

Module Information

2022.01, Approved

Summary Information

Module Code	4504ICBTME
Formal Module Title	Instrumentation and Control Systems
Owning School	Engineering
Career	Undergraduate
Credits	15
Academic level	FHEQ Level 4
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

Partner Teaching Institution

Institution Name
International College of Business and Technology

Learning Methods

Learning Method Type	Hours
Lecture	45
Practical	9
Tutorial	15

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
APR-PAR	PAR	April	12 Weeks

JAN-PAR	PAR	January	12 Weeks
SEP_NS-PAR	PAR	September (Non-standard start date)	12 Weeks

Aims and Outcomes

Aims	This unit introduces the students to control systems and industrial automation. This unit will aim to provide understanding of a range of control systems that are used in industrial and domestic environments and enable them to produce specifications for mechatronic products thereby obtaining the ability to design and implement simple automated systems in industrial context.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Identify the instrumentation systems and regulating units.
MLO2	2	Demonstrate an understanding of the process control concepts, systems and controllers.
MLO3	3	Solve problems related to block diagrams, system mathematical modelling, time response, PID, S plane.
MLO4	4	Demonstrate the knowledge of application for control systems using software simulation.

Module Content

Outline Syllabus	Introduction to control systems and automation Actuators and sensors in control systems Open loop and closed loop (feedback) systems Solutions in Laplace domain and time domain First and second order systems State space and Feedback loop architecture Transient response Limitations on performance of control systems
Module Overview	
Additional Information	

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Report	Coursework	30	0	MLO2, MLO4
Exam	Exam	70	2	MLO1, MLO3

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Karl Jones	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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