



ST. JOSEPH'S DEGREE & PG COLLEGE

Autonomous

Affiliated to Osmania University

Re-accredited by NAAC with 'A' Grade.

S.No	COURSE	TOPIC	E-RESOURCE/LINKS
1	Circuit Analysis	AC Fundamentals	1. https://www.allaboutcircuits.com/textbook/alternating-current/chpt-1/what-is-alternating-current-ac
			2. https://thinkelectronics.org/fundamentals-alternating-current-c
			3. https://www.electronics-tutorials.ws/accircuits/ac-waveform.html
		Kirchhoff's Voltage Law and Current Law	1. https://x-engineer.org/graduate-engineering/electronics/circuits/kirchhoff-current-voltage-law-kcl-kvl-xcos-example/
			2. https://www.electronics-tutorials.ws/dccircuits/dcp_4.html/
		Node voltage method	3. https://www.allaboutcircuits.com/textbook/direct-current/chpt-10/node-voltage-method
		Mesh Current Analysis	4. https://www.allaboutcircuits.com/textbook/direct-current/chpt-10/mesh-current-method
		Network Theorems	1. https://www.youtube.com/watch?v=cpwMPTFPFKM
			2. https://www.allaboutcircuits.com/textbook/direct-current/chpt-10/introduction-network-theorems
		RC & RL Circuits	1. http://www.labsanywhere.net/circuit/lectures/lect7/lecture7.php
			2. http://info.ee.surrey.ac.uk/Teaching/Courses/ee1.cct/circuit-theory/section6/natresponse.html
		RC & RL Filters	3. http://www.learningaboutelectronics.com/Articles/filters.php
			4. https://circuitdigest.com/tutorial/rc-rl-and-rlc-circuits
		Series and parallel resonance	1. https://www.electronics-tutorials.ws/accircuits/series-resonance.html
2. https://www.tutorialspoint.com/network_theory/network_theory_parallel_resonance.htm			
Cathode	1. https://www.elprocus.com/cro-cathode-ray-oscilloscope-		

		Ray Oscilloscope	working-and-application/ 2. https://electronicsclub.co.in/cathode-ray-oscilloscope-cro-working		
2	Electronic Devices and Circuits	PN Junction and Junction diode	1. https://www.electronics-tutorials.ws/diode/diode_2.html 2. https://www.allaboutcircuits.com/textbook/semiconductors/chpt-2/the-p-n-junction		
		Bipolar Junction Transistor	1. https://www.allaboutcircuits.com/textbook/semiconductors/chpt-2/bipolar-junction-transistors/ 2. https://www.electronics-tutorials.ws/transistor/tran_1.html 3. https://www.electronics-tutorials.ws/amplifier/transistor-biasing.html 4. https://www.electrical4u.com/hybrid-parameters-or-h-parameters		
		Junction Field Effect Transistor	1. https://www.allaboutcircuits.com/textbook/semiconductors/chpt-2/junction-field-effect-transistors 2. https://www.electronics-tutorials.ws/transistor/tran_6.html 3. https://www.allaboutcircuits.com/textbook/semiconductors/chpt-2/insulated-gate-field-effect-transistors-mosfet		
		Uni Junction Transistor	1. https://electricalfundablog.com/unijunction-transistor-ujt-construction-working-characteristics-curve-applications		
		Silicon Controlled Rectifier	1. https://www.tutorialspoint.com/power_electronics/power_electronics_silicon_controlled_rectifier.htm		
		Photo Electric Devices	http://www.industrial-electronics.com/DAQ/transducers_12-0.html		
		3	Analog Circuits	Rectifiers	1. https://www.youtube.com/watch?v=ofW4DZH83JQ 2. https://www.allaboutcircuits.com/textbook/semiconductors/chpt-3/rectifier-circuits
				Filters	3. https://www.youtube.com/watch?v=LL3U-Gp-qGk 4. http://www.circuitstoday.com/filter-circuits
Voltage Regulator	5. https://www.elprocus.com/types-of-voltage-regulators-and-working-principle				

4	Linear Integrated Circuits & Basic Communication Electronics	s	6. https://www.youtube.com/watch?v=R_QnIAEk7Go	
			7. https://www.electrical4u.com/voltage-regulator	
		Regulated Power Supply	8. https://www.youtube.com/watch?v=x2wqwqUhMdE	
			9. https://www.elprocus.com/regulated-power-supply-circuit-working-applications	
		Amplifiers	10. https://www.electronicstutorials.ws/amplifier/amp_1.html	
			11. https://www.youtube.com/watch?v=7HxGCFMCNYYE	
		Feedback	12. https://www.elprocus.com/what-is-a-feedback-amplifier-types-characteristics-and-applications	
			13. https://electronicscoach.com/feedback-amplifier.html	
		Oscillators	14. https://www.elprocus.com/different-types-of-oscillator-circuits-its-applications	
			15. https://www.youtube.com/watch?v=XVS8Puf4tiw	
			16. https://www.youtube.com/watch?v=Gvb4GIV5ig8	
		Multivibrators	17. https://www.electronicstutorials.ws/oscillator/hartley.html	
			18. https://www.electronicstutorials.ws/sequential/seq_3.html	
			19. https://www.youtube.com/watch?v=dObrI_iQWig	
				20. https://www.youtube.com/watch?v=nTm-fB1OrqE
		Operational Amplifiers	Operational Amplifiers	1. https://www.allaboutcircuits.com/textbook/semiconductors/chpt-8/introduction-operational-amplifiers
				2. https://www.youtube.com/watch?v=kiiA6WTCQn0
				3. https://www.electronicstutorials.ws/opamp/opamp_1.html
			Operational amplifier applications	4. https://www.electrical4u.com/applications-of-op-amp
				5. https://www.electronicnotes.com/articles/analogue_circuits/operational-amplifier-op-amp/circuits.php
555 IC Timer	6. https://www.electricaltechnology.org/2014/12/555-timer.html			
	7. https://www.youtube.com/watch?v=EGmreVQ-yNM			
Introduction to Electronic Communication	8. https://www.elen.ca/education/communications/introduction-communication-systems			
	9. https://www.toppr.com/guides/physics/communication-			

			systems/modulation-and-its-necessity
		Amplitude modulation and demodulation	10. https://www.toppr.com/guides/physics/communication-systems/amplitude-modulation
			11. https://www.toppr.com/guides/physics/communication-systems/detection-of-amplitude-modulated-wave
			12. https://www.youtube.com/watch?v=MZmMCj0h_FA
		Frequency modulation and detection	13. https://www.electronics-notes.com/articles/radio/modulation/fm-frequency-demodulation-detection-discrimination.php
			14. https://www.electronics-notes.com/articles/radio/modulation/fm-frequency-demodulation-slope-detector-discriminator.php
			15. https://www.electronics-notes.com/articles/radio/modulation/fm-frequency-demodulation-ratio-detector-discriminator.php
		Pulse Analog Modulation	16. https://www.youtube.com/watch?v=TM47sEXeaj8
			17. https://www.tutorialspoint.com/analog_communication/analog_communication_pulse_modulation.htm
5	Digital Electronics	Number System	1. https://www.youtube.com/watch?v=L2zsmYaI5ww
			2. https://www.toppr.com/guides/computer-aptitude-and-knowledge/basics-of-computers/number-systems
		Logic Gates	3. https://www.tutorialspoint.com/computer_logical_organization/logic_gates.htm
			4. https://www.youtube.com/watch?v=AT_GjUjNFpo
		Boolean Algebra	5. https://www.tutorialspoint.com/computer_logical_organization/boolean_algebra.htm
			6. https://www.youtube.com/watch?v=0as464WmfCo
		DeMorgan Laws	7. https://www.elprocus.com/sum-of-products-and-product-of-sums
			8. https://www.youtube.com/watch?v=rGo_n6P7iNQ
		Karnaugh Maps	9. https://www.allaboutcircuits.com/textbook/digital/chpt-8/karnaugh-maps-truth-tables-boolean-expressions
		Universal building blocks	10. https://www.electronics-tutorials.ws/logic/universal-gates.html
		TTS and CMOS	11. https://www.youtube.com/watch?v=aU0nLAicRKQ
			12. https://www.electrical4u.com/transistor-transistor-logic-or-ttl
		Half	13. http://www.circuitstoday.com/half-adder-and-full-adder

6	Microcontroller 8051	adder full adder 4bit binary adder, multiplex er, encoder, decoder	14. https://www.tutorialspoint.com/computer_logical_organization/combinational_circuits.htm
		Sequential Logic Circuits	15. https://www.elprocus.com/tutorial-on-sequential-logic-circuits
			16. https://www.electronicstutorials.ws/sequential/seq_2.html
		Registers and Counters	17. https://www.youtube.com/watch?v=8JMfp-y335s
			18. https://www.tutorialspoint.com/computer_logical_organization/digital_registers.htm
		8051 Architect ure	1. https://www.tutorialspoint.com/microprocessor/microcontrollers_8051_architecture.htm
			2. https://www.electronicshub.org/8051-microcontroller-architecture
		Instructio n set and addressin g modes	3. https://www.electronicshub.org/8051-microcontroller-instruction-set
			4. https://www.tutorialspoint.com/addressing-modes-of-8051
8051 Assembl y Language Program ming	5. https://www.electronicshub.org/8051-microcontroller-assembly-language-programming		
	6. https://www.elprocus.com/8051-assembly-language-programming		
8051 Assembl y Language Program ming	7. http://www.polyengineeringtutor.com/8051%20Assembly%20Programming.pdf		
8051 Embedde d C Program ming	8. https://www.elprocus.com/embedded-system-programming-using-keil-c-language		
	9. https://microcontrollerslab.com/8051-microcontroller-tutorials-c		
	10. https://www.electronicshub.org/basics-of-embedded-c-program		

		8051 Timers and Counters	11. https://www.elprocus.com/8051-microcontroller-8-16-bit-timers-and-counters 12. http://www.circuitstoday.com/8051-timers-counters
		8051 Serial Communication	13. https://www.gadgetronicx.com/serial-communication-in-8051-microcontroller 14. https://microcontrollerslab.com/serial-communication-8051-keil 15. http://what-when-how.com/8051-microcontroller/8051-serial-port-programming-in-assembly
		Analog to digital and digital to analog	16. https://www.youtube.com/watch?v=yFliJ6bJUNE 17. https://www.youtube.com/watch?v=N8iIGfCIDEo
7	Digital Communication	Pulse Analog Modulation	1. https://www.youtube.com/watch?v=TM47sEXeaj8 2. https://www.tutorialspoint.com/analog_communication/analog_communication_pulse_modulation.htm
		pulse digital modulation	3. https://www.tutorialspoint.com/digital_communication/digital_communication_pulse_code_modulation.htm 4. https://www.youtube.com/watch?v=tFzvsqlcQfs
		Digital Carrier Modulation Techniques:	5. https://www.tutorialspoint.com/principles_of_communication/principles_of_communication_digital_modulation_techniques.htm 6. https://www.electronicdesign.com/technologies/communications/article/21798737/understanding-modern-digital-modulation-techniques
		Error detection and coding	7. https://www.tutorialspoint.com/digital_circuits/digital_circuits_error_detection_correction_codes.htm 8. https://www.youtube.com/watch?v=eQgRDdBD5Os
		Multiple Access Techniques	9. https://www.youtube.com/watch?v=b8E-KXQebJQ 10. https://www.tutorialspoint.com/satellite_communication/satellite_communication_multiple_access_techniques.htm 11. https://nptel.ac.in/content/storage2/courses/117105077/pdf-m-7/m7l40.pdf
8	Design using VHDL	Introduction to VHDL	1. https://www.tutorialspoint.com/vlsi_design/vlsi_design_vhdl_introduction.htm 2. http://www.ggn.dronacharya.info/ECEDept/Downloads/

			QuestionBank/Visem/VLSI_Design/Section-D/VLSI_Lecture_4.pdf
			3. https://nptel.ac.in/content/storage2/courses/117101004/downloads/Lecture%20Notes/D.K.%20Sharma/L20.pdf
			4. https://www.vhdl-online.de/courses/system_design/start
		Operators in VHDL	5. http://vhdl.renerta.com/mobile/source/vhd00047.htm
		Behavioral Modeling	6. https://www.youtube.com/watch?v=zc_OZrvUJMQ
			7. https://www.investopedia.com/terms/b/behavioral-modeling.asp
		Data Flow Modeling	8. https://www.youtube.com/watch?v=b1H7AcCsRSs
			9. https://vhdlguide.readthedocs.io/en/latest/vhdl/dataflow.html
		Structural Modeling	10. https://surf-vhdl.com/vhdl-syntax-web-course-surf-vhdl/vhdl-structural-modeling-style
			11. https://www.youtube.com/watch?v=YQVRnyrdQxY
		Subprograms and Overloading	12. https://www.vhdl-online.de/courses/system_design/vhdl_language_and_syntax/subprogram_declaration_and_overloading
9	Basic Arduino Programming (SEC)	Arduino Programming	1. https://www.youtube.com/watch?v=QO_Jlz1qpDw
			2. https://www.tutorialspoint.com/arduino/index.htm
			3. https://www.tutorialspoint.com/arduino/arduino_dc_motor.htm
			4. https://www.tutorialspoint.com/arduino/arduino_stepper_motor.htm