

Summary Information

Module Code	5507NCCG
Formal Module Title	Robotics
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 5
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

Partner Teaching Institution

Institution Name
Nelson and Colne College Group

Learning Methods

Learning Method Type	Hours
Lecture	48
Practical	12

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

Aims and Outcomes

Aims	This module will develop students' understanding of the operation and control of industrial robots and will give them the knowledge and skills needed to work safely when designing, working with and producing programs for robots and or robot work cells. The module will cover robot control systems and the different types of sensors, drive systems and end effectors used and their application when used as part of an industrial robot production systems. Students will gain an understanding of the programming methods used and will be involved in applying a range of mechatronics technologies for the design, development, and control of advanced robots. The module will also give learners an understanding of the health and safety and maintenance requirements associated with modern industrial robots.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Demonstrate an understanding of sensor motor coordination and apply the concept to robotics
MLO2	2	Develop a system to control a simple robot arm, being aware of the kinematic aspects.
MLO3	3	Navigate a simple mobile robot using appropriate software.
MLO4	4	Select, adapt, and apply a range of mechatronics technologies for the design, development, and control of advanced robots.

Module Content

Outline Syllabus	Types of robots: mobile robotics, tools and end effectors, programming methods, robot manipulators (kinematics, design, dynamics and control, vision systems, user interfaces) Safety: Cell safety features Operating envelope Operational modes User interfaces Robot arm control system design
Module Overview	
Additional Information	

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Report	Assignment	100	0	MLO1
Competency	NCC Group Pass/Fail			MLO2, MLO3

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Christian Matthews	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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