communication Network **Lab Code: (6ETC06)**

At the end of Communication Network Lab, the students will be able to:

LO No.	Lab Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Implement LAN and check network connections.	L3
2	Implement various networks and network topology	L4
3	Install network drivers	L3

Lab: Electronic Circuit Design **Lab Code: (6ETC07)**

At the end of Electronic Circuit Design Lab, the students will be able to:

LO No.	Lab Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Illustrate verilog code for various digital electronic circuits.	L3
2	Simulate and Extract the layouts of digital circuit Blocks using ASIC tools.	L4
3	Implement simulate for digital electronic circuit on PLD.	L3

Lab: Python Programming **Lab Code: (6ETC08)**

At the end of Python Programming Lab, the students will be able to:

LO No.	Lab Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Apply core syntax and semantics of Python programming language.	L3
2	Analyze the process of structuring the data using Lists, Tuples, Sets and Dictionaries.	L4
3	Implement the regular expressions and built-in functions to navigate the file system.	L3

Lab: Mini Project **Lab Code: (6ETC09)**

At the end of Mini Project, the students will be able to:

LO No.	Lab Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Apply the practice acquired knowledge within the chosen area of technology for project development.	L3
2	Analyze the technical aspects of the chosen project.	L4
3	Demonstration of the project.	L3

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