

Industrial Automation Mastery Series: Factory I/O Edition

Course Catalogue for UUM

Industrial Automation Mastery Series: Factory I/O Edition (UUM) VS Industrial Applications PLC-AV1 & PLC-AV2 training

Beginner Level

No	UUM Course Title	Course Code
1	Hands-On Introduction to Industrial Automation using Factory I/O	IAM-FIO-01
2	Digital Twin for Beginners: Building a Virtual Factory	IAM-FIO-02
3	PLC Logic Simulation using Factory I/O (No PLC Required)	IAM-FIO-03

ADVANCED PLC APPLICATIONS SYSTEM DESIGN#2

PLC_AV2

(Mastering FACTORY IO Automation Exercises)

- a) Importance of mastering FB Programming in Process Control
- b) Understand standard logic gates in various controls, utilizing timing charts to express movement sequences. Develop logical expressions (formulas) for every actuator.
- c) How to utilize GRAFCET to express sequential controls.
- d) How to use the controlio software (embedded in Facio) to practice FB Programming. with Non-PLC connected.
- e) How to convert the controlio program (created by Facio) to any other industrial PLC FB program, introduction
- f) How to convert the FACIO controlio diagrams to any other PLC Ladder diagrams, introduction.
- g) Progressive difficulties level exercises, Industrial manufacturing machine exercises, program with pure FB programming (controlio diagrams)
- h) No of Exercises: Minimum 8 FACIO standards Virtual Machines task need to be animated according to specific requirements, (INDIVIDUAL exercises & Demo Run, not group work)----- minimum 10 training lessons.
- i) 10 Exercises need 15 lessons.
- j) Examine & Demo Animated machines
- k) With cert endorsed by authorized FACIO software supplier.

4	Understanding Industrial Sensors and Actuators through Simulation (Knowledge and practical skills are embedded within PLC_AV2)	IAM-FIO-04
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- 5 Smart Factory Concepts Made Simple (Factory I/O Workshop)
*(Knowledge and practical skills are embedded within **PLC_AV2**)*

IAM-FIO-
05

Intermediate Level

No	UUM Course Title	Course Code
6	Connecting Factory I/O with Siemens PLC (S7-1200/1500) <i>(Knowledge and practical skills are embedded within PLC_AV1 & PLC_AV2)</i>	IAM-FIO-06
7	PLC Programming and Testing using Factory I/O and TIA Portal <i>(Knowledge and practical skills are embedded within APLC_PLC_AV2)</i>	IAM-FIO-07
8	Designing Automated Production Lines in Virtual Environment <i>(Knowledge and practical skills are embedded within PLC_AV1 & PLC_AV2)</i>	IAM-FIO-08
9	From Wiring to Logic: Complete PLC System Simulation <i>(Knowledge and practical skills are embedded within PLC_AV1 & PLC_AV2)</i>	IAM-FIO-09
ADVANCED PLC APPLICATIONS & SYSTEM DESIGN#1 (Solving Germany Meister Standard scenario Questions)		PLC_AV1
a) Importance of mastering LD Programming in Process Control b) How to develop proper GRAFCET flow c) From GRAFCET, how to develop FB, LD and SFC programming. d) How to convert the PLC FB programming language to other PLC Ladder diagrams, real practice tru 10 exercises. e) Progressive scenario industrial manufacturing machine's exercises, program with REAL PLC software (Siemens S71200 PLC). f) No of Exercises: Minimum 10 Germany HWK standards/ Germany Meister standards exercises with Industrial application scenario tasks need to be completed by EVERY INDIVIDUAL trainees)----- Needs 12 training lessons. g) 15 Exercises need 15 lessons. h) Meister Assessment and examination, marks according to German Siemens programming STD requirements. i) Extra cost needed If need Extra Germany endorsement Certificates.		
10	Integrating Factory I/O with HMI and SCADA Systems	IAM-FIO-10

Advanced Level

No	UUM Course Title	Course Code
11	PLC Troubleshooting and Fault Simulation with Factory I/O <i>(Knowledge and practical skills are embedded within PLC_AV1 & PLC_AV2)</i>	IAM-FIO-11
12	Advanced Control Logic Optimization using Factory I/O <i>(Knowledge and practical skills are embedded within PLC_AV1 & PLC_AV2)</i>	IAM-FIO-12
13	Developing a Virtual Smart Factory Project (Team Challenge) <i>(Knowledge and practical skills are embedded within PLC_AV1 & PLC_AV2)</i>	IAM-FIO-13
14	Factory I/O Integration with IoT and Data Analytics	IAM-FIO-14
15	Human–Machine Collaboration in Smart Factory Simulation <i>(Knowledge and practical skills are embedded within PLC_AV1 & PLC_AV2)</i>	IAM-FIO-15

Professional / Industry 4.0 Level

No	UUM Course Title	Course Code
16	Implementing Industry 4.0 Concepts using Factory I/O and PLC Cloud	IAM-FIO-16
17	Virtual Commissioning and Testing of Automated Lines <i>(Knowledge and practical skills are embedded within PLC_AV1 & PLC_AV2)</i>	IAM-FIO-17
18	Teaching Automation Remotely with Factory I/O (Lecturer Edition)	IAM-FIO-18
19	Building Mechatronic Systems with Factory I/O and Arduino/IoT	IAM-FIO-19
20	Energy Efficiency and Automation Simulation Workshop	IAM-FIO-20
