

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 unit 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 units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

School Eng, Design & Built Env

Discipline Other Engineering And Related Technologies

Student Contribution Band HECS Band 2 10cp

Check your HECS Band contribution amount 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.

| Item | Length | Percent | Threshold | Individual/Group Task |
|--|---|---------|-----------|---------------------------|
| Lab Reports x2 | 2 x 1,000 words each report | 20 | N | Both (Individual & Group) |
| Online Quizzes x5 | 5 x 20 minutes = 100 minutes | 15 | N | Individual |
| Intra-session exam | 1 hour + 30 minutes for online submission | 15 | N | Individual |
| End of session exam in parts: Part 1: written - problem solving/short answer Part 2: Viva Voce | Part 1: 2 hours + 30 minutes for online submission Part 2: 20 minutes per student | 50 | Y | Individual |

Prescribed Texts

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

Teaching Periods

Quarter 4

Nirimba Education Precinct

Composite

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/even/timetable/?subject_code=CIVL2004_22-Q4_BL_C#subjects)