MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(Deemed University)
(Declared Under Distinct Category by Ministry of Education, Government of India) NAAC Accredited with A++ Grade

Department of Electronics and Telecommunication Engineering

List of subject wise Course Outcomes for 2020 admitted batch

Semester	Subject Code &	Course Outcomes
	Name	
I	200111 Electronic	CO1. Evaluate the parameters of basic electronic components.
	Workshop (Lab)	CO2. Calculate the phase shift between two waveforms.
		CO3. Design small electronics circuits.
II	100102 Energy,	CO1. Describe various energy resources, their conversion to electrical power and role in
	Ecology,	technological & economic development.
	Environment &	CO2. Update with national/international power status and renewable power development
	Society	targets & missions.
		CO3. Recognize the impact of pollution on the ecosystem and control policies adopted
		at national/international levels.
		CO4. Illustrate the concepts of ecosystems and their conservation.
		CO5. Solve practical problems of society in a sustainable and ethical manner.
		CO6. Fulfil professional duties keeping in mind the environmental safety, health, and
		welfare of public.
	200211 Electronic	CO1. Analyze the properties of semiconductor materials.
	Devices	CO2. Understand construction and working of different diodes.
		CO3. Analyze the operation of Bi-polar junction transistors.
		CO4. Examine the working of Field EffectTransistors.
	200212 F : :	CO5. Analyze the working of power electronics devices.
	200212 Engineering	CO1. Classify engineering materials.
	Materials	CO2. Analyze the characteristics of dielectric materials.
		CO3. Analyze the characteristics of semi-conducting materials.
		CO4. Identify insulating materials for special purposes.
	200211 Elastronia	CO5. Classify magnetic materials with reference to their properties.
	200211 Electronic	CO1. Verify the characteristics of Diode, BJT and MOSFET
	Devices (Lab)	CO2. Implement the clipper, clamper and rectifier circuits. CO3. Calculate the load and line regulation of zener regulator circuit.
	(Lau)	CO3. Calculate the load and line regulation of Zener regulator circuit. CO4. Troubleshoot the already fabricated circuits.
III	200311 Electronics	CO1 Design different diode circuits.
1111		CO2 Design the biasing circuits for BJTs.
	Circuit Design	CO3 Examine the working of BJT amplifiers.
		CO4 Analyze the different parameters of feedback amplifiers.
		CO5 Design the Oscillator and Tuned amplifier circuits.
	200312 Network	CO1 Analyze the circuits using Kirchoff's laws and Network simplification theorem.
	Theory	CO2 Solve circuits using Tree, Node, Branch, cut-set and Tie set methods.
	Theory	CO3 Evaluate transient response and steady state response.
		CO4 Examine RL, RC and RLC circuits (DC and AC) using Mesh and Nodal analysis
		techniques.
		CO5 Apply the Laplace transform to linear circuits and systems.
		CO6 Determine ABCD, Z, Y and h parameter of an electrical circuits.
	200313 Signals &	CO1 Describe mathematically the basic continuous-time and discrete along signals with
	Systems	their transformations.
	,	CO2 Describe the spectral characteristics of continuous-time and discrete time signals
		using Fourier transform.
		CO3 Develop the Z-transform for analysis of discrete time signals and systems.
		CO4 Analyze the properties of continuous-time and discrete signals.
		CO5 Calculate the convolution and response of continuous-time and discrete time systems
		with respect to input.

	I	
	200315Electronics	CO1 Discuss various performance characteristics of an instrument
	Measurement and	CO2 Explain the working principle and applications of various bridges and transducers.
	Instrumentation	CO3 Analyze the working principle of various digital instruments and display devices.
		CO4 Measure different parameters using various CROs.
	200311 Electronics	CO5 Design the A/D and D/A converter.
		CO1 Design the voltage regulator with specific voltage range.
	Circuit Design (Lab)	CO2 Design the BJT as a switch
		CO3 Implement the voltage amplifier using BJT. CO4 Analyse the RC and LC oscillator using BJT.
		CO5 Plot and draw the frequency response of the Tuned amplifier.
13.7	200411 Digital	
IV	200411 Digital	CO1. Implement the Boolean expression using basic and universal logic gates.
	Circuits & Systems	CO2. Design different combinational logic circuits CO3. Design various latches and flip-flops
		CO3. Design various fatches and rip-riops CO4. Design various shift registers and counters using flip-flops.
		CO5. Analyze different types of logic families, semiconductor memories, & multivibrators
	200412 Analog	CO1. Compare the efficiency of various power amplifiers.
	Integrated Circuits	CO2. Analyze the parameters of multistage amplifiers.
	integrated circuits	CO3. Design Multivibrator circuits using IC 555.
		CO4. Design the electronic circuits using Operational amplifier.
		CO5. Implement the active filters based on given specifications.
	200413 Analog	CO1. Analyze the amplitude modulation, their generation & detection methods. CO2.
	Communication	Explain the generation and detection techniques for angle modulated signal. CO3. Explain
	Communication	the working of transmitter and receiver.
		CO4. Evaluate the statistical parameters for general PDF/CDF.
		CO5. Evaluate the effects of noise on modulation techniques.
	200414	CO1. Design the symmetrical and asymmetrical attenuators.
	Communication	CO2. Synthesize the network for a given positive and minimum positive real function.
	Networks	CO3. Design passive filters for the given specifications.
	TTOTWOTES	CO4. Analyze the characteristics of various transmission lines.
		CO5. Calculate the impedance and SWR graphically /analytically.
	200411 Digital	CO1. Verify the operation of basic logic gates.
	Circuits & Systems	CO2. Construct the basic gates by using universal gates.
	(Lab)	CO3. Develop half adder and full adder circuits using their truth table.
	(===)	CO4. Develop the D, RS and JK flip-flops and verify their operation.
		CO5. Design Counters.
	200412 Analog	CO1. Design various applications using Op-Amp.
	Integrated Circuits	CO2. Troubleshoot the already fabricated circuit individually or in a team.
	(Lab)	CO3. Design various amplifier circuits.
	200413 Analog	CO1. Differentiate modulation and demodulation techniques.
	Communication	CO2. Calculate the modulation index for a given modulated wave.
	(Lab)	CO3. Generate AM, DSB, SSB and FM signals.
	200415PCB Lab	CO1. Design electronic circuits on PCB using software.
		CO2. Fabricate electronic circuits on PCB.
V	200511	CO1 Explain the architecture and organization of 8085 microprocessors.
,	Microprocessor &	CO2 Develop assembly language programming skill for 8085.
	Interfacing	CO3 Design memory and I/O interfacing circuits using 8255, 8253/8254, 8257/8237 and
		8259A with 8085 microprocessor
		CO4 Illustrate 8086 microprocessorarchitecture and programming skills.
		CO5 Discuss 8051 microcontroller architecture ant its application in Embedded systems.
	200511	CO1 Execute the assembly language programs for arithmetic and logical operations with
	Microprocessor &	8085 and 8086 microprocessor.
	Interfacing (Lab)	CO2 Design interfacing circuits using 8255 and 8253 with 8085 microprocessors.
	200512 Linear Control	CO1 Determine the transfer function of linear control system.
	Theory	CO2 Evaluate the time domain response of control system for different standard inputs.
		CO3 Compute the steady state error for type 0,1,2 systems.
		CO4 Analyze the stability of control system using time and frequency domain methods.
		CO5 Design proportional, integral, and derivative controller, PD, PI, PID controllers.
	200513	CO1 Explain the process of sampling and pulse modulation.
	Digital	CO2 Analyze digital modulation systems and line coding schemes.
	Communication	CO3 Describe the different band pass data transmission techniques with spectral analysis.
		CO4 Determine the base band pulse transmission techniques and error probability.
		CO5 Illustrate the concepts of information theory and source coding.

Digital Communication (Lab) Communication (Lab) CO3 Construct different pubse modulation technique. CO4 Implement different digital modulation technique. CO5 Invaluates the performance of the digital communication system using MATLAB. 200515 Minor Project-1 CO1 Detailty electronics components and their testing. Minor Project-1 CO2 Operate measuring instruments (such as multi-meter) and electronics equipments likes (RO, dual-power tracking power supply &function generator. CO3 Design the electronics circuits on bread-board. CO4 Perform soldering and de-soldering of the circuit components properly. CO5 Troublesbook at not working electronic circuit and to rectify it. VI 200601 Digital Signal Processing CO1. Analyze discrete time system using transform methods. CO2. Compute DFT using FFT algorithms. CO3. Design IR Filters. CO4. Design FIR Filters. CO5. Apply the concept of multi-rate signal processing in practical applications. 200602 Data CO3. Analyze the error and flow control in communication network. CO2. Explain the concepts of MAC layer. CO3. Bestrict the different type for couling used in IP. CO5. Selective the different type for couling used in IP. CO5. Selective the different type for couling used in IP. CO6. Selective the different application profile proteomerosism. CO6. Discuss filter factorion, spilong and optical connectors. CO3. Describe the working of optical sources and optical directors. CO4. Calculate the channel impairments like losses and dispersion. CO5. Discuss followed the descript parameters of the autemas. CO6. Describe flects of earth and its atmosphere on radio mechanism of wire antennas. CO6. Describe fundamentals of telecommunication systems and associated technologies Telecommunication Switching and Networks (DE-1) CO6. Describe fundamentals of telecommunication systems and associated technologies CO6. Describe fundamental networks to the find mental principles and technical standards underlying Data Networks. (D6. Describe fundamentals of telec		200512	001 II - 1 1 1 1
Communication (Lab) CO3 Construct different pulse modulation technique CO4 Implement different digital modulation technique CO5 Favaluate the performance of the digital communication system using MATLAB. CO1 Identify electronics components and their testing. CO2 Operate measuring instruments (such as multi-meter) and electronics equipments likes CRO, dual-power tracking power supply &function generator. CO3 Design the electronics circuits on bread-hourd. CO4 Perform soldering and des-oldering of the circuit components properly. CO5 Troubleshoot a not working electronic circuit and to rectify it. VI 200601 Digital Signal Processing CO2. Compute DPT using FPT algorithms. CO3. Design IRR Filters. CO3. Design IRR Filters. CO4. Design FIR Filters. CO5. Apply the concept of multi-rate signal processing in practical applications. CO6. Communication CO6. Explore the different types of routing used in IP. CO5. Explore the different types of routing used in IP. CO5. Explore the different types of routing used in IP. CO6. Classify the transport mechanism in TCPATIDP. CO5. Explore the different application protocol used in internetworking. CO6. Describ the working of optical survex and optical electrons. CO3. Describ the working of optical survex and optical electrons. CO3. Describ the working of optical survex and optical electrons. CO5. Discuss Tiber Tabrication, splicing and optical connectors. CO5. Discuss Tiber Tabrication, splicing and optical connectors. CO5. Discuss Coherent optical transmission system and optical networks. CO5. Discuss Coherent optical transmission system and optical networks. CO5. Discuss Coherent optical transmission system and optical networks. CO5. Discuss International and the survey of optical survey of princial survex and optical networks. CO5. Discuss International and the survey of optical survey of the aircnas. CO6. Discussion parameters of relation characteristics of Aperture and special amenuma. CO7. Discussion beroad burnering of fine aircnas. CO6. Discussion beroad burnering		200513	CO1 Understand sampling theorem.
CO3 Implement different digital modulation technique CO5 Evaluate the performance of the digital confoundation system using MATLAB. CO1 Identify electronics components and their testing. CO2 Operate measuring instruments (such as multi-meter) and electronics equipments likes CRO, dual-power tracking power supply &function generator. CO3 Design the electronics crimins on breach-board. CO4 Perform soldering and de-soldering of the circuit components properly. CO5 Trombishord a not working electronic circuit and to rectify it. VI 200601 Digital Signal Processing CO2. Compute DFT using FFT algorithms. CO3. Design IR Filters. CO3. Design IR Filters. CO4. Design IR Filters. CO5. Apply the concept of multi-rate signal processing in practical applications. 200602 Data CO11. Analyze the cror and flow control in communication network. CO2. Explain the concepts of MAC layer. CO3. Identify the different types of muting used in IP. CO4. Classify the transport mechanism in TCP/UDP. CO5. Explain the base clements of optical fiber transmission. CO2. Discuss fiber fabrication, splicing and optical connectors. CO3. CO4. Clacute the different application protocol used in internetworking. CO5. Explain the basic clements of optical fiber transmission. CO5. Discuss (Deternet optical transmission system and optical networks. CO5. Discuss (Co11. Analyze the discipa parameters and radiation mechanism of wire antennas. CO5. Discuss (Co11. Explain the basic clements) of optical sources and optical networks. CO5. Describe effects of earth and its atmosphere on radio wave propagation. CO6. Describe effects of earth and its atmosphere on radio wave propagation. CO6. Describe fundamentals of telecommunication systems and sesocial autennas. CO6. Describe effects of earth and its atmosphere on radio wave propagation. CO6. Describe fundamentals of the given radiation characteristics of Aperture and special autennas. CO6. Describe fundamentals of the given radiation systems and associated technologies (CO2. Design multi stage switching struct		_	
COS Evaluate the performance of the digital communication system using MATLAB.		Communication (Lab)	
Minor Project-I Minor Project-I Col. Identify electronics components and their testing. Col. Operate measuring instruments (such as multi-meter) and electronics equipments likes (RO, dual-power tracking power supply &function generator. Col. Design the electronics crucials on bread-board. Col. Perform soldering and de-soldering of the circuit components properly. Col. Troubleshoot a not working electronic circuit and to rectify it.			
Minor Project-I		200515	
CRO, dual-power tascking power supply &function generator. CO3 Design the electronics circuits on bread-board. CO4 Perform soldering and de-soldering of the circuit components properly. CO5 Troubleshoot a not working electronic circuit and to rectify it. VI 200601 Digital Signal Processing CO2. Compute DFT using FFT algorithms. CO3. Design FIR Filters. CO3. Design FIR Filters. CO3. Design FIR Filters. CO4. Design FIR Filters. CO5. Apply the concept of multi-rate signal processing in practical applications. CO5. Apply the concept of multi-rate signal processing in practical applications. CO6. Classly the transport mechanism in TcP/UDP. CO5. Explore the different types of routing used in IP. CO5. Explore the different types of routing used in IP. CO6. Classly the transport mechanism in TcP/UDP. CO5. Explore the different application protocol used in internetworking. CO6. Discuss fiber fabrication, sphicing and optical connectors. CO6. Discuss fiber fabrication, sphicing and optical connectors. CO6. Discuss fiber fabrication, sphicing and optical connectors. CO6. Discuss Coherent optical transmission system and optical networks. CO5. Discuss Coherent optical transmission system and optical networks. CO6. Discuss Coherent optical transmission system and optical networks. CO6. Analyze the design parameters and radiation mechanism of wire antennas. CO6. Analyze the design parameters and radiation characteristics of Aperture and special antennas. CO5. Describe effects of earth and its atmosphere on radio wave propagation. CO6. Describe fundamental of telecommunication systems and associated technologies. CO6. Describe fundamental of telecommunication systems and associated technologies. CO7. Describe fundamental principle behind adaptive control. (OC6. Discuss multi stages witching structures involving time and space switching stages. CO7. Describe fundamental principle behind adaptive control. CO7. Explain the fundamental principle behind adaptive control. CO7. Design furzy logic based control system. CO7. Design			
CO3 Design the electronics circuits on bread-board. CO4 Perform soldering and de-soldering of the circuit components properly. CO5 Troubleshoot a not working electronic circuit and to rectify it. CO1 Design and Processing CO2. Compute PTT using FTT algorithms. CO3 Design FIR Filters. CO4 Design FIR Filters. CO5 Apply the concept of multi-rate signal processing in practical applications. 200602 Data CO20 Empute PTT using FTT algorithms. CO3 Design FIR Filters. CO4 Design FIR Filters. CO5 Apply the concept of multi-rate signal processing in practical applications. 200612 Data CO20 Explore the different types of routing used in IP. CO4 Classity the transport mechanism in ToTP/UDP. CO5 Explore the different application protocol used in internetworking. CO3 Design if the basic elements of optical fiber transmission. CO5 Design fibre fibre from the compound of the control of CO5 Designs of Optical Sources and optical detectors. CO4 Calculate the channel impairments like losses and dispersion. CO5 Designs Cobern deprical transmission system and optical networks. CO3 Design anetma array for the given radiation characteristics. CO4 Analyze the design parameters and radiation mechanism of wire antennas. CO5 Design anetma array for the given radiation characteristics. CO5 Design anetma array for the given radiation characteristics of Aperture and special anetman. CO5 Design anetma array for the given radiation or characteristics of Aperture and special anetman. CO5 Design multi stage switching structures involving time and space switching stages witching structures involving time and space switching stages witching of the properties of transmit alteromanuciation traffic and control (CO5 Design multi stage switching structures involving time and space switching stages of the control of the works. CO5 Design multi stage switching structures involving time and space switching stages of the control of the works. CO5 Design multi stage switching structures involving time and space switching stages of the works. CO5 Design m		Willior Project-1	
VI 200601 Digital Signal Processing CO1. Analyze discrete time system using transform methods. CO2. Compute DFT using FFT algorithms. CO3. Design IIR Filters. CO3. Design IIR Filters. CO3. Espian III.			
VI 200601 Digital Signal Processing CO1. Analyze discrete time system using transform methods. CO2. Compute PTT using FTT algorithms. CO3. Design HR Filters. CO3. Design HR Filters. CO3. Apply the concept of multi-rate signal processing in practical applications.			
VI 200601 Digital Signal Processing CO1. Analyze discrete time system using transform methods. CO2. Compute DFT using FFT algorithms. CO3. Design IME Filters. CO3. Apply the concept of multi-rate signal processing in practical applications.			
Signal Processing CO2. Compute DFT using FFT algorithms. CO3. Design IR Filters. CO3. Design IR Filters. CO4. Design IR Filters. CO5. Apply the concept of multi-rate signal processing in practical applications.			CO3 Troubleshoot a not working electronic circuit and to rectify it.
Co. Compute DFT using FFT algorithms.	371	200601 Digital	CO1. Analyza discrete time system using transform methods
C03. Design IRR Filters. C04. Chesign IRR Filters. C05. Apply the concept of multi-rate signal processing in practical applications. 200612 Data Communication C02. Explain the concepts of MAC layer. C03. Identify the different types of routing used in IP. C04. Classify the transport mechanism in TCP/UDP. C05. Explore the different application protocol used in internetworking. C06. Implication (DE-1) C07. Explain the basic elements of optical fiber transmission. C08. Explore the different application protocol used in internetworking. C09. Excluses fiber fabrication, splicing and optical connectors. C03. Describe the working of optical sources and optical detectors. C04. Calculate the channel impairments like losses and dispersion. C05. Discuss Coherent optical transmission system and optical networks. C06. Describe the working of optical sources and optical detectors. C07. Analyze the design parameters and radiation mechanism of wire antennas. C07. Evaluate various parameters of the antenna. C08. Describe antennas array for the given radiation characteristics of Aperture and special antennas. C09. Describe effects of earth and its atmosphere on radio wave propagation. C09. Describe indamentals of telecommunication systems and aspace switching strages of the properties o	V1		
CO4. Design FIR Filters. CO5. Apply the concept of multi-rate signal processing in practical applications. CO6. Apply the concept of multi-rate signal processing in practical applications. CO7. Apply the concept of MaC layer. CO3. Identify the different types of routing used in IP. CO4. Classify the transport mechanism in TCP/UDP. CO5. Explain the different application protocol used in internetworking. CO6. Explain the basic elements of optical liber transmission. CO7. Discuss fiber fabrication, splicing and optical connectors. CO4. Calculate the channel impairments like losses and dispersion. CO5. Discuss Coherent optical transmission system and optical networks. CO6. Discuss Coherent optical transmission system and optical networks. CO7. Analyze the design parameters and radiation mechanism of wire antennas. CO8. Discuss Coherent optical transmission system and optical networks. CO9. Design antenna array for the given radiation characteristics. CO4. Analyze the design parameters and radiation characteristics of Aperture and special antennas. CO5. Design multi stage switching structures involving time and space switching strages. CO6. Design multi stage switching structures involving time and space switching strages. CO7. Design multi stage switching structures involving time and space switching strages. CO8. Demonstrate broad knowledge of fundamental principles and technical standards underlying Data Networks. Intelligent Control (CO6.1) (CO6.1) CO8. Examine the working of Telephone Networks. Intelligent Control (CO7.1) CO9. Design fuzzy logic based control system using artificial neural network. CO9. Design fuzzy logic based control system using optimization methods like Genetic algorithm. CO9. Design fuzzy logic based control system using optimization methods like Genetic algorithm. CO9. Design fuzzy logic based control system using optimization methods like Genetic algorithm. CO9. Design fuzzy logic based control system and 8051. CO9. Interface memory and IO devices with 8051 m		Signal Flocessing	
CO5. Apply the concept of multi-rate signal processing in practical applications. 200602 Data Communication CO2. Explain the concepts of MAC layer. CO3. Identify the different types of routing used in IP. CO4. Classify the transport mechanism in TCP/UDP. CO5. Exploin the different paptication protocol used in internetworking. CO5. Exploin the basic elements of optical fiber transmission. (DE-1) CO3. Explain the basic elements of optical fiber transmission. CO4. Clausers fiber fabrication, splicing and optical connectors. CO3. Describe the working of optical sources and optical detectors. CO4. Calculate the channel impairments like losses and official detectors. CO5. Discuss Coberent optical transmission system and optical networks. CO5. Discuss Coberent optical transmission system and optical networks. CO5. Discuss Coberent optical transmission system and optical networks. CO5. Describe the working of optical sources and optical detectors. CO5. Describe effects of the piven radiation characteristics of Aperture and special antennas. CO5. Describe effects of carth and its atmosphere on radio wave propagation. CO6. Describe effects of carth and its atmosphere on radio wave propagation. CO7. Describe indamentals of telecommunication systems and associated technologies CO7. Describe effects of carth and its atmosphere on radio wave propagation. CO7. Describe effects of carth and its atmosphere on radio wave propagation. CO7. Describe effects of carth and its atmosphere on radio wave propagation. CO7. Describe effects of carth and its atmosphere on radio wave propagation. CO7. Describe effects of carth and its atmosphere on radio wave propagation. CO7. Describe effects of carth and its atmosphere on radio wave propagation. CO8. Describe effects of carth and its atmosphere on radio wave propagation. CO8. Describe effects of carth and its atmosphere on radio wave propagation. CO8. Describe effects of carth and its atmosphere on radio wave propagation. CO8. Describe the working of Telephone Networks. CO8. Describe ef			
Communication CO1. Analyze the error and flow control in communication network.			
Communication CO2. Explain the concepts of MAC layer. CO3. Identify the different types of routing used in IP. CO4. Classify the transport mechanism in TCP/UDP. CO5. Explore the different application protocol used in internetworking. CO6. Explore the different application protocol used in internetworking. CO7. Explain the basic elements of optical fiber transmission. CO2. Discuss fiber fabrication, splicing and optical connectors. CO4. Calculate the channel impairments like losses and dispersion. CO5. Discuss Coherent optical transmission system and optical networks. CO4. Calculate the channel impairments like losses and dispersion. CO5. Discuss Coherent optical transmission system and optical networks. CO4. Analyze the design parameters of the antenna. CO5. Design antenna array for the given radiation characteristics. Of Aperture and special antennas. CO5. Describe effects of earth and its atmosphere on radio wave propagation. CO5. Describe effects of earth and its atmosphere on radio wave propagation. CO5. Describe fundamentals of elecommunication systems and associated technologies CO5. Describe effects of earth and its atmosphere on radio wave propagation. CO5. Describe fundamentals of elecommunication systems and associated technologies CO5. Describe effects of earth and its atmosphere on radio wave propagation. CO5. Describe fundamentals of elecommunication systems and associated technologies CO5. Demonstrate broad knowledge of fundamental principles and technical standards underlying Data Networks. (DE-1) (DC1) (DC1) (CO6.1) (CO6.1) (CO7. Explain the fundamental principle behind adaptive control. CO3. Apply the concept of artificial neural network to the field of control. CO4. Optimize the throughput of the system using optimization methods like Genetic algorithm. CO5. Design fuzzy logic based control system. Embedded System (900105) (OC-1) (CO6.1) (CO7. Explain the architecture of embedded system and 8051. CO7. Develop assembly language programming skills for 8051. CO8. Develop assembly languag			CO3. Apply the concept of indid-rate signal processing in practical applications.
Communication CO2. Explain the concepts of MAC layer. CO3. Identify the different types of routing used in IP. CO4. Classify the transport mechanism in TCP/UDP. CO5. Explore the different application protocol used in internetworking. CO6. Explore the different application protocol used in internetworking. CO7. Explain the basic elements of optical fiber transmission. CO2. Discuss fiber fabrication, splicing and optical connectors. CO4. Calculate the channel impairments like losses and dispersion. CO5. Discuss Coherent optical transmission system and optical networks. CO4. Calculate the channel impairments like losses and dispersion. CO5. Discuss Coherent optical transmission system and optical networks. CO4. Analyze the design parameters of the antenna. CO5. Design antenna array for the given radiation characteristics. Of Aperture and special antennas. CO5. Describe effects of earth and its atmosphere on radio wave propagation. CO5. Describe effects of earth and its atmosphere on radio wave propagation. CO5. Describe fundamentals of elecommunication systems and associated technologies CO5. Describe effects of earth and its atmosphere on radio wave propagation. CO5. Describe fundamentals of elecommunication systems and associated technologies CO5. Describe effects of earth and its atmosphere on radio wave propagation. CO5. Describe fundamentals of elecommunication systems and associated technologies CO5. Demonstrate broad knowledge of fundamental principles and technical standards underlying Data Networks. (DE-1) (DC1) (DC1) (CO6.1) (CO6.1) (CO7. Explain the fundamental principle behind adaptive control. CO3. Apply the concept of artificial neural network to the field of control. CO4. Optimize the throughput of the system using optimization methods like Genetic algorithm. CO5. Design fuzzy logic based control system. Embedded System (900105) (OC-1) (CO6.1) (CO7. Explain the architecture of embedded system and 8051. CO7. Develop assembly language programming skills for 8051. CO8. Develop assembly languag		200602 Data	CO1. Analyza the amon and flavy control in communication naturally
CO3. Identify the different types of routing used in IP. CO4. Classify the transport mechanism in TCP/UDP. CO5. Explore the different application protocol used in internetworking. CO1. Explain the basic elements of optical fiber transmission. (DE-1) CO3. Describe the working of optical sources and optical detectors. CO4: Calculate the channel impairments like losses and dispersion. CO5: Discuss Soher techannel and Wave Propagation. (DE-1) CO3. Describe the working of optical sources and optical networks. CO5: Discuss Coherent optical transmission system and optical networks. CO5: Discuss Coherent optical transmission system and optical networks. CO5. Describe design parameters and radiation mechanism of wire antennas. CO5. Describe effects of earth and its atmosphere on radio wave propagation. CO6: Describe fundamentals of telecommunication obstracteristics of Aperture and special antennas. CO7: Describe fundamentals of telecommunication systems and associated technologies co7: Describe fundamentals of telecommunication systems and associated technologies. CO6: Demonstrate broad knowledge of fundamental principles and technical standards underlying Data Networks. [DE-1] CO6: Demonstrate broad knowledge of fundamental principles and technical standards underlying Data Networks. Intelligent Control (OC-1) CO6: Explain the fundamental principle behind adaptive control. CO7: Explain the fundamental principle behind adaptive control. CO8: Design fuzzy logic based control system using artificial neural network. CO9: Design fuzzy logic based control system using optimization methods like Genetic algorithm. CO8: Design fuzzy logic based control system. Embedded System (900105) CO2: Develop assembly language programming skills for 8051. CO3: Analyze the concept of Timers/Counters, Serial communication and interrupt handling processes of 8051 microcontroller. CO4: Interface arduino with LED, Switches, Light dependent resistor (LDR), PWM, 16*2 LCD, Serial, L293D for motor interfacing, ADC. CO5: Design FiR and IIR			
CO4. Classify the transport mechanism in TCP/UDP. CO5. Explore the different application protocol used in internetworking. 200611 Optical Communication (DE-1) CO2: Describe the working of optical fiber transmission. CO3: Discuss fiber fabrication, splicing and optical connectors. CO4: Calculate the channel impairments like losses and dispersion. CO5: Discuss Coherent optical transmission system and optical networks. 200612 Antenna And Wave Propagation (DE-1) CO3. Describe the working of optical sources and optical detectors. CO4: Calculate the channel impairments like losses and dispersion. CO5: Discuss Coherent optical transmission system and optical networks. 200612 Antenna And Wave Propagation (DE-1) CO3. Design antenna array for the given radiation characteristics. CO4. Analyze the design parameters and radiation characteristics. CO4. Analyze the design parameters and radiation characteristics. CO5: Describe effects of earth and its atmosphere on radio wave propagation. 200613 Telecommunication Switching and Networks. (DE-1) CO3. Describe fundamentals of telecommunication systems and associated technologies CO4. Examine the working of Telephone Networks. (DE-1) CO5: Demonstrate broad knowledge of fundamental principles and technical standards underlying Data Networks. (DC-1) CO6: Estimate various parameter of control system using artificial neural network. (CO7: Apply the concept of artificial neural network to the field of control. CO4: Optimize the throughput of the system using optimization methods like Genetic algorithm. CO5: Design fluzzy logic based control system. Embedded System (900105) (CO6-1) CO7: Describe and the fundamental principle behind adaptive control. CO8: Interface Arduino with LED, Switches, Light dependent resistor (LDR), PWM, 16*2 LCD, Serial, L293D for motor interfacing, ADC. CO8: Interface and Pof devices with 8051 microcontroller. CO9: Interface and Pof devices with 8051 microcontroller. CO9: Interface and Pof devices with 8051 microcontroller. CO9: Interface and Pof devic		Communication	
CO5. Explore the different application protocol used in internetworking. 200611 Optical CO8: Explain the basic elements of optical fiber transmission. (DE-1) CO2: Discuss fiber fabrication, splicing and optical connectors. CO3: Describe the working of optical sources and optical detectors. CO4: Calculate the channel impairments like losses and dispersion. CO5: Discuss Coherent optical transmission system and optical networks. 200612 Antenna And Wave Propagation (DE-1) CO3. Design antenna array for the given radiation characteristics. CO4. Analyze the design parameters and radiation characteristics. CO5. Describe effects of earth and its atmosphere on radio wave propagation. 200613 Telecommunication Switching and Networks (DE-1) CO5. Describe indiamentals of telecommunication systems and associated technologies CO5. Describe indiamentals of telecommunication systems and associated technologies CO5. Describe effects of earth and its atmosphere on radio wave propagation. CO6. Dessign multi stage switching structures involving time and space switching stages CO5. Demonstrate broad knowledge of fundamental principles and technical standards underlying Data Networks. [DE-1] CO6. Explain the fundamental principle behind adaptive control. (OC-1) CO6. Explain the fundamental principle behind adaptive control. CO7. Optimize the throughput of the system using optimization methods like Genetic algorithm. CO7. Design fuzzy logic based control system. Embedded System (OC-1) CO7. Lexplain the architecture of embedded system and 8051. CO7. Design fuzzy logic based control system. Embedded System (OC-1) CO7. Design fuzzy logic based control system. CO8. Design fuzzy logic based control system. CO9. Design fuzzy logic based control system. CO9			
200611 Optical CO1: Explain the basic elements of optical fiber transmission. CO2: Discuss fiber fabrication, splicing and optical connectors. CO3: Describe the working of optical sources and optical detectors. CO4: Calculate the channel impairments like losses and dispersion. CO5: Discuss Coherent optical transmission system and optical networks.			
Communication (DE-1) CO2: Discuss fiber fabrication, splicing and optical connectors. CO3: Describe the working of optical sources and optical detectors. CO4: Calculate the channel impairments like losses and dispersion. CO5: Discuss Coherent optical transmission system and optical networks. CO6: Evaluate various parameters of the antenna. CO2: Analyze the design parameters and radiation characteristics. CO4: Analyze the design parameters and radiation characteristics of Aperture and special antennas. CO5: Describe effects of earth and its atmosphere on radio wave propagation. CO6: Describe effects of earth and its atmosphere on radio wave propagation. CO7: Describe effects of earth and its atmosphere on radio wave propagation. CO7: Describe fundamentals of telecommunication systems and associated technologies CO2: Design multi stage switching structures involving time and space switching stages CO7: Design multi stage switching structures involving time and space switching stages CO7: Design multi stage switching structures involving time and space switching stages CO7: Design multi stage switching structures involving time and space switching stages CO7: Design multi stage switching structures involving time and space switching stages CO7: Design multi stage switching structures involving time and space switching stages CO7: Design multi stage switching structures involving time and space switching stages CO7: Design multi stage switching structures involving time and space switching stages CO7: Design multi stage switching structures involving time and space switching stages CO7: Design structures involving time and space switching stages CO7: Design structures involving time and space switching stages CO7: Design furzy logic based control system using artificial neural network. CO3: Apply the concept of artificial neural network to the field of control. CO4: Design furzy logic based control system. CO5: Design furzy logic based control system. CO6: Design furzy logic based control system. CO7: Design f		200611.0	
(DE-1) (CO3: Describe the working of optical sources and optical detectors. CO4: Calculate the channel impairments like losses and dispersion. CO5: Discuss Coherent optical transmission system and optical networks. (CO5: Discuss Coherent optical transmission system and optical networks. (CO6: Discuss Coherent optical transmission system and optical networks. (CO6: Describe the design parameters of the antenna. CO7: Analyze the design parameters and radiation mechanism of wire antennas. CO6: Describe fundamental rarry for the given radiation characteristics of Aperture and special antennas. CO6: Describe fundamentals of telecommunication systems and associated technologies CO7: Describe fundamentals of telecommunication systems and associated technologies CO7: Describe fundamentals of telecommunication systems and associated technologies CO7: Describe fundamentals of telecommunication systems and associated technologies CO7: Describe fundamentals of telecommunication systems and associated technologies CO7: Describe fundamentals of telecommunication systems and associated technologies CO7: Describe fundamental systems in the fundamental telecommunication traffic models. CO4. CO7: Describe fundamental principle behind adaptive control. CO8: Demonstrate broad knowledge of fundamental principles and technical standards underlying Data Networks. CO7: Despita fundamental principle behind adaptive control. CO7: Despita funda			
CO4: Calculate the channel impairments like losses and dispersion. CO5: Discuss Coherent optical transmission system and optical networks. CO6: Discuss Coherent optical transmission system and optical networks. CO7: Evaluate various parameters of the antenna. CO2: Analyze the design parameters and radiation mechanism of wire antennas. CO3: Design heranen array for the given radiation characteristics. CO4: Analyze the design parameters and radiation characteristics. CO4: Analyze the design parameters and radiation characteristics. CO5: Describe effects of earth and its atmosphere on radio wave propagation. CO6: Describe fundamentals of telecommunication systems and associated technologies CO7: Describe fundamentals of telecommunication systems and associated technologies CO7: Describe fundamentals of telecommunication traffic models. CO4: Examine the working of Telephone Networks. [OE-1] Intelligent Control (900104) (OC-1) (OC-1) (OC-1) (OC-2) (DExplain the fundamental principle behind adaptive control. (OC) (DExplain the fundamental principle behind adaptive control. (CO4: Optimize the throughput of the system using artificial neural network. (CO4: Optimize the throughput of the system using optimization methods like Genetic algorithm. CO5: Design fuzzy logic based control system. Embedded System (900105) (OC-1) (O3: Analyze the concept of Timers/Counters, Serial communication and interrupt handling processes of 8051 microcontroller. CO4: Interface Ardunino with LED, Switches, Light dependent resistor (LDR), PWM, 16*2 LCD, Serial, L293D for motor interfacing, ADC. CO3: Poseign FIR and IIR filters. CO4: Co1: Explain the specifical end project. CO5: Design FIR and IIR filters. CO6: Design FIR and IIR filters. CO7: Design FIR and IIR filters. CO7: Explain the Power Budget Including Propagation Effects in Satellite. CO4: Evaluate the Various Performance Factors Related to the RADAR			
CO5: Discuss Coherent optical transmission system and optical networks. CO6: Evaluate various parameters of the antenna. CO2. Analyze the design parameters and radiation mechanism of wire antennas. CO3: Design antenna array for the given radiation characteristics. CO4: Analyze the design parameters and radiation characteristics of Aperture and special antennas. CO5: Describe effects of earth and its atmosphere on radio wave propagation. CO6: Describe fundamentals of telecommunication systems and associated technologies CO2: Design multi stage switching structures involving time and space switching stages CO3: Analyze and evaluate the fundamental telecommunication traffic models. CO4. Examine the working of Telephone Networks. CO5: Demonstrate broad knowledge of fundamental principles and technical standards underlying Data Networks. CO6: Explain the fundamental principle behind adaptive control. (O04: Optimize the throughput of the system using artificial neural network to the field of control. CO3: Apply the concept of artificial neural network to the field of control. CO5: Design fuzzy logic based control system. Embedded System (900105) (OC-1) CO6: Develop assembly language programming skills for 8051. CO3: Analyze the concept of Timers/Counters, Serial communication and interrupt handling processes of 8051 microcontroller. CO5: Interface Arduino with LED, Switches, Light dependent resistor (LDR), PWM, 16*2 LCD, Serial, L293D for motor interfacing, ADC. CO4: Generate memory and I/O devices with 8051 microcontroller. CO5: Design FIR and IIR filters. CO6: Design RR and IIR filters. CO6: Design Rad IIR filters. CO6: Design Rad IIR filters. CO7: Design & fabricate project. CO6: Explain a Basic Concepts and Terminologies of Satellite Communication (DE-3) CO4: Evaluate the Link Power Budget Including Propagation Effects in Satellite.		(DE-1)	
200612 Antenna And Wave Propagation (CO1. Evaluate various parameters of the antenna. (CO2. Analyze the design parameters and radiation mechanism of wire antennas. (CO3. Design antenna array for the given radiation characteristics. (CO4. Analyze the design parameters and radiation characteristics of Aperture and special antennas. (CO5. Describe effects of earth and its atmosphere on radio wave propagation. (CO1. Describe fundamentals of telecommunication systems and associated technologies (CO2. Design multi stage switching structures involving time and space switching stages (CO3. Analyze and evaluate the fundamental telecommunication traffic models. CO4. Examine the working of Telephone Networks. (DE-1) (CO5. Demonstrate broad knowledge of fundamental principles and technical standards underlying Data Networks. (CO2. Explain the fundamental principle behind adaptive control. (CO4. Optimize the throughput of the system using optimization methods like Genetic algorithm. (CO5. Design fuzzy logic based control system. (CO2. Develop assembly language programming skills for 8051. (CO2. Develop assembly language programming skills for 8051. (CO3. Analyze the concept of Timers/Counters, Serial communication and interrupt handling processes of 8051 microcontroller. (CO4. Interface Arduino with LED, Switches, Light dependent resistor (LDR), PWM, 16*9 LCD, Serial, L293D for motor interfacing, ADC. (CO4. Implement FFT of given sequence and identify the properties of LTI system. (CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. (CO5. Design flam and III filters. (CO1. Explain Basic Concepts and Terminologies of Satellite Communication (DE-3) (CO4 Evaluate the Various Performance Factors Related to the RADAR)			
Wave Propagation (DE-1)		200612 4 4 1	
CO3. Design antenna array for the given radiation characteristics. CO4. Analyze the design parameters and radiation characteristics of Aperture and special antennas. CO5. Describe effects of earth and its atmosphere on radio wave propagation. 200613 Telecommunication Switching and Networks (DE-1) CO3. Design multi stage switching structures involving time and space switching stages CO3. Analyze and evaluate the fundamental telecommunication traffic models. CO4. Examine the working of Telephone Networks. (DC-1) CO5. Demonstrate broad knowledge of fundamental principles and technical standards underlying Data Networks. Intelligent Control (900104) (OC-1) CO6. Estimate various parameter of control system using artificial neural network. CO3. Apply the concept of artificial neural network to the field of control. CO4. Optimize the throughput of the system using optimization methods like Genetic algorithm. CO5. Design fuzzy logic based control system. CO6. Design fuzzy logic based control system. CO7. Develop assembly language programming skills for 8051. CO2. Develop assembly language programming skills for 8051. CO3. Analyze the concept of Timers/Counters, Serial communication and interrupt handling processes of 8051 microcontroller. CO4. Interface memory and I/O devices with 8051microcontroller. CO5. Interface Arduino with LED, Switches, Light dependent resistor (LDR), PWM, 16*2 LCD, Serial, L293D for motor interfacing, ADC. 200601 Digital Signal Processing Lab CO7. Co8. Posign FIR and IIR filters. 200606 Minor CO7. Design & fabricate project. CO7. Design FIR and IIR filters. CO8. Design FIR and IIR filters. CO9. Design the Earth Station and Space Craft System CO9. Estila Basic Concepts and Terminologies of Satellite Communication (DE-3) CO8. Estila the Various Performance Factors Related to the RADDAR			
CO4. Analyze the design parameters and radiation characteristics of Aperture and special antennas. CO5. Describe effects of earth and its atmosphere on radio wave propagation. CO5. Describe fundamentals of telecommunication systems and associated technologies CO2. Design multi stage switching structures involving time and space switching stages CO3. Analyze and evaluate the fundamental telecommunication traffic models. CO4. Examine the working of Telephone Networks. (DE-1) CO5. Demonstrate broad knowledge of fundamental principles and technical standards underlying Data Networks. CO5. Demonstrate broad knowledge of fundamental principles and technical standards underlying Data Networks. CO6. Explain the fundamental principle behind adaptive control. (OC-1) CO3. Apply the concept of artificial neural network to field of control. CO4. Optimize the throughput of the system using optimization methods like Genetic algorithm. CO5. Design fuzzy logic based control system. Embedded System (900105) (OC-1) CO3. Analyze the concept of Timers/Counters, Serial communication and interrupt handling processes of 8051 microcontroller. CO4. Interface memory and I/O devices with 8051 microcontroller. CO5. Interface Arduino with LED, Switches, Light dependent resistor (LDR), PWM, 16*2 LCD, Serial, L293D for motor interfacing, ADC. 200601 Digital Signal Processing Lab CO3. Policial and Plot convolution of two given DT signal. CO3. Plot frequency response of a given system and verify the properties of LT1 system. CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. 200606 Minor Project-II CO1. Explain Basic Concepts and Terminologies of Satellite Communication (DE-3) CO3 Calculate the Link Power Budget Including Propagation Effects in Satellite.			
antennas. CO5. Describe effects of earth and its atmosphere on radio wave propagation. CO1. Describe fundamentals of telecommunication systems and associated technologies CO2. Design multi stage switching structures involving time and space switching stages CO3. Analyze and evaluate the fundamental telecommunication traffic models. CO4. Examine the working of Telephone Networks. (DE-1) Intelligent Control (900104) (OC-1) CO3. Apply the concept of artificial neural network to the field of control. CO4. Optimize the throughput of the system using artificial neural network. CO5. Design fuzzy logic based control system using optimization methods like Genetic algorithm. CO5. Design fuzzy logic based control system. Embedded System (900105) (OC-1) CO3. Analyze the concept of Timers/Counters, Serial communication and interrupt handling processes of 8051 microcontroller. CO4. Interface memory and I/O devices with 8051 microcontroller. CO5. Interface Arduino with LED, Switches, Light dependent resistor (LDR), PWM, 16*2 LCD, Serial, L2930 for motor interfacing, ADC. 200601 Digital Signal Processing Lab CO3. Plot frequency response of a given system and verify the properties of LTI system. CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. 200606 Minor Project-II CO1. Explain Basic Concepts and Terminologies of Satellite Communication (DE-3) CO3 Calculate the Link Power Budget Including Propagation Effects in Satellite. CO4 Evaluate the Various Performance Factors Related to the RADAR		(DE-1)	
CO5. Describe effects of earth and its atmosphere on radio wave propagation.			
Telecommunication Switching and Networks (DE-1) Intelligent Control (900104) (OC-1) Embedded System (900105) (OC-1) Embedded System (900105) (OC-1) Embedded System (900105) (OC-1) Embedded System (900106) Embedded System (900107) (OC-1) Embedded System (900108) Embedded System (900108) Embedded System (900109) Embedded System (900109) Embedded System (900105) (OC-1) Embedded System			
Telecommunication Switching and Networks (DE-1) Total Examine the working of Telephone Networks. (DE-1) Total Examine the working of Telephone Networks. Intelligent Control (900104) (OC-1) (OC-1) Explain the fundamental principle behind adaptive control. (OC-1) CO3. Apply the concept of artificial neural network to the field of control. CO4. Optimize the throughput of the system using optimization methods like Genetic algorithm. CO5. Design fuzzy logic based control system. Embedded System (900105) (OC-1) CO4. Displain the architecture of embedded system and 8051. CO5. Design fuzzy logic based control system. Embedded System (900105) (OC-1) CO5. Design fuzzy logic based control system using optimization methods like Genetic algorithm. CO5. Design fuzzy logic based control system. Embedded System (900105) (OC-1) CO5. Design fuzzy logic based control system. Embedded System (900105) (OC-1) CO6. Explain the architecture of embedded system and 8051. CO7. CO2. Develop assembly language programming skills for 8051. CO6. Interface memory and I/O devices with 8051 microcontroller. CO5. Interface arduino with LED, Switches, Light dependent resistor (LDR), PWM, 16*2 LCD, Serial, L293D for motor interfacing, ADC. 200601 Digital Signal Processing Lab CO6. Calculate and Plot convolution of two given DT signal. CO3. Plot frequency response of a given system and verify the properties of LTI system. CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. 200606 Minor Project-II VII 200711 Satellite & Radar Communication (DE-3) CO4 Explain Basic Concepts and Terminologies of Satellite Communication CO4 Explain Basic Concepts and Terminologies of Satellite Communication CO4 Evaluate the Various Performance Factors Related to the RADAR			
Switching and Networks (DE-1) CO3. Analyze and evaluate the fundamental telecommunication traffic models. CO4. Examine the working of Telephone Networks. (DE-1) CO5. Demonstrate broad knowledge of fundamental principles and technical standards underlying Data Networks. Intelligent Control (900104) (OC-1) CO1. Explain the fundamental principle behind adaptive control. CO2. Estimate various parameter of control system using artificial neural network to the field of control. CO3. Apply the concept of artificial neural network to the field of control. CO4. Optimize the throughput of the system using optimization methods like Genetic algorithm. CO5. Design fuzzy logic based control system. Embedded System (900105) (OC-1) CO3. Apply the concept of Timers/Counters, Serial communication and interrupt handling processes of 8051 microcontroller. CO4. Interface memory and I/O devices with 8051microcontroller. CO5. Interface Arduino with LED, Switches, Light dependent resistor (LDR), PWM, 16*2 LCD, Serial, L293D for motor interfacing, ADC. 200601 Digital Signal Processing Lab CO3. Generate discrete/digital signals using MATLAB CO4. Implement FFT of given sequence and identify the properties of LTI system. CO5. Design FIR and IIR filters. CO5. Design FIR and IIR filters. CO6. Design & fabricate project. CO7. To impart skills in fault finding and troubleshooting. CO7. Explain Basic Concepts and Terminologies of Satellite Communication CO8 Calculate the Link Power Budget Including Propagation Effects in Satellite. CO4 Evaluate the Various Performance Factors Related to the RADAR			
Networks (DE-1)			
CDE-1)		_	
Intelligent Control (900104) (900104) (OC-1) (OC-1) (CO2. Explain the fundamental principle behind adaptive control. (CO3. Apply the concept of artificial neural network to the field of control. (CO4. Optimize the throughput of the system using optimization methods like Genetic algorithm. (OC5. Design fuzzy logic based control system. Embedded System (900105) (OC-1) (OC			
Intelligent Control (900104) (OC-1) (CO2. Estimate various parameter of control system using artificial neural network. (CO3. Apply the concept of artificial neural network to the field of control. (CO4. Optimize the throughput of the system using optimization methods like Genetic algorithm. (CO5. Design fuzzy logic based control system. Embedded System (900105) (OC-1)		(DE-1)	
(900104) CO2. Estimate various parameter of control system using artificial neural network. (OC-1) CO3. Apply the concept of artificial neural network to the field of control. CO4. Optimize the throughput of the system using optimization methods like Genetic algorithm. CO5. Design fuzzy logic based control system. Embedded System (900105) CO2. Develop assembly language programming skills for 8051. (OC-1) CO3. Analyze the concept of Timers/Counters, Serial communication and interrupt handling processes of 8051 microcontroller. CO4. Interface memory and I/O devices with 8051microcontroller. CO5. Interface Arduino with LED, Switches, Light dependent resistor (LDR), PWM, 16*2 LCD, Serial, L293D for motor interfacing, ADC. 200601 Digital Signal Processing Lab CO2. Calculate and Plot convolution of two given DT signal. CO3. Plot frequency response of a given system and verify the properties of LTI system. CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. 200606 Minor Project-II CO2. To impart skills in fault finding and troubleshooting. VII 200711 Satellite & Radar Communication (DE-3) CO4 Evaluate the Various Performance Factors Related to the RADAR			
CO3. Apply the concept of artificial neural network to the field of control. CO4. Optimize the throughput of the system using optimization methods like Genetic algorithm. CO5. Design fuzzy logic based control system.			
CO4. Optimize the throughput of the system using optimization methods like Genetic algorithm. CO5. Design fuzzy logic based control system. Embedded System (900105) CO2. Develop assembly language programming skills for 8051. CO3. Analyze the concept of Timers/Counters, Serial communication and interrupt handling processes of 8051 microcontroller. CO4. Interface memory and I/O devices with 8051microcontroller. CO5. Interface Arduino with LED, Switches, Light dependent resistor (LDR), PWM, 16*2 LCD, Serial, L293D for motor interfacing, ADC. 200601 Digital Signal Processing Lab CO3. Plot frequency response of a given system and verify the properties of LTI system. CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. 200606 Minor Project-II CO2. To impart skills in fault finding and troubleshooting. VII Satellite & Radar Communication (DE-3) CO4 Evaluate the Various Performance Factors Related to the RADAR		` /	
algorithm. CO5. Design fuzzy logic based control system. Embedded System (900105) CO2. Develop assembly language programming skills for 8051. CO3. Analyze the concept of Timers/Counters, Serial communication and interrupt handling processes of 8051 microcontroller. CO4. Interface memory and I/O devices with 8051microcontroller. CO5. Interface Arduino with LED, Switches, Light dependent resistor (LDR), PWM, 16*2 LCD, Serial, L293D for motor interfacing, ADC. 200601 Digital Signal Processing Lab CO2. Calculate and Plot convolution of two given DT signal. CO3. Plot frequency response of a given system and verify the properties of LTI system. CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. 200606 Minor Project-II CO2. To impart skills in fault finding and troubleshooting. VII Satellite & Radar CO3. Col Explain Basic Concepts and Terminologies of Satellite Communication CO4 Evaluate the Various Performance Factors Related to the RADAR		(OC-1)	
CO5. Design fuzzy logic based control system.			
Embedded System (900105) (OC-1) (OC-1			
(OC-1) (CO-1) (CO-1)		E 1 11 12	
(OC-1) CO3. Analyze the concept of Timers/Counters, Serial communication and interrupt handling processes of 8051 microcontroller. CO4. Interface memory and I/O devices with 8051 microcontroller. CO5. Interface Arduino with LED, Switches, Light dependent resistor (LDR), PWM, 16*2 LCD, Serial, L293D for motor interfacing, ADC. 200601 Digital Signal Processing Lab CO2. Calculate and Plot convolution of two given DT signal. CO3. Plot frequency response of a given system and verify the properties of LTI system. CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. 200606 Minor Project-II CO2. To impart skills in fault finding and troubleshooting. VII 200711 Satellite & Radar Communication (DE-3) CO3. Analyze the concept of Timers/Counters, Serial communication and interrupt handling intercontroller. CO4. Interface memory and I/O devices with 8051 microcontroller. CO5. Design ATLAB CO6. CO1. Generate discrete/digital signals using MATLAB CO2. Calculate and Plot convolution of two given DT signal. CO3. Plot frequency response of a given system and verify the properties of LTI system. CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. CO2. To impart skills in fault finding and troubleshooting. CO1 Explain Basic Concepts and Terminologies of Satellite Communication CO2 Design the Earth Station and Space Craft System CO3 Calculate the Link Power Budget Including Propagation Effects in Satellite. CO4 Evaluate the Various Performance Factors Related to the RADAR			
handling processes of 8051 microcontroller. CO4. Interface memory and I/O devices with 8051 microcontroller. CO5. Interface Arduino with LED, Switches, Light dependent resistor (LDR), PWM, 16*2 LCD, Serial, L293D for motor interfacing, ADC. CO1. Generate discrete/digital signals using MATLAB Signal Processing Lab CO2. Calculate and Plot convolution of two given DT signal. CO3. Plot frequency response of a given system and verify the properties of LTI system. CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. CO1. Design & fabricate project. CO2. To impart skills in fault finding and troubleshooting. VII 200711 Satellite & Radar Communication (DE-3) handling processes of 8051 microcontroller. CO4. Implement resistor (LDR), PWM, 16*2 LCD, Sevial, L293D for motor interfacing, ADC. CO1. Generate discrete/digital signals using MATLAB CO2. Calculate and Plot convolution of two given DT signal. CO3. Plot frequency response of a given system and verify the properties of LTI system. CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. CO1. Design & fabricate project. CO2. To impart skills in fault finding and troubleshooting. CO3 Explain Basic Concepts and Terminologies of Satellite Communication CO2 Design the Earth Station and Space Craft System CO3 Calculate the Link Power Budget Including Propagation Effects in Satellite. CO4 Evaluate the Various Performance Factors Related to the RADAR			
CO4. Interface memory and I/O devices with 8051microcontroller. CO5. Interface Arduino with LED, Switches, Light dependent resistor (LDR), PWM, 16*2 LCD, Serial, L293D for motor interfacing, ADC. 200601 Digital Signal Processing Lab CO2. Calculate and Plot convolution of two given DT signal. CO3. Plot frequency response of a given system and verify the properties of LTI system. CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. 200606 Minor Project-II CO2. To impart skills in fault finding and troubleshooting. VII 200711 Satellite & Radar Communication (DE-3) CO4. Interface memory and I/O devices with 8051microcontroller. CO5. Design to the properties of LTI system. CO6. Design FIR and IIR filters. CO7. Design FIR and IIR filters. CO8. Design FIR and IIR finding and troubleshooting. CO9. To impart skills in fault finding and troubleshooting. CO9. Design the Earth Station and Space Craft System CO9. Calculate the Link Power Budget Including Propagation Effects in Satellite. CO9. Evaluate the Various Performance Factors Related to the RADAR		(OC-1)	
CO5. Interface Arduino with LED, Switches, Light dependent resistor (LDR), PWM, 16*2 LCD, Serial, L293D for motor interfacing, ADC. 200601 Digital Signal Processing Lab CO2. Calculate and Plot convolution of two given DT signal. CO3. Plot frequency response of a given system and verify the properties of LTI system. CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. 200606 Minor Project-II CO2. To impart skills in fault finding and troubleshooting. VII 200711 Satellite & Radar Communication (DE-3) CO5. Interface Arduino with LED, Switches, Light dependent resistor (LDR), PWM, 16*2 LCD, Serial, L293D for motor interfacing, ADC. CO1. Generate discrete/digital signals using MATLAB CO2. Calculate and Plot convolution of two given DT signal. CO3. Plot frequency response of a given system and verify the properties of LTI system. CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. CO6. To impart skills in fault finding and troubleshooting. CO6. To impart skills in fault finding and troubleshooting. CO7. To impart skills in fault finding and troubleshooting. CO8. To impart skills in fault finding and troubleshooting. CO9. To impart skills in fault finding and troubleshooting. CO9. To impart skills in fault finding and troubleshooting. CO9. To impart skills in fault finding and troubleshooting. CO9. To impart skills in fault finding and troubleshooting. CO9. To impart skills in fault finding and troubleshooting. CO9. To impart skills in fault finding and troubleshooting. CO9. To impart skills in fault finding and troubleshooting. CO9. To impart skills in fault finding and troubleshooting. CO9. To impart skills in fault finding and troubleshooting. CO9. To impart skills in fault finding and troubleshooting. CO9. To impart skills in fault finding and troubleshooting. CO9. To impart skills in fault finding and troubleshooting. CO9. To impart skills in fault finding and troubl			
16*2 LCD, Serial, L293D for motor interfacing, ADC. 200601 Digital Signal Processing Lab CO2. Calculate and Plot convolution of two given DT signal. CO3. Plot frequency response of a given system and verify the properties of LTI system. CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. CO6. Design & fabricate project. Project-II CO2. To impart skills in fault finding and troubleshooting. VII 200711 Satellite & Radar Communication CO2 Design the Earth Station and Space Craft System CO3 Calculate the Link Power Budget Including Propagation Effects in Satellite. CO4 Evaluate the Various Performance Factors Related to the RADAR			
CO1. Generate discrete/digital signals using MATLAB Signal Processing CO2. Calculate and Plot convolution of two given DT signal. CO3. Plot frequency response of a given system and verify the properties of LTI system. CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. CO1. Design & fabricate project. Project-II CO2. To impart skills in fault finding and troubleshooting. VII 200711 CO1 Explain Basic Concepts and Terminologies of Satellite Communication Satellite & Radar CO2 Design the Earth Station and Space Craft System CO3 Calculate the Link Power Budget Including Propagation Effects in Satellite. CO4 Evaluate the Various Performance Factors Related to the RADAR			
Signal Processing Lab CO2. Calculate and Plot convolution of two given DT signal. CO3. Plot frequency response of a given system and verify the properties of LTI system. CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. 200606 Minor Project-II CO2. To impart skills in fault finding and troubleshooting. VII 200711 Satellite & Radar Communication (DE-3) CO4. Implement FFT of given sequence and identify the reduction of computations using fert. CO5. Design FIR and IIR filters. CO6. Design & fabricate project. CO7. To impart skills in fault finding and troubleshooting. CO9. To impart skills in fault finding and troubleshooting.		200-101-1-1	
Lab CO3. Plot frequency response of a given system and verify the properties of LTI system. CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. CO1. Design & fabricate project. CO2. To impart skills in fault finding and troubleshooting. VII 200711 Satellite & Radar CO3 Calculate the Link Power Budget Including Propagation Effects in Satellite. CO4 Evaluate the Various Performance Factors Related to the RADAR			
CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. 200606 Minor Project-II CO2. To impart skills in fault finding and troubleshooting. VII 200711 Satellite & Radar Communication (DE-3) CO4. Implement FFT of given sequence and identify the reduction of computations using FFT. CO5. Design FIR and IIR filters. CO1. Design & fabricate project. CO2. To impart skills in fault finding and troubleshooting. CO2 Design the Earth Station and Space Craft System CO3 Calculate the Link Power Budget Including Propagation Effects in Satellite. CO4 Evaluate the Various Performance Factors Related to the RADAR		_	
FFT. CO5. Design FIR and IIR filters. 200606 Minor Project-II CO2. To impart skills in fault finding and troubleshooting. VII 200711 Satellite & Radar Communication (DE-3) CO4 Evaluate the Various Performance Factors Related to the RADAR		Lab	
CO5. Design FIR and IIR filters. 200606 Minor Project-II CO2. To impart skills in fault finding and troubleshooting. VII 200711 CO1 Explain Basic Concepts and Terminologies of Satellite Communication CO2 Design the Earth Station and Space Craft System COmmunication (DE-3) CO4 Evaluate the Various Performance Factors Related to the RADAR			
200606 Minor			
VII 200711 CO2. To impart skills in fault finding and troubleshooting. VII 200711 CO1 Explain Basic Concepts and Terminologies of Satellite Communication Satellite & Radar CO2 Design the Earth Station and Space Craft System CO3 Calculate the Link Power Budget Including Propagation Effects in Satellite. (DE-3) CO4 Evaluate the Various Performance Factors Related to the RADAR			
VII 200711 Satellite & Radar Communication (DE-3) CO1 Explain Basic Concepts and Terminologies of Satellite Communication CO2 Design the Earth Station and Space Craft System CO3 Calculate the Link Power Budget Including Propagation Effects in Satellite. CO4 Evaluate the Various Performance Factors Related to the RADAR			
Satellite & Radar Communication (DE-3) CO2 Design the Earth Station and Space Craft System CO3 Calculate the Link Power Budget Including Propagation Effects in Satellite. CO4 Evaluate the Various Performance Factors Related to the RADAR			
Communication (DE-3) CO3 Calculate the Link Power Budget Including Propagation Effects in Satellite. CO4 Evaluate the Various Performance Factors Related to the RADAR	VII		
(DE-3) CO4 Evaluate the Various Performance Factors Related to the RADAR			
I down the second terms of		(DE-3)	
CO5 Explain Target Detection and Tracking using Radar Systems.			CO5 Explain Target Detection and Tracking using Radar Systems.

	200712	CO1 Analyze the working of CMOS Transistors in different Modes of Operation.
	VLSI Design	CO2 Derive the Static Characteristics of Resistive Load, N-Type MOSFET Load CMOS
	(DE-3)	Inverters.
	(-)	CO3 Evaluate the Propagation Delay and Power Dissipation of a CMOS Inverter.
		CO4 Design a CMOS Logic Circuit and Layout Design for a Given Boolean Function.
		CO5 Analyze the Design and Operation of Various Semiconductor Memories.
	200713	CO1 AnalyzeRectangular and Circular Waveguides.
	Microwave	CO2 Calculate S- parameters of Microwave components.
	Engineering	CO3 Describe the working characteristics and applications of Microwave Tubes.
	(DE-3)	CO4 Explain the working characteristics and applications of Microwave Diodes.
	(DL 3)	CO5 Measure VSWR, Impedance, Frequency, Dielectric Constant Power, Attenuation and
		phase shift and planar transmission lines.
ŀ	900206	CO1 Explain basic concepts and terminologies of Satellite Communication.
	Satellite Systems	CO2 Design the Earth station and Space Craft System.
	(OC-2)	CO3 Explain the Indian Satellite Launchers.
	(OC-2)	CO4 Calculate the Link power budget including Propagation effects in Satellite.
		CO5 Examine the Indian Regional Navigation Satellite System.
	900207	CO1 Describe various types of Audio Systems.
	Consumer Electronics	CO2 State the working principle of Television System.
	(OC-2)	CO3 Analyze the operation of a Landline Telephone System.
	(OC-2)	CO4 Explain the working of Cellular and Mobile System.
		CO5 Explain the working of various Consumer Electronic appliances.
	900218	CO1 Describe MEMS, their types and applications.
	MEMS and	CO2 Analyze the Mechatronics system.
	Mechatronics	CO3 Analyze the performance characteristics of Sensors and Actuators.
	(OC-3)	CO4 Interface Sensors and Actuators using control unit such as Microcontroller and PLC.
	(OC-3)	CO5 Construct the prototype of manual Robotic Arm.
	900219 Multimedia	CO1 Understand the basics of Analog and Digital Video: Video representation and
	Communication	transmission.
	(OC-3)	CO2 Analyze Analog and Digital Video Signals and Systems.
	(00-3)	CO3 Know the fundamental video processing techniques.
		CO3 Know the fundamental video processing techniques. CO4 Acquire the basic skill of designing video compression and familiarizing with Video
		Compression standards.
		CO5 Know the basic techniques in designing video transmission systems: error control and
		rate control.
VIII	Major Project	CO1. Formulate the real world problems.
V 111	wagor r roject	=
		CO2. Express the technical ideas, strategies & methodologies.
		CO3. Utilize the new tools and techniques to obtain solution of the project.
		CO4. Prepare project report and oral demonstrations.
		CO5. Develop skills toward
	PD Evaluation	CO.1 Develop intellectual curiosity, competency and skills
		CO2. Develop critical thinking, creativity and effective communication
		CO3. Display professionalism and ownership of professional growth and learning
		CO3. Display professionalism and ownership of professional growth and featining