

SAMRAT ASHOK TECHNOLOGICAL INSTITUTE, VIDISHA
(Engineering College)

Course Contents & Grade

Branch	Subject Title	Subject Code	Credits		End Sem Marks
			Theory	Practical	
M.E. Power Electronics III rd sem.	Advanced Micro controller	MEPE-2231 (B) Elective-IV	3	--	Max 60

Unit -I

Overview of 8 bit/ 16 bit/ 32 bit microcontroller, architectural details and memory map of 8 bit/ 16 bit/ 32 bit microcontroller.

Unit -II

Instruction set of 8051 microcontroller, data transfer instructions, arithmetic instructions, logical instructions, single bit instructions, jump loop & call instructions, I/O port programming, addressing modes, programming using assembly language and C-language programming.

Unit -III

Timer/Counter in 8051, Timer/Counter programming, interrupts of 8051, interrupt priority programming timer interrupt, programming external hardware interrupts, serial communication interrupt programming.

Unit- IV

Basics of serial communication, 8051 serial communications programming, connection to RS 232, 8051 interfacing to external memory, memory address decoding, Interfacing with external ROM, Data memory space.

Unit -V

Interfacing of 8051 to LCD, DAC, ADC keyboard, stepper motor, programmable peripheral interface chip and sensors.

Reference Books:-

1. Kenneth.J..Ayala, The 8051 microcontroller Architecture, programming & application, Penram International Publishing India Pvt. Ltd.
2. Muhammad Ali Mazidi, Janice Gillispie Mazidi, The 8051 microcontroller and embedded System, Pearson Education.
3. Rajkamal, Microcontrollers, Architecture, programming interfacing and system design. Pearson Education.

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Branch	Subject Title	Subject Code	Credits		End Sem Marks
			Theory	Practical	
M.E. Power Electronics III rd sem.	EHV AC & DC Transmission	MEPE-2232 (B) Elective-V	3	--	Max 60

Unit-I

Constitution of EHV a.c. and d.c. links, Kind of d.c. links, Limitations and Advantages of a.c. and d.c. transmission, Principal application of a.c. and d.c. transmission, Trends in EHV a.c. and d.c. transmission, Power handling capacity. Converter analysis garetz circuit, Firing angle control, Overlapping.

Unit-II

Extra long distance lines, Voltage profile of loaded and unloaded line along the line, Compensation of lines, Series and shunt compensation, Shunt reactors, Tuned power lines. Problems of Extra long compensated lines, FACT concept and application.

Unit-III

Travelling waves on transmission systems, Their shape, Attenuation and distortion, effect of junction and termination on propagation of traveling waves. Over voltages in transmission system. Lightning, switching and temporary over voltages: Control of lightning and switching over voltages.

Unit-IV

Components of EHV d.c. system, converter circuits, rectifier and inverter valves, Reactive power requirements, harmonics generation, Adverse effects, Classification, Remedial measures to suppress, filters, Ground return. Converter faults & protection harmonics misoperation, Commutation failure, Multiterminal D.C. lines.

Unit-V

Control of EHV d.c. system desired features of control, control characteristics, Constant current control, Constant extinction angle control. Ignition Angle control. Parallel operation of HVAC & DC system. Problems & advantages.

Reference Books:

- Begmudre, EHV AC Transmission.
- S. Rao, EHV AC & DC Transmission.
- Kimbark, HVDC Transmission.
- Arrillaga, HVDC Transmission.
- Padiyar, HVDC Transmission.