

# Automation

## Module Information

2022.01, Approved

### Summary Information

Module Code	6300ELE
Formal Module Title	Automation
Owning School	Engineering
Career	Undergraduate
Credits	10
Academic level	FHEQ Level 6
Grading Schema	40

### Teaching Responsibility

LJMU Schools involved in Delivery
Engineering

### Learning Methods

Learning Method Type	Hours
Lecture	11
Practical	22

### Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-CTY	CTY	September	12 Weeks

### Aims and Outcomes

Aims	To develop the students' knowledge and understanding of automation systems used in manufacturing and process industries
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**After completing the module the student should be able to:**

## Learning Outcomes

Code	Number	Description
MLO1	1	Evaluate the differences between the various types of programmable logic controllers (PLC) to choose an appropriate device for an application
MLO2	2	Produce PLC programs using ladder logic
MLO3	3	Produce PLC programs using sequential function charts
MLO4	4	Select appropriate external devices and integrate them into a PLC based industrial automation system

## Module Content

Outline Syllabus	Programmable Logic Controller systems. Programming with IEC 61131-3 standards – ladder diagram (LD), function block (FBD) and sequential function chart (SFC) programming. Designing sequential systems using a State Machine paradigm. PLC input/output considerations. Integration of proximity sensors, fail safe sensors, flow, pressure, level and temperature measurement sensors, linear and rotary valve positioners, code reading sensors.
Module Overview	This module will develop your knowledge and understanding of automation systems used in manufacturing and process industries.
Additional Information	On completion of the module the student should be able to design and implement automation systems for a range of industrial applications from factory automation to process control.

## Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Portfolio	Portfolio of Evidence	100	0	MLO1, MLO2, MLO3, MLO4

## Module Contacts

### Module Leader

Contact Name	Applies to all offerings	Offerings
Clifford Mayhew	Yes	N/A

### Partner Module Team

Contact Name	Applies to all offerings	Offerings
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