

Fluid Mechanics 2

Module Code:	MAE5004-A
Academic Year:	2018-19
Credit Rating:	10
School:	Department of Mechanical and Energy Systems Engineering
Subject Area:	Mechanical and Automotive Engineering
FHEQ Level:	FHEQ Level 5
Module Leader:	Professor Tim Gough

Additional Tutors:

Pre-requisites:

Co-requisites:

Contact Hours

Type	Hours
Lectures	24
Tutorials	12
Laboratory	3
Directed Study	59
Examinations DO NOT USE	2

Availability Periods

Occurrence	Location/Period
IPA	INTI International College, Penang / Semester 1 (Sep - Jan)
IPA	INTI International College, Penang / Semester 2 (Feb - May)
IPA	INTI International College, Penang / Semester 3 (June - Oct)
IIA	INTI International University / Semester 1 (Sep - Jan)
INA	INTI International University, Nilai / Semester 1 (Sep - Jan)
INA	INTI International University, Nilai / Semester 2 (Feb - May)
INA	INTI International University, Nilai / Semester 3 (June - Oct)
MSA	Management Development Institute of Singapore (MDIS) / Semester 1

Module Aims

To examine the principles of fluid flow, with an emphasis on the analysis of flows that are common in engineering fields.

Outline Syllabus

- (1) Understanding of fundamental principles: Flow acceleration, continuity and energy equations and their applications;
- (2) Reynolds number and head losses in real flows;
- (3) Features of laminar and turbulent flows in pipes and conduits with velocity profiles, pressure drops, friction factors and Moody diagram;
- (4) Pipe systems including pipes in series, pipes in parallels and branching pipelines;
- (5) Pipe connections with pumps and siphons;
- (6) Introduction to the no slip condition and the boundary layer;
- (7) Momentum equation and fluid force on structures.

Module Learning Outcomes

On successful completion of this module, students will be able to...

- 1 Understand and review fluid flow and principles, and examine, and quantify, their applications to common engineering fields across the programmes of Mechanical, Civil and Chemical Engineering.
- 2 Interpret and justify laboratory experimental data by using available information and propose solutions to problems arising from that analysis.
- 3 N/A

Learning, Teaching and Assessment Strategy

Theoretical understanding and problem solving through large lectures, staff-led tutorial/example class and directed study, practical skills of data interpretation and justification gained from laboratory sessions, assessed by examination.

Mode of Assessment

Type	Method	Description	Length	Weighting	Final Assess'
Summative	Examination - closed book	Examination - closed book	2 hours	100%	Yes

Legacy Code (if applicable)

ENG2038M

Reading List

To view Reading List, please go to [rebus:list](#).