

M.V.R. DEGREE COLLEGE
(UG And PG Courses)
(Affiliated to Andhra University)
An Institution of Priyadarshini Educational Academy
NAAC ACCREDITED COLLEGE

Dr.V.Rama Rao, M.A.,Ph.D.,
Secretary & Correspondent

Dr.A.Balakrishna,M.Sc.,Ph.D.,
Principal

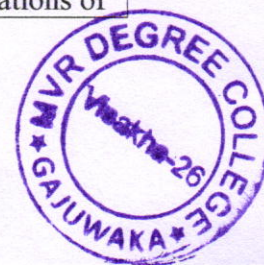
Department of Electronics

Bachelor Of Science(M.E.CS)

W.e.f.2015-16

Course Outcomes' Of Electronics:

Course code	Title of the paper	Course Out comes
Course1(TH)	Basic circuit theory	CO1:To learn about the concepts of RMS value of sine wave, j-operator, resistance, reactance and admittance concepts. CO2:To learn about the concepts of KCL and KVL and how to apply them to mesh analysis and node analysis on circuits consisting of resistors and sources. CO3:To understand Thevenin's theorem, Norton's theorem, Maximum power transfer theorem, Reciprocity theorem, Millman's theorem and their applications. CO4:To gain knowledge on RC, RL circuits, their frequency response and their Applications as Low pass, High pass filters; differentiator and integrator. CO5:To learn about the RLC parallel and series resonance circuits, Q factor and bandwidth selectivity concepts
Course1(PR)	Basic circuit theory	CO1:measurement of AC and DC voltage, frequency using CRO CO2:verification of Kirchhoff's laws CO3:thevenins theorem verification CO4:norrtons theorem verification CO5:maximum power transfer theorem verification CO6:RCs circuit frequency response(low pass &high pass) CO7: RL circuit frequency response CO8:..LCR series resonance circuits CO9: LCR parallel resonance circuits
Corse2(TH)	Electronic devices and circuits	CO 1: To learn about formation of P-N Junction, Junction capacitance, effect of temperature on reverse current, VI characteristics, applications of



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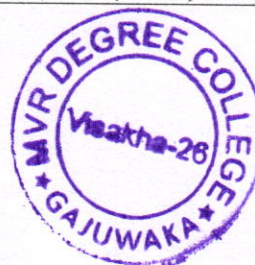
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		<p>diode and a few two terminal devices like Zener diode, Tunnel diode and Varactor diode.</p> <p>CO 2 : To learn about CB, CE CC configurations of BJT, h-parameters, load line analysis and biasing of BJT.</p> <p>CO 3 :To understand the differences between JFET and BJT, V-I characteristics of JFET, parameters of JFET, applications of FET and MOSFET. They would also learn about UJT characteristics, applications.</p> <p>CO 4 :To learn about the SCR construction, two transistor model of SCR, characteristics and applications of SCR. They would also learn about structure and operation of LED, LDR, Opto Isolators, Photo diode.</p> <p>CO 5:To learn about various filters using inductors and capacitors, series, shunt regulators and 78xx, 79xx IC regulators. They would also learn about Switch mode power supply.</p>
Course2(PR)	Electronic devices and circuits	<p>CO1: Vi characteristics of junction diode</p> <p>CO2:vi characteristics of Zener diode</p> <p>CO3:regulated power supply using Zener diode</p> <p>CO4:BJT input output characteristics</p> <p>CO5:FET input output characteristics</p> <p>CO6:UJT characteristics</p> <p>CO7:LDR characteristics</p> <p>CO8:ICregulated power supply</p> <p>CO9:VI characteristics of SCR</p>
Course3 (TH)	Digital Electronics	<p>CO 1:To know about Various number systems and conversions among them. Boolean Expressions and Conversions</p> <p>CO 2:To learn about De-Morgan Theorems, Boolean identities, Karnaugh maps and applications of them to calculate Sum of Products and Product of Sum of Boolean expressions.</p> <p>CO 3:To know about the Half adder and Full adder, Parallel Adder. Also learn about various logic families like RTL, DTL, ECL, TTL,</p>



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		CMOS etc and about Universal logic gates. CO 4: To learn about Multiplexers, de-multiplexers, half adder, full adder and various flip flops like RS, JK, D, T, Master-slave flip flops. CO 5: To learn about Semi Conductor Memories ROM, RAM, PROM, EPROM, EEPROM, PAL And PLA
Course3(PR)	Digital Electronics	CO1: Verification of IC logic gates CO2: Realization of basic gates using discrete components CO3: realization of basic gates using universal gates. CO4: verify half adder and full adder using gats. CO5: verify half subtract or full subtractor using gates CO6: verify truth table of RS ,JK,T flip flop using NAND gates CO7: BCD to seven segment IC7447/7448
Course4(TH)	Analog and digital IC applications	CO 1: To learn about the basic components of operational amplifier, the working of differential amplifier in various configurations. They would also learn about various input and output parameters of op-Amp. CO 2: To learn about basic op-Amp circuits, inverting, non-inverting amplifiers, Frequency response of op-Amp. CO 3: To learn about the applications of op-Amps for various mathematical operations, usage of op-Amp as oscillators, and voltage regulators. CO 4: To learn about the data converters like AD Converters: Successive Approximation ADC, Single slope and dual slope converters and Sigma Delta ADC , DA Converters: R-2R Ladder Network, Binary Weighted. CO 5: To Understand the Digital system interfacing and applications : interfacing of

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		LEDs. Applications of counters : Digital Clock. Applications of Shift Registers Serial to Parallel, Parallel to serial, UART.
Course4(PR)	Analog and digital IC applications	CO1:op-amp inverting and non inverting amplifier CO2:op-amp sine wave generator CO3:design of 4-bit priority encoder CO4:op-amp integrator and differentiator CO5:astable multivibrator CO6:op-amp square wave generator using PSPICE simulation CO7:study of presetting binary counter using PSPICE simulation CO8:design and verification of 4-bit ripple counter. CO9:schmitt trigger IC 555 timer using PSPICE simulation. CO10:binary to gray and gray to binary code converter.
Corse5(TH)	8085 Microprocessors	CO 1:To learn about the Intel 8085 Microprocessor Block diagram – central processing unit CPU – arithmetic and logic unit ALU and they can understand the concepts of address, data and control buses in the digital systems. CO 2:To learn about the Instruction cycle, machine cycle, fetch and execute cycles. Timing diagrams, Stack and subroutines. Students can learn about various Interrupts – hardware and software interrupts. CO 3 :To learn about the instructions of 8085 microprocessor. Assembly language programming examples of 8 and 16 bit addition, subtraction, multiplication And division using 8085 microprocessor. CO 4: To learn about 8255 interfacing, interfacing A/D and D/A converters, stepper motor and Seven Segment Display (SSD) with the microprocessor. CO5: To learn about 8255 pin configuration,



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		interfacing 8051 with 8255,programming 8255 and interfacing other modes of 8255.
Course5(PR)	8085 Microprocessor	CO1: Addition and subtraction (8 & 16-bits) CO2: multiplication and division(8-bit) CO3: largest and smallest in the given array CO4: ascending and descending order CO5:binary to ascii,ascii to binary CO6: block transfer of data. CO7: wave form generation using DAC converter CO8:stepper motor interface.
Corse6(TH)	Electronic communication	CO 1:To learn about the Block Diagram of communication System, types of communications: one way(simplex), two way(full duplex)-noise in communication: atmospheric noise and shot noise. CO 2:To gain knowledge about the modulations like Amplitude Modulations- need for modulation- modulation Index- frequency spectrum of AM(diode detector) other forms of AM: Single Side Band Suppressed Carrier. CO 3:To learn about the Frequency and Phase Modulation, Modulation Index and Frequency Spectrum of FM, FM Detector(Slope Detector) - comparison between AM,FM& PM CO 4: To Know about the Transmitters: communication channels for Am and FM Broadcast, AM Transmitter: low level and high level modulation, FM transmitter. CO 5 :To learn about digital communication: Pulse Amplitude Modulation(PAM), TDM.PWM and PPM.
Course6(PR)	Electronic communication	CO1: study of amplitude modulation and demodulation CO2:study of frequency modulation and demodulation CO3:study of pulsu amplitude modulation CO4:study of pulse width modulation CO5:study of pulse position modulation. CO6:..study of pulse code modulation CO7:..simulation of AM modulation and

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		demodulation using software CO8:simulation of FM modulation and demodulation using software
Corse7(TH)	8051 Microcontroller	CO 1: To learn about the architecture of 8051 microcontroller and program counter and memory organization in the micro controller and the pin configuration. CO 2 :To learn about addressing and instruction set of 8051 Micro controller CO 3 :To learn about the basic programs like addition, subtraction, multiplication, division, Largest number and smallest number, ascending and Descending order. CO 4:To learn Interfacing of 8255 with 8051, interfacing of seven segment LED display with 8051- interfacing of matrix 4X4 key board- interfacing of LCD with 8051- interfacing of temperature measurement. CO 5: To learn about the basics of serial communication, Interfacing 8051 to RS232, serial communication programming and modes & protocols. Stepper motor, DAC to 8051.
Course7(PR)	8051 Microcontroller	CO1: Multiplication of two numbers using MUL Command CO2: Devision of two numbers using DIV CO3: Pick Largest & Smallest number among a given set of numbers CO4: Interface a DAC & Generate a stair case Wave form with step duration and no. of Steps as variables. CO5: Interface a Stepper motor and rotate Clock Wise or anti clock wise through given angle Step CO6: Using Keil software a program to pick the Smallest among a given set of numbers. CO7: Using Keil software, write a program to Pick the Largest among a given set of Number. CO8: Using Keil software, write a program to Generate a rectangular wave form at a



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		Specified port terminal.
ClusterB1(TH)	Embedded systems	<p>CO 1: To learn over view of embedded systems, and applications, common architecture, software design issues.</p> <p>CO 2:To learn over view of Harvard architecture, RISC, SISC microcontroller</p> <p>CO 3:to learn about AVR RISC micro controller.</p> <p>CO 4: To learn about system clock, interrupts, ports, timers.</p> <p>CO 5 : To understand the FDM,TDM, WDM, Modem: Traditional Modems and cable modems</p>
ClusterB1(PR)	Embedded systems	<p>CO1: Controlling on/off of an LED.</p> <p>CO2: Display HELLO LED On the AVR Trainer kit</p> <p>CO3: Display Single Character using Key Board.</p> <p>CO4: Interfacing of D.C Motor.</p> <p>CO5: Interfacing of Stepper Motor.</p>
ClusterB2(TH)	VLSI Design	<p>CO 1:To learn about definitions, classifications, advantages of ICs-MOS: Enhancement Mode of NMOS, PMOS – CMOS fabrications: N-well,P-well</p> <p>CO 2 :To Understand the NMOS inverter-CMOS Inverter – VLSI Design Flow: Design Specifications, Design Entry- Examples of (circuit diagrams only),NMOS,PMOS and CMOS</p> <p>CO 3 : To learn about the basic logic gates in CMOS – Complex logic gates: two, Three inputs of CMOS NAND gate- combinational logic: two and three inputs of CMOS NOR Gate- Compound gates in CMOS.</p> <p>CO 4 : To gain basic knowledge on VHDL : brief history, logical, relational , arithmetic, shift and rotate operators, data types</p> <p>Verilog HDL : brief history, logical, relational ,</p>

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		arithmetic, shift and rotate operators, data types Comparison of VHDL and Verilog HDL CO 5 : To learn about the Data flow descriptions and HDL Programs like basic logic gates, universal logic gates, half adder, Multiplexer, magnitude comparator and binary adder
clusterB2(PR)	VLSI Design	CO1:To plot output characteristics and input characteristics of n-channel and p-channel MOSFET CO2:To design and plot the static and dynamic characteristics of digital COMS inverter. CO3:To design and plot output characteristics of inverter ring oscillator. CO4:To design and plot the dynamic characteristic of 2-input NAND ,NOR, XOR,XNOR logic gates CO5: To design and plot characteristics of 4*1digital multiplexer using pass transistor logic. CO6:To design and plot the characteristics of positive and negative latch based on multiplexers. CO7:To design and plot the characteristics of master slave positive and negative edge triggered registers based on multiplexers
ClusterB3(TH)	Computer network	CO 1: To gain knowledge about Data Communication and its components- introduction of network, types of networks: PAN,LAN,MAN & WAN. CO 2: To learn about the Network Topologies: Bus topology, Ring topology, Star Topology, Mesh topology, Tree topology, Hybrid topology. CO 3: To Know the basics of transmission Medias- guided media: Twisted pair cable, co- axial cable, optical fiber cable. Un guided media- radio waves, micro waves, and infrared waves. CO 4 :To learn about data transmissions: digital to digital conversions(line coding only), analog to digital conversion(PCM only),Digital to analog conversion(ASK), Analog to analog



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		transmission AM only- Transmission Modes (Parallel and Serial) CO 5 :To understand the FDM,TDM, WDM, Modem: Traditional Modems and cable modems
clusterB3(PR)	Computer network	CO1:Study of different types of network cables CO2:Study of network device CO3:Study of network IP CO4:Connect the computers in local area network CO5:Study of basic network command and network configuration command CO6:Configure a network topology using packet tracer software CO7: configure a network using link state vector routing protocol.

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