

Automation Schemes of work for AM-LV &AM-HD

AUTOMATION FOR LOWER SIXTH AM-LV & AM-HD

TERM	SEQ	WEEKS	CHAP	TOPICS	content	SPECIFIC OBJECTIVE	Duration
FIRST TERM	FIRST SEQUENCE	From..... to..... Week1	CHAP-0	AUTOMATION	0.1.The program 0.2.Generalities of automated systems 0.3.Synoptic Diagram Of Automated System	0.1.presentation of the program 0.2. Discuss the brief history of automated systems. 0.3.Draw the synoptic diagram of automated system	2hours
		From..... to..... Week 2	CHAP-1	NUMERATION SYSTEMS	1.1.Definition 1.2.Arithmetic operation	1.1.define and identify the different types of numeration systems 1.2. Carry out arithmetic operations i.e addition, subtraction and multiplication.in binary, octal, hexadecimal and decimal.	2hours
		From..... to..... Week 3	CHAP-1	NUMERATION SYSTEMS	1.3.Conversion 1.4.Conversion 1.5. Conversion	1.3. Carry out Conversion from binary, octal and hexadecimal to decimal. 1.4. Carry out Conversion from binary to octal and hexadecimal. 1.5. Carry out Conversion of octal and hexadecimal to binary.	2hours
		From..... to..... Week4	CHAP-1	NUMERATION SYSTEMS	1.6.codes	1.6.Established the conversion table including decimal, binary octal hexadecimal gray code and BCD codes	2hours
		From..... to..... Week 5	. FIRST SEQUENCE EVALUATIONS				2hours
		From..... to..... Week 6	CHAP-1	NUMERATION SYSTEMS	1.8.Corrections of first sequence valuation	1.8. first sequence Evaluations	2hours
	SECOND SEQUENCE	From..... to..... Week 7	CHAP-2	COMBINATORIAL LOGIC	2.1 Definition 2.2. Logic gates and truth tables	2.1.Define a combinatory logic system 2.2.Identify the different types of logic gates and explain their differences functioning or operation	2hours

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THIRD SEQUENCE		From..... to..... Week 8	CHAP-2	COMBINATORIAL LOGIC	2.3 Boolean expression 2.4.Basic theorem	2.3.Identify Boolean equations and establish truth tables, electric diagram and its logigram 2.4. Demonstrate basic theorem and DeMorgans laws	2hours	
		From..... to..... Week 9	CHAP-2	COMBINATORIAL LOGIC	2.5 Analytical simplification of logic equations. 2.6. Karnaugh map 2.7 Electrical and logical circuits	2.5.Analytically simplify a Boolean equation 2.6. Simplify Boolean equation using Karnaugh map 2.7.Construct electrical and logical diagram from a Boolean equation	2hours	
		From..... to..... Week 10	SECOND SEQUENCE EVALUATIONS					2hours
		From..... to..... Week 11	CORRECTIONS OF SECOND SEQUENCE VALUATION					2hours
		From..... to.....	BREAK(CHRISMAS HOLIDAYS)					
		From..... to.....						
		From..... to..... Week 12	CHAP-3	SEQUENTIAL LOGIC	3.1.SEQUENTIAL FUNCTION CHART (SFC) 3.2.PRESENTATOIN OF SFC 3.3.TYPES OF (SFC)	3.1. Define Sequential function chart SFC, 3.2. Draw, Label and explain the function of each part of the SFC 3.3. State the different (SFC) and its evolution principles.	2hours	
		From..... to..... Week 13			3.4. viewpoints of SFC	3.4.1.states and explain the different viewpoints of SFC 3.4.2.Explain the basic principles of different working modes(GEMMA) 3.4.3. Design types. of SFC view from a given system part .	2hours	

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SECOND TERM	F O I					3.4.4. write the activation and deactivation equations of SFC 3.4.5. Choose a technology to command an automated system.	
		From..... to..... Week 14	Chap4	Materialization of pneumatic devices	4.1.AIR CONDITIONING UNIT 4.2.SHUT OFF VALVE 4.3 FILTER	4.1.Difine a condition unit 4.2.1.definition 4.2.2.Draw the symbol 4.2.3.construction 4.2.4. Explain the Functioning. 4.3.1.definition 4.3.2.draw the symbol 4.3.3.construction 4.3.4 explain the .functioning	2hours
		From..... to..... Week 15	Chap4		4.4 LUBRICATOR 4.5. PRESSURE REGULATOR	4.4.1.definition 4.4.2.draw the symbol 4.4.3.construction 4.4.4 explain the its functioning 4.5.1.definition 4.5.2.draw the symbol 4.5.3.construction 4.5.4 explain the its functioning	2hours
		From..... to..... Week 16	Chap4		4.6 PRESSURE GAUGE 4.7.AIR DRYER	4.6.1.definition 4.6.2.draw the symbol 4.6.3.construction 4.6.4 explain the its functioning 4.7.1.definition 4.7.2.draw the symbol 4.7.3.construction 4.7.4 explain the its functioning	2hours
		From..... to..... Week 17	THIRD SEQUENCE EVALUATION				2hours
		From..... to.....	Chap-5	SENSORS	5.1.SWITCHES 5.2.LIMIT SWITCHES	5.1.1.Definition 5.1.2.Symbol	

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		Week 18			5.3.PUSH BUTTONS	5.1.3.designation 5.2.1.Definition 5.2.2.Symbol 5.2.3.designation 5.3.1.Definition 5.3.2.Symbol 5.3.3.designation 5.3.4 Realisation.an electrical diagram using switches, Limit switches, and push buttons.	
		From..... to..... Week 19	Chap-6	PRE-ACTUATORS	6.1.CONTACTORS 6.2.DIRECTIONAL CONTROL VALVE	6.1.1.Definition 6.1.2.Symbol 6.1.3.characteristics 6.2.1.Definition 6.2.2.Designation 6.2.3. Explain the Functioning.	2hours
		From..... to..... Week 20	Chap-6	PRE-ACTUATORS	6.3. 2/2WAY VALVE 6.4. 3/2WAY VALVE	6.3.1 symbol 6.3.2. Designation. 6.3.3.construction 6.3.4.functioning 6.4.1 symbol 6.4.2. Designation. 6.4.3.construction 6.4.4.functioning 6.4.5.realisation.of pneumatic circuit with 2/2 way valve and 3/2 way valve	2hours
		From..... to..... Week 21	Chap-6	PRE-ACTUATORS	6.5. 4/2WAY VALVE 6.6. 5/2WAY VALVE	6.5.1 symbol 6.5.2. Designation. 6.5.3.construction 6.5.4.functioning 6.5.5 Realize pneumatic circuit with 4/2 way valve and 5/2 way valves	2hours
	F O U	From..... to.....	Chap-6	PRE-ACTUATORS	6.7. 4/3 WAY VALVE 6.8. 5/3 WAY VALVE	6.7.1 Symbol 6.7.2. Designation.	2hours

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FIFTH SEQUENCE		Week 22			6.9.CIRCUIT	6.7.3.construction 6.7.4.functioning 6.8.1 symbol 6.8.2. Designation. 6.8.3.construction 6.8.4.functioning 6.9. Realize a pneumatic circuit with 4/3 way valve and 5/3 way valves		
		From..... to..... Week 23	FOURTH SEQUENCE EVALUATION					2hours
		From..... to..... Week 24	BREAK (EASTER HOLIDAYS)					
		From..... to..... Week 25	Chap-7	ACTUATORS	7.1.MOTORS 7.2.TYPES OF MOTORS 7.3.CIRCUITS	7.1.1.Difinition 7.1.2.Symbol 7.1.3. Functioning. 7.1.4.Electrical power diagram 7.2.state the different types 7.3.Realize a pneumatic circuit with an electrical motor and a pneumatic motor	2hours	
		From..... to..... Week 26	Chap-7	ACTUATORS	7.3.SINGLE ACTING CYLINDER	7.3.1.symbol 7.3.2.characteristics 7.3.3.construction 7.3.3.principle of functioning 7.3.4. Practical diagram.	2hours	
		From..... to..... Week 27	Chap-7	ACTUATORS	7.4. Double acting cylinder	7.4.1.symbol 7.4.2.characteristics 7.4.3.construction 7.4.3.principle of functioning 7.4.4. Practical diagram.	2hours	
			From.....	Chap-8	OTHER	8.1. AIR COMPRESSOR.	7.4.1.symbol	2hours

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THIRD TERM	SIXTH SEQUENCE	to..... Week 28		PNEUMATIC DEVICES	8.2.SILENCER	7.4.2.characteristics 7.4.3.construction 7.4.3.principle of functioning 8.2.1.Difination 8.2.2.Symbol 7.4.3.principle of functioning 7.4.4. Practical diagram.	
		From..... to..... Week 29	Chap-8	OTHER PNEUMATIC DEVICES	8.3.FLOW RATE CONTROL VALVES 8.4.CHECK VALVES	.3.1.Difination 8.3.2.Symbol 7.3.3.principle of functioning 8.4.1.Difination 8.4.2.Symbol 8.4.3.principle of functioning 8.4.4. Practical diagram.	2hours
		From..... to..... Week 30	FIFTH SEQUENCE EVALUATION				2hours
		From..... to..... Week 31	Chap-9	PNEUMATIC CASCADE SEQUENCER	9.1.introduction 9.2. structure 9.3.definiton 9.4.TYPES OF METERS 9.5.REGISTER 9.6.FLIPFLOP	9.1.brief description of the main parts 9.2.1.draw and label the sequencer 9.3.types of clock signals 9.2.3.function 9.3.1.Defintion 9.4.name deferent types of meters 9.5.1.Difinition 9.5.2 storages mode 9.6.1.definition 9.6.2.Symbols 9.6.3.types of flipfops 9.6.4.principle of operation	2hours
		From..... to..... Week 32		DIDITAL CIRCUITS	9.7.COUNTERS 9.8.ASYNCHRONOUS COUNTERS	9.7.1.description 9.7.2. State deferent types of counter. 9.8.1. Determine the modulus of the counter asynchronous	2hours

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						9.8.2.construction of modulus 2^n Counter. 9.7.3.construction of modulus 2^n Counter. 9.7.4.Draw the chronogram	
		From..... to..... Week 33		DIDITAL CIRCUITS	9.9.MULTIPLEXER 9.10.DEMULTIPLEXER 9.11.ENCODERS 9.12.DECODERS 9.13.CONVERTR	9.9.1.definition 9.9.2.symbol 9.9.3. Principle of operation. 9.10.1. definition 9.10.2.symbol 9.11.3. Principle of operation 9.11.1. definition 9.11.2.symbol 9.11.3. Principle of operation 9.12.1. definition 9.12.2.symbol 9.12.3. Principle of operation 9.13.1. definition 9.13.2.TYPES 9.13.3. Principle of operation	2hours
		From..... to..... Week 34	REVISION				2hours
		From..... to..... Week 35	SIXTH SEQUENCE EVALUATION				2hours
		From..... to..... Week 36	CORRECTION OF SIXTH SEQUENCE EVALUATION				2hours
		From..... to..... Week 37	START OF TERM HOLIDAYS				

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AUTOMATION FOR UPPER SIXTH AM-LV & AM-HD

TERM	SEQ	WEEKS	CHAP	TOPICS	CONTENT/LESSON	SPECIFIC OBJECTIVE	Duration
FIRST TERM	FIRST SEQUENCE	From..... to..... Week1	CHAP-1	1.1.AUTOMATION 1.2.GENELATITIES 1.3 GENERAL STRUCTURE OF THE AUTOMATED SYSTEMS	1.1.syllabuses 1.2.1.defination 1.3. synoptic diagram of automated system	1.1.presentation of the program 1.2. Review of class six work. 1.2.1. Definition of automation /automated systems. 1.3.1.draw the synoptic 1.3.2.explain the functioning of each part 1.3.3.cite the domain of application of automated systems	2hours
		From..... to..... Week	CHAP-2	MICROPROCESSOR/ MICROCONTROLLER	2.1.microprocessor	2.1.1. Introduction: 2.1.2.difinition 2.1.3.characteristics 2.1.4. Draw diagram of a microprocessor base system. 2.1.5. Description of each part of microprocessor base system.	2hours
		From..... to..... Week 3	CHAP-2	MICROPROCESSOR/ MICROCONTROLLER	2.2.types of microprocessor 2.3.Types of register fund in a microprocessor 2.4. Three Main Types Of Microprocessor Languages are. 2.5.calculation of quantities	2.2.state the manufacturer of and their bits 2.3.state the registers and define their functions 2.4. state the main language and their sub-language 2.5.1.determine the number of memory locations 2.5.2. Determine of memory capacity of a microprocessor/microcontroller.	2hours
		From..... to..... Week4	CHAP-2	MICROPROCESSOR/ MICROCONTROLLER	2.6.MICROCONTROLLER	2.6.1.definition/description 2.6.2. comparison between microprocessor and microcontroller	2HOURS
		From..... to.....	CHAP-2	MICROPROCESSOR/ MICROCONTROLLER	2.6.CABLELOGIC/ PROGRAMMABLE LOGIC	2.6.1.intruaction 2.6.2.transistion from cable logic to	2HOURS

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SECOND SEQUENCE		Week 5				programmable logic 2.6.3.comparason between cable logic and programmable logic	
		From..... to..... Week 6	FIRST SEQUENCE VALUATION				
		From..... to..... Week 7	CHAP-3	AUTOMATED SYSTEMS	3.1.FUNCTIONAL DIAGRAM 3.2.LINEAR SEQUENTIAL FUNCTION CHART(SFC)	3.1.1.Draw the functional diagram 3.1.2.Explain the functionality 3.2.1. Draw the SFC view from system part. 3.2.2.write activation and deactivation conditions of the SFC	2HOURS
		From..... to..... Week 8	CHAP-3	AUTOMATED SYSTEMS	3.2.LINEAR SEQUENTIAL FUNCTION CHART(SFC	3.2.3 Draw the SFC view from control part. 3.2.4 Draw the SFC view from operative part. 3.2.5.write activation and deactivation Equations of the SFC	2HOURS
		From..... to..... Week 9	CHAP-3	AUTOMATED SYSTEMS	3.3.SFC WITH REPEAT OF STEPS	3.3.1.Explain the functionality 3.3.2. Draw the SFC view from system part. 3.3.3.write activation and deactivation conditions of the SFC	2HOURS
		From..... to..... Week 10	3.5.SECOND SEQUENCE EVALUATIONS				2HOURS
		From..... to..... Week 11	3.6.CORRECTIONS OF SECOND SEQUENCE VALUATION				2hours
		From..... to.....	BREAK(CHRISTMAS HOLIDAYS)				
		From.....					

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SECOND TERM	THIRD SEQUENCE	to.....					
		From..... to..... Week 12		AUTOMATED SYSTEMS	3.3.SFC WITH REPEAT OF STEPS	3.3.4 Draw the SFC view from control part. 3.3.5 Draw the SFC view from operative part. 3.3.6.write activation and deactivation Equations of the SFC	2HOURS
		From..... to..... Week 13		AUTOMATED SYSTEMS	3.4.SFC SKIP OF STEPS	3.4.1.Explain the functionality 3.4.2. Draw the SFC view from system part. 3.4.3.write activation and deactivation conditions of the SFC	2HOURS
		From..... to..... Week 14		AUTOMATED SYSTEMS	3.4.SFC WITH SKIP OF STEPS	3.4.4 Draw the SFC view from control part. 3.4.5 Draw the SFC view from operative part. 3.4.6.write activation and deactivation Equations of the SFC	2HOURS
		From..... to..... Week 15	CHAP-4	PROGRAMMING	4.1. programmable Logic Controllers(PLC) environment 4.2. Manufacturer 4.3.programmable language	4.1.Description of PLC environment 4.2. Write the Mark of PLC and name of manufacturer. 4.3. state the different programmable PLC languages	2HOURS
		From..... to..... Week 16	CHAP-4	PROGRAMMING	4.2. synoptic diagram of the PLC	4.2.1draw and label the synoptic diagram 4.2.2. State the principle of functioning of each part.	2HOURS
		From..... to..... Week 17	THIRD SEQUENCE EVALUATION				2HOURS
	FOURTH SEQUENCE	From..... to..... Week 18	CHAP-5	PROGRAMMING WITH PLC TSX21PL7-2	5.1.INTRODUCTION 5.2.GRAPHICAL SPECIFICATIONS 5.3.ADDRESSING MODE	5.1.describe the environment of PLC TSX21PL7-2 5.2.draw and explain the symbolic	2hours

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						mean1G of each graphical 5.3. present the addressing range interval of each(steps, inputs and outputs)	
		From..... to..... Week 19		PROGRAMMING WITH PLC TSX21PL7-2	5.4.FROM GIVEN SFC	5.4.1. Assign inputs outputs and the steps. 5.4.2.program the SFC in automaton codes	2hours
		From..... to..... Week 20		PROGRAMMING WITH PLC TSX21PL7-2	5.5.FROM GIVEN SFC	5.5.1.Program lines of transitions between stages: (sequential treatment) 5.5.2. Program lines of actions associated to stages: (posterior treatment)	2hours
		From..... to..... Week 21	CHAP-6	PROGRAMMING WITH PLC SCL100AB	6.1.INTRODUCTION 6.2.ADDRESSING MODE	6.1.Describe the environment of PLC SLC100AB 6.2.Write the range interval of deferent stages addresses(inputs and outputs)	2hours
	FOURTH SEQUENCE	From..... to..... Week 22		PROGRAMMING WITH PLC SCL100AB	6.3. types of instruction	6.3.Describe the different kinds of instructions	2hours
		From..... to..... Week 23	FOURTH SEQUENCE EVALUATION				
	FIFTH SEQUENCE	From..... to..... Week 24	BREAK (EASTER HOLIDAYS)				
		From..... to..... Week 25		PROGRAMMING WITH PLC SCL100AB	6.4.FROM GIVEN SFC	6.4.1. Assign inputs outputs and the steps. 6.4.2.program the SFC in automaton codes	2hours
		From..... to.....		PROGRAMMING WITH PLC	6.5.FROM GIVEN SFC 6.6.simulation	5.5.1.Program lines of transitions between stages: (sequential treatment) 5.5.2. Program lines of actions	2hours

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THIRD TERM		Week 26		SCL100AB		associated to stages: (posterior treatment) 6.6.Enter test and run the program		
		From..... to..... Week 27	CHAP-7	SOFTWARE SIMULATION	7.1.AUTOMGEN	7.1.1. Description of the automgen environment. 7.1.2.Write the range interval of deferent stages addresses(inputs and outputs)	2hours	
		From..... to..... Week 28		SOFTWARE SIMULATION	7.2.FROM GIVEN SFC	7.2.1. Assign inputs outputs and the steps. 7.2.2.program the SFC in automaton codes	2hours	
		From..... to..... Week 29			7.3.FROM GIVEN SFC 7.4.SIMULATION	7.3.1.Program lines of transitions between stages: (sequential treatment) 7.3.2. Program lines of actions associated to stages: (posterior treatment) 7.4. Enter, test and run the program.	2hours	
		From..... to..... Week 30	FIFTH SEQUENCE EVALUATION					2hours
	SIXTH SEQUENCE	From..... to..... Week 31	CHAP-8	FEEDBACK CONTROL SYSTEM	8.1. INTRODUCTION. 8.2.structure of a control systems	81.1. Generalities of control systems. 8.1.2.characteristics of control system 8.2.1. Identify various components of a control system. 8.2.2. Give the structure. 8.2.3.description of a control systems	2hours	
		From..... to..... Week 32		FEEDBACK CONTROL SYSTEM	8.3. TYPES OF FEEDBACK	give the types 8.3.1.determine the polynomial characteristics	2hours	
		From..... to..... Week 33		FEEDBACK CONTROL SYSTEM	8.4. OPEN-LOOP /CLOSE- LOOP.	8.4.1.give the structure 8.4.2. State the transfer function. 8.4.3.state the characteristic polynomial ,characteristic equation,	2hours	

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					determine the roots	
		From..... to..... Week 34	REVISION			2hours
		From..... to..... Week 35	SIXTH SEQUENCE EVALUATION			2hours
		From..... to..... Week 36	CORRECTION OF SIXTH SEQUENCE EVALUATION			2hours
		From..... to..... Week 37	START OF TERM HOLIDAYS			