Fluid Mechanics

Module Information

2022.01, Approved

Summary Information

Module Code	4507NCCG
Formal Module Title	Fluid Mechanics
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 4
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 introduces students to the fluid mechanics techniques used in mechanical engineering. The hydraulic devices and systems that incorporate the transmission of hydraulic pressure and forces exerted by a static fluid on immersed surfaces. Topics included in this module are: pressure and force, submerged surfaces, fluid flow theory, aerodynamics, and hydraulic machinery.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Determine the behavioural characteristics of static fluid systems.
MLO2	2	Examine the operating principles and limitations of viscosity measuring devices.
MLO3	3	Investigate the behaviours of different types of fluid flow including laminar and turbulent flow, and Newtonian and non-Newtonian fluids.

Module Content

Outline Syllabus	Pressure and force: Pascal's laws, measurement of pressure, hydraulic devicesSubmerged surfaces: thrust, centre of pressure, moments of area and parallel axis theoremViscosity: dynamic and kinematic, Newtonian and non-Newtonian fluids, effect of temperature, measurement of viscosityFluid flow: Bernoulli's equation, laminar and turbulent flow, Reynolds number, head loss in pipelines, drag on surfacesHydraulic machines: turbines, reciprocating machines
Module Overview	
Additional Information	

Assessments

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

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