

CIVL 2004 FLUID MECHANICS (WSTC ASSOCD)

Credit Points 10

Legacy Code 700111

Coordinator Abbas Ranjbar ([https://directory.westernsydney.edu.au/search/name/Abbas Ranjbar/](https://directory.westernsydney.edu.au/search/name/Abbas%20Ranjbar/))

Description The subject provides a basic understanding of fluid mechanics principles. While the main focus will remain on incompressible fluids, effects of compressible fluids will also be discussed. The theories learned in classes will be reinforced in laboratory sessions. Offerings of alternate subjects are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate subject.

School Eng, Design & Built Env

Discipline Other Engineering And Related Technologies

Student Contribution Band HECS Band 2 10cp

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 2 subject

Pre-requisite(s) MATH 1017 AND ENGR 1012

Equivalent Subjects CIVL 2003 - Fluid Mechanics

Restrictions Students must be enrolled in 7022 Associate Degree in Engineering

Assumed Knowledge

700102 - Mathematics for Engineers 2.

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Apply concepts of statics, kinematics and dynamics of fluids to solve water related engineering problems
2. Estimate flow through basic pipes and open channels
3. Analyse and design basic pipes and open-channels

Subject Content

Fluid properties

Fluid statics

Fluid kinematics

Types of flow

Continuity, momentum and energy principles

Dimensional analysis

Flow measurements, such as using plate orifices, venturi meters, semi-venturi meters

Surface resistance

Form resistance

Basic pipe flow

Basic open channel flow principles

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are

regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/ Group Task	Mandatory
Quiz	5 x 20 minutes = 100 minutes	15	N	Individual	N
Practical	2 x 1,000 words each report	20	N	Group/ Individual	N
Intra-session Exam	1 hour + 30 minutes for online submission	15	N	Individual	N
End-of-session Exam	Part 1: 2 hours + 30 minutes for online submission Part 2: 20 minutes per student	50	Y	Individual	Y

Prescribed Texts

- Elger, DF 2013. Engineering fluid mechanics, 10th edn, Wiley, Hoboken, NJ.

Teaching Periods

Quarter 4 (2025)

Penrith (Kingswood)

Hybrid

Subject Contact Abbas Ranjbar ([https://directory.westernsydney.edu.au/search/name/Abbas Ranjbar/](https://directory.westernsydney.edu.au/search/name/Abbas%20Ranjbar/))

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=CIVL2004_25-Q4_KW_3#subjects)