Sana'a University
Faculty of Engineering
Mechatronics Engineering Department
Mechatronics Engineering Program

Course Specification of
Programmable Logic Controller (PLC)

I. Course Identification and General Information:

1.	Course Title:	Programmable Logic Controller (PLC).				
2.	Course Code & Number:	MT305.				
3.	Credit Hours:	C.H.				TOTAL CR. HRS.
		Th.	Seminar	Pr.	Tu.	
		2	-	2	-	3
4.	Study Level/ Semester at which this Course is offered:	Fourth Year- First Semester.				
5.	Pre –Requisite (if any):	Logic System Design, Electrical Machines (1) , and Industrial Instrumentation and Measurements.				
6.	Co –Requisite (if any):	None.				
7.	Program (s) in which the Course is offered:	Mechatronics Engineering Program.				
8.	Language of Teaching the Course:	English.				
9.	Location of Teaching the Course:	Mechatronics Engineering Department.				
10.	Prepared by:	Eng. Mahran Alabsie.				
11.	Date of Approval:					

II. Course Description:

Programmable Logic Controllers (PLCs) are used in many industrial and commercial processes, so the intent of this course is to have students develop the basic level skills of PLCs required by the industry. The PLC course covers the following topics: classical control, processor units, memory organization, relay type devices, timers, counters, data manipulators, and programming. The study

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of the course includes basic to intermediate theoretical classes as well as practical applications of PLCs in the Lab. Students are required to develop a team-work course-project to demonstrate various abilities intended by the course.

III. Course Intended learning outcomes (CILOs) of the course		Referenced PILOs
a.1	Identify the main hardware devices and software tools of classical control and programmable logic control.	A2
a.2	Describe the different Programmable Logic Controllers (PLCs) functions and characteristics.	A4
b.1	Compare between the programming methods (Function block, ladder diagram, Grafcet) of PLCs and analyze the functions to solve mechatronics system problems.	B1
b.2	Create computer models and programs for monitoring, interfacing and automating industrial processes and applications.	B3
c.1	Implement safely the wiring of classical control and PLC for various automatic applications.	C1
c.2	Demonstrate the appropriate hardware and software components to design standard solutions to practical mechatronics problems.	C5
d.1	Evaluate problem solving skills, teamwork and communication skills during the course activities.	D1
d.2	Examine technical reports, discuss ideas, and justify results creatively through different forms.	D6

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(A) Alignment Course Intended Learning Outcomes of Knowledge and Understanding to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
a1. Identify the main hardware devices and software tools of classical control and programmable logic control.	• Active Lectures. • Tutorials. • Hands-on Laboratory Work. • Group Learning.	• Written Assessments. • Homeworks and Assignments.
a2. Describe the different Programmable Logic Controllers (PLCs) functions and characteristics.	• Active Lectures. • Tutorials. • Group Learning.	• Written Assessments. • Homeworks and Assignments.

(B) Alignment Course Intended Learning Outcomes of Intellectual Skills to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
b1. Compare between the programming methods (Function block, ladder diagram, Grafcet) of PLCs and analyze the functions to solve mechatronics system problems.	• Active Lectures. • Tutorials. • Hands-on Laboratory Work. • Group Learning.	• Written Assessments. • Homeworks and Assignments. • Presentations. • Simulations.
b2. Create computer models and programs for monitoring, interfacing and automating industrial processes and applications.	• Active Lectures. • Tutorials. • Design Work and Projects. • Independent Learning and Work. • Computer and Web-Based Learning.	• Written Assessments. • Homeworks and Assignments. • Case Studies. • Simulations.

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(C) Alignment Course Intended Learning Outcomes of Professional and Practical Skills to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
c1. Implement safely the wiring of classical control and PLC for various automatic applications.	• Hands-on Laboratory Work. • Design Work and Projects.	• Practical Assessment.
c2. Demonstrate the appropriate hardware and software components to design standard solutions to practical mechatronics problems.	• Hands-on Laboratory Work. • Design Work and Projects. • Case Studies.	• Practical Assessment. • Project Reports. • Laboratory Reports.

(D) Alignment Course Intended Learning Outcomes of Transferable Skills to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
d1. Evaluate problem solving skills, teamwork and communication skills during the course activities.	• Group Learning and Problem-Based Learning. • The Use of Communication and Information Technology. • Design Work and Projects.	• Practical Assessment. • Homework and Assignments. • Project Reports.
d2. Examine technical reports, discuss ideas, and justify results creatively through different forms.	• Group Learning and Problem-Based Learning. • Design Work and Projects.	• Presentations. • Project Reports.

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IV. Course Content:

A – Theoretical Aspect:

Order	Units/Topics List	Learning Outcomes	Sub Topics List	Number of Weeks	Contact Hours
1.	Overview of Classical Control Systems.	a1, a2	• Marking of electromechanically circuits. • Control devices Mechanical switches Proximitry switches Contactors and control relay Timers.	1	2
2.	Classical Control Circuits Diagrams and Applications.	a1, a2	• Contactors and overloads. • Ladder diagram. • On / STOP circuit. • Star / Delta motor starting. • Valve Control. • ATS.	2	4
3.	Introduction to PLC.	a1, a2	• PLC in a Control System. • Advantages/disadvantages of PLC • PLC Brands. • DCS Control . • SCADA.	1	2
4.	PLC Hardware Components.	a1, a2, c1, c2	• Basic architecture • Basic Components - CPU - Power Supply - I/O unit - Memory Design and - Addressing - Programming Devices	1	2

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			• Type of I/O Devices • Discrete input/output • Analog input/output • PWM.		
5.	Basic of PLC Programming.	a1, a2, b1, b2	• Program scan. • Programming methods. - Ladder diagram. - Function block. - GRAFSET. • On/Off ladder diagram • Internal relay. • Latching relays.	1	2
6.	Developing Fundamental PLC Wiring Diagrams and Ladder Logic Programs.	b1, b2, c1	• Motor starters • manually operated switches. • Auto operated. • Converting classical control diagrams into PLC ladder programs. • Wiring plc. • Logic operation.	2	4
7.	Mid-Term Exam.	a1, a2, b1, b2, c1,c2	The first 6 chapters.	1	2
8.	PLC Function Programming.	b1, b2, c2, d1	• Timer programming • Timer Instructions • ON-Delay/OFF-Delay • Retentive and non-Retentive Timers • Counter programming	4	8

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			- Counter Instructions. - UP/DOWN Counters. • Shift Register Programming • Arithmetic Instructions. • Data Register.		
9.	Industrial Applications.	b2, c1, c2	• Analog measurements and control. • PWM industrial application. • Mentoring system. • Network example	2	4
10.	Final Exam.	a1, a2, b1, b2, c1,c2	All the chapters.	1	2
Number of Weeks /and Units Per Semester				**16**	**32**

B - Practical Aspect:

Order	Tasks/ Experiments	Number of Weeks	Contact hours	Learning Outcomes
1.	**Practical 1: Classical Control.** • Familiarization with control circuit elements. - push buttons. - Toggle switches - selector switches. - Detection switches - limit switches - Level switches - Sensors (inductive, capacitive, photoelectric, ….)	1	2	c1, c2, d1, d2

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	• Indicator lights (red, green, yellow, … lamps) • Relays • Magnetic contactors • Miniature Circuit breakers • EKTS , Automation Studios and Festo simulation programs for Classical Control			
2.	**Practical 2: Classical Control** • Reading and creating line diagrams • Power and control circuit • Connecting loads and control devices • Motor start, stop, and overload control • Motor control from two places • Three phase motors forward and reverse control • Motor star-delta control • ATS • Timer applications	3	6	a1, b1, c1, c2, d2
3.	**Practical 3: PLC** • Logo- Lovato – S7 programming • Installation. • Using programming console ▪ How to enter program (run/monitor/program mode) ▪ Clear memory ▪ Modify program (insert/delete)	2	4	b1, b2, c1, c2, d1, d2

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	▪ Monitor input/output status • Basic logic + I/O wiring • "And" and "or" control circuit. Holding/latching circuit including stop pushbutton (motor control).			
4.	**Practical 4:** Convert the classical examples to PLC ladder diagram • Motor Control: ▪ Use "set/reset" • forward/reverse motor control • ATS.	2	4	b1, d1, d2
5.	**Practical 5:** Timers Mode (On delay – Off delay – On/off delay – Flasher timer – Weekly timer ……...). • Traffic ligts.Star/ Delta.	1	2	b2, c1, c2, d1, d2
6.	**Practical 6:** • Basic counter application • Basic reversible counter application • Adding counter to the reversing motor control (automatic - latching) with timer. ▪ Garage cars Counter. ▪ Production line counter.	1	2	b1, b2, c1, c2, d1, d2

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7.	**Practical 7:** • Shift register. • Data register. • Multiplexer. • PWM. ▪ Application example.	1	2	b1, b2, c1, c2, d1, d2
8.	**Practical 8:** **Analog input/ output function.** • Temperature sensor calibration and monitoring. Temperature control.	1	2	b1, b2, c1, c2, d1, d2
9.	**<u>Course projects:</u>** **Students are encouraged to choose a PLC project in which he is required to build a prototype, build the necessary PLC program. The following are some examples:** A. Arithmetic Instructions: • Car park control • Advanced car park control B. Analogue output: • Flow control C. Arithmetic and analogue input/output: • Conveyor with a weight detector and variable speed drive D. trouble shooting:	2	4	a1, a2, b1, b2, c1, c2, d1, d2

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	• Trouble shooting PLC-controlled application using a given schematic diagram: electrical power &control, and electro-pneumatic			
Number of Weeks /and Units Per Semester		**14**	**28**	

V. Teaching Strategies of the Course:

The teaching strategies of the course are as follows:

- Active Lectures.
- Tutorials.
- Hands-on Laboratory Work.
- Independent Learning and Work.
- Group Learning and Problem-Based Learning.
- The Use of Communication and Information Technology.
- Design Work and Projects.
- Independent Learning and Work.
- Computer and Web-Based Learning.
- Case Studies.

VI. Assessment Methods of the Course:

The assessment methods of the course are as follows:

- Written Assessments.
- Homeworks and Assignments.
- Presentations.
- Simulations.

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- Case Studies.
- Practical Assessment.
- Project Reports.
- Laboratory Reports.
- Presentations.

VII. Assignments:

Order	Assignments	Aligned CILOs (symbols)	Week Due	Mark
1.	Classical Control Circuits Diagrams and Applications	a1, d2	2	3
2.	PLC Hardware Components and Programming	a2, d2	4	3
3.	PLC Wiring Diagrams and Ladder Logic Programs	c1, d1, d2	8	3
4.	PLC Function Programming	b1, c2, d2	12	3
5.	Industrial Applications	b2, c2, d1, d2	14	3
Total				**15**

VIII. Schedule of Assessment Tasks for Students During the Semester:

Order	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1.	Assignments.	2, 4, 8, 12, 14	15	10%	a1, a2, b1, b2, c1,c2, d1, d2

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2.	Practical Experiments.	Weekly	15	10%	a1, a2, b1, b2, c1,c2, d1, d2
3.	Mid-Term Exam.	9	15	10%	a1, a2, b1, b2, c2
4.	Practical Projects.	12-14	15	10%	a1, a2, b1, b2, c1, c2, d1, d2
5.	Final Exam.	16	90	60%	a1, a2, b1, b2, c2
Total			**150**	**100%**	

IX. Learning Resources:

- Written in the following order: (Author - Year of publication – Title – Edition – Place of publication – Publisher).

1- Required Textbook(s) (maximum two).

1. Frank D. Petruzella, 2011, Programmable Logic Controllers, 4th edition, McGraw-Hill , NY.
2. L.A. Bryan & E.A. Bryan, 2000, Programmable Controllers Theory and Implementation, 2 nd edition, Industrial Text Company, Georgia, USA.

2- Essential References.

1. Colin D. Simpson, 2006, Programmable Logic Controllers, 3 rd edition, Prentice Hall, USA.
2. E. A. Parr, 2003, Programmable Controllers - An Engineer's Guide, 3 rd edition, Newnes, Oxford. 9780750657570
3. John W. Webb and Ronald A. Reiss, 2002, Programmable Logic Controllers - Principle and Applications, 5 th edition, Prentice Hall, N.J., USA.

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	4. JR Hackworth and ED Hackworth, 2004, Programmable Logic Controllers-Programming Method and Applications, Pearson Education, N.J., USA. 5. Frank D. Petruzella, 2011, Programmable Logic Controllers Lab Manual, 4 th edition, McGraw-Hill, N.Y., USA.
3- Electronic Materials and Web Sites *etc*.	
	1. PLC Technician Training Online Education Program https://www.plctechnician.com/ 2. TPC Training https://www.tpctraining.com/collections/plc-training 3. Vast PLC https://www.vastplc.com/

X. Course Policies:

1.	**Class Attendance:** The students should have more than 75 % of attendance according to rules and regulations of the Faculty.
2.	**Tardy:** The students should respect the timing of attending the lectures. They should attend within 10 minutes from starting of the lecture.
3.	**Exam Attendance/Punctuality:** The student should attend the exam on time. The punctuality should be implemented according to rules and regulations of the faculty for mid-term exam and final exam.
4.	**Assignments & Projects:**

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	The assignment is given to the students after each chapter, the student has to submit all the assignments for checking on time.
5.	**Cheating**: If any cheating occurred during the examination, the student is not allowed to continue and he has to face the examination committee for enquires.
6.	**Plagiarism**: The student will be terminated from the Faculty, if one student attend the exam on another behalf according to the policy, rules and regulations of the university.
7.	**Other policies:** • All the teaching materials should be kept out the examination hall. • The mobile phone is not allowed. • There should be a respect between the student and his teacher.

Reviewed By	Vice Dean for Academic Affairs and Post Graduate Studies: Dr. Tarek A. Barakat President of Quality Assurance Unit: Ass. Prof. Dr. Mohammed Algorafi Head of Mechatronics Engineering Department: Ass. Prof. Dr. Abdul-Malik Momin Dr. Hatem Al-Dois
	Deputy Rector for Academic Affairs Dr. Ibrahim AlMutaa Ass. Prof. Dr. Ahmed Mujahed Dr. Munaser Alsubri

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Course Plan of
Programmable Logic Controller (PLC)

I. Information about Faculty Member Responsible for the Course:								
Name of Faculty Member	Eng. Mahran Alabsie	**Office Hours**						
Location& Telephone No.	00967-772764549	**SAT**	**SUN**	**MON**	**TUE**	**WED**	**THU**
E-mail								

II. Course Identification and General Information:						
1.	Course Title:	Programmable Logic Controller (PLC).				
2.	Course Code & Number:	MT305.				
3.	Credit Hours:	C.H.				TOTAL CR. HRS.
		Th.	Seminar	Pr.	Tu.	
		2	-	2	-	3
4.	Study Level/ Semester at which this Course is offered:	Fourth Year- First Semester				
5.	Pre –Requisite (if any):	Logic System Design, Electrical Machines (1) , and Industrial Instrumentation and Measurements.				
6.	Co –Requisite (if any):	None.				
7.	Program (s) in which the Course is offered:	Mechatronics Engineering Program.				
8.	Language of Teaching the Course:	English Language.				

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9.	System of Study:	Semesters.
10.	Mode of Delivery:	Lectures and Labs.
11.	Location of Teaching the Course:	Mechatronics Engineering Department.

III. Course Description:

Programmable Logic Controllers (PLCs) are used in many industrial and commercial processes, so the intent of this course is to have students develop the basic level skills of PLCs required by the industry. The PLC course covers the following topics: classical control, processor units, memory organization, relay type devices, timers, counters, data manipulators, and programming. The study of the course includes basic to intermediate theoretical classes as well as practical applications of PLCs in the Lab. Students are required to develop a team-work course-project to demonstrate various abilities intended by the course.

IV.	Course Intended learning outcomes (CILOs) of the course	Referenced PILOs
a.1	Identify the main hardware devices and software tools of classical control and programmable logic control.	A2
a.2	Describe the different Programmable Logic Controllers (PLCs) functions and characteristics.	A4
b.1	Compare between the programming methods (Function block, ladder diagram, Grafcet) of PLCs and analyze the functions to solve mechatronics system problems.	B1
b.2	Create computer models and programs for monitoring, interfacing and automating industrial processes and applications.	B3

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c.1	Implement safely the wiring of classical control and PLC for various automatic applications.	C1
c.2	Demonstrate the appropriate hardware and software components to design standard solutions to practical mechatronics problems.	C5
d.1	Evaluate problem solving skills, teamwork and communication skills during the course activities.	D1
d.2	Examine technical reports, discuss ideas, and justify results creatively through different forms.	D6

V. Course Content:

A – Theoretical Aspect:

Order	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1.	Overview of Classical Control Systems.	• Marking of electromechanically circuits. • Control devices Mechanical switches Proximitry switches Contactors and control relay Timers.	1	2
2.	Classical Control Circuits Diagrams and Applications.	• Contactors and overloads. • Ladder diagram. • On / STOP circuit. • Star / Delta motor starting. • Valve Control. • ATS.	2,3	4
3.	Introduction to PLC.	• PLC in a Control System. • Advantages/disadvantages of PLC • PLC Brands.	4	2

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		• DCS Control. • SCADA.		
4.	PLC Hardware Components.	• Basic architecture • Basic Components - CPU - Power Supply - I/O unit - Memory Design and - Addressing - Programming Devices • Type of I/O Devices • Discrete input/output • Analog input/output • PWM.	5	2
5.	Basic of PLC Programming.	• Program scan. • Programming methods. - Ladder diagram. - Function block. - GRAFSET. • On/Off ladder diagram • Internal relay. • Latching relays.	6	2
6.	Developing Fundamental PLC Wiring Diagrams and Ladder Logic Programs.	• Motor starters • manually operated switches. • Auto operated. • Converting classical control diagrams into PLC ladder programs. • Wiring plc. • Logic operation.	7,8	4
7.	Mid-Term Exam.	The first 6 chapters.	9	2

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8.	PLC Function Programming.	• Timer programming • Timer Instructions • ON-Delay/OFF-Delay • Retentive and non-Retentive Timers • Counter programming - Counter Instructions. - UP/DOWN Counters. • Shift Register Programming • Arithmetic Instructions. • Data Register.	10,11,12,13	8
9.	Industrial Applications.	• Analog measurements and control. • PWM industrial application. • Mentoring system. • Network example	14,15	4
10.	Final Exam.	All the chapters.	16	2
Number of Weeks /and Units Per Semester			**16**	**32**

B - Practical Aspect:

Order	Tasks/ Experiments	Number of Weeks	Contact hours	Learning Outcomes
1.	**Practical 1: Classical Control.** • Familiarization with control circuit elements. - push buttons. - Toggle switches - selector switches. - Detection switches - limit switches	1	2	c1, c2, d1, d2

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	- Level switches - Sensors (inductive, capacitive, photoelectric, ….) • Indicator lights (red, green, yellow, … lamps) • Relays • Magnetic contactors • Miniature Circuit breakers • EKTS , Automation Studios and Festo simulation programs for Classical Control			
2.	**Practical 2: Classical Control** • Reading and creating line diagrams • Power and control circuit • Connecting loads and control devices • Motor start, stop, and overload control • Motor control from two places • Three phase motors forward and reverse control • Motor star-delta control • ATS • Timer applications	2,3,4	6	a1, b1, c1, c2, d2
3.	**Practical 3: PLC** • Logo- Lovato – S7 programming • Installation. • Using programming console	5,6	4	b1, b2, c1, c2, d1, d2

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	▪ How to enter program (run/monitor/program mode) ▪ Clear memory ▪ Modify program (insert/delete) ▪ Monitor input/output status • Basic logic + I/O wiring • "And" and "or" control circuit. Holding/latching circuit including stop pushbutton (motor control).			
4.	**Practical 4:** Convert the classical examples to PLC ladder diagram • Motor Control: ▪ Use "set/reset" • forward/reverse motor control • ATS.	7,8	4	b1, d1, d2
5.	**Practical 5:** Timers Mode (On delay – Off delay – On/off delay – Flasher timer – Weekly timer ……...). • Traffic ligts.Star/ Delta.	9	2	b2, c1, c2, d1, d2
6.	**Practical 6:** • Basic counter application • Basic reversible counter application • Adding counter to the reversing motor control (automatic - latching) with timer. ▪ Garage cars Counter.	10	2	b1, b2, c1, c2, d1, d2

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	▪ Production line counter.			
7.	**Practical 7:** • Shift register. • Data register. • Multiplexer. • PWM. ▪ Application example.	11	2	b1, b2, c1, c2, d1, d2
8.	**Practical 8:** **Analog input/ output function.** • Temperature sensor calibration and monitoring. Temperature control.	12	2	b1, b2, c1, c2, d1, d2
9.	**<u>Course projects:</u>** **Students are encouraged to choose a PLC project in which he is required to build a prototype, build the necessary PLC program. The following are some examples:** E. Arithmetic Instructions: • Car park control • Advanced car park control F. Analogue output: • Flow control G. Arithmetic and analogue input/output: • Conveyor with a weight detector and variable speed drive	13,14	4	a1, a2, b1, b2, c1, c2, d1, d2

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	H. trouble shooting: • Trouble shooting PLC-controlled application using a given schematic diagram: electrical power &control, and electro-pneumatic			
Number of Weeks /and Units Per Semester		**14**	**28**	

VI. Teaching Strategies of the Course:

The teaching strategies of the course are as follows:

- Active Lectures.
- Tutorials.
- Hands-on Laboratory Work.
- Independent Learning and Work.
- Group Learning and Problem-Based Learning.
- The Use of Communication and Information Technology.
- Design Work and Projects.
- Independent Learning and Work.
- Computer and Web-Based Learning.
- Case Studies.

VII. Assignments:

Order	Assignments	Aligned CILOs (symbols)	Week Due	Mark
1.	Classical Control Circuits Diagrams and Applications	a1, d2	2	3

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2.	PLC Hardware Components and Programming	a2, d2	4	3
3.	PLC Wiring Diagrams and Ladder Logic Programs	c1, d1, d2	8	3
4.	PLC Function Programming	b1, c2, d2	12	3
5.	Industrial Applications	b2, c2, d1, d2	14	3
Total				**15**

VIII. Schedule of Assessment Tasks for Students During the Semester:

Order	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1.	Assignments.	2, 4, 8, 12, 14	15	10%	a1, a2, b1, b2, c1,c2, d1, d2
2.	Practical Experiments.	Weekly	15	10%	a1, a2, b1, b2, c1,c2, d1, d2
3.	Mid-Term Exam.	9	15	10%	a1, a2, b1, b2, c2
4.	Practical Projects.	12-14	15	10%	a1, a2, b1, b2, c1, c2, d1, d2
5.	Final Exam.	16	90	60%	a1, a2, b1, b2, c2
Total			**150**	**100%**	

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IX. Learning Resources:

- Written in the following order: (Author - Year of publication – Title – Edition – Place of publication – Publisher).

1- Required Textbook(s) (maximum two).

1. Frank D. Petruzella, 2011, Programmable Logic Controllers, 4 th edition, McGraw-Hill , NY.
2. L.A. Bryan & E.A. Bryan, 2000, Programmable Controllers Theory and Implementation, 2 nd edition, Industrial Text Company, Georgia, USA.

2- Essential References.

1. Colin D. Simpson, 2006, Programmable Logic Controllers, 3 rd edition, Prentice Hall, USA.
2. E. A. Parr, 2003, Programmable Controllers - An Engineer's Guide, 3 rd edition, Newnes, Oxford. 9780750657570
3. John W. Webb and Ronald A. Reiss, 2002, Programmable Logic Controllers - Principle and Applications, 5 th edition, Prentice Hall, N.J., USA.
4. JR Hackworth and ED Hackworth, 2004, Programmable Logic Controllers- Programming Method and Applications, Pearson Education, N.J., USA.
5. Frank D. Petruzella, 2011, Programmable Logic Controllers Lab Manual, 4 th edition, McGraw-Hill, N.Y., USA.

3- Electronic Materials and Web Sites *etc*.

1. PLC Technician Training Online Education Program
   https://www.plctechnician.com/
2. TPC Training
   https://www.tpctraining.com/collections/plc-training
3. Vast PLC
   https://www.vastplc.com/

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X. Course Policies:

1.	**Class Attendance:** The students should have more than 75 % of attendance according to rules and regulations of the Faculty.
2.	**Tardy:** The students should respect the timing of attending the lectures. They should attend within 10 minutes from starting of the lecture.
3.	**Exam Attendance/Punctuality:** The student should attend the exam on time. The punctuality should be implemented according to rules and regulations of the faculty for mid-term exam and final exam.
4.	**Assignments & Projects:** The assignment is given to the students after each chapter, the student has to submit all the assignments for checking on time.
5.	**Cheating**: If any cheating occurred during the examination, the student is not allowed to continue and he has to face the examination committee for enquires.
6.	**Plagiarism**: The student will be terminated from the Faculty, if one student attend the exam on another behalf according to the policy, rules and regulations of the university.
7.	**Other policies:** • All the teaching materials should be kept out the examination hall. • The mobile phone is not allowed. • There should be a respect between the student and his teacher.

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