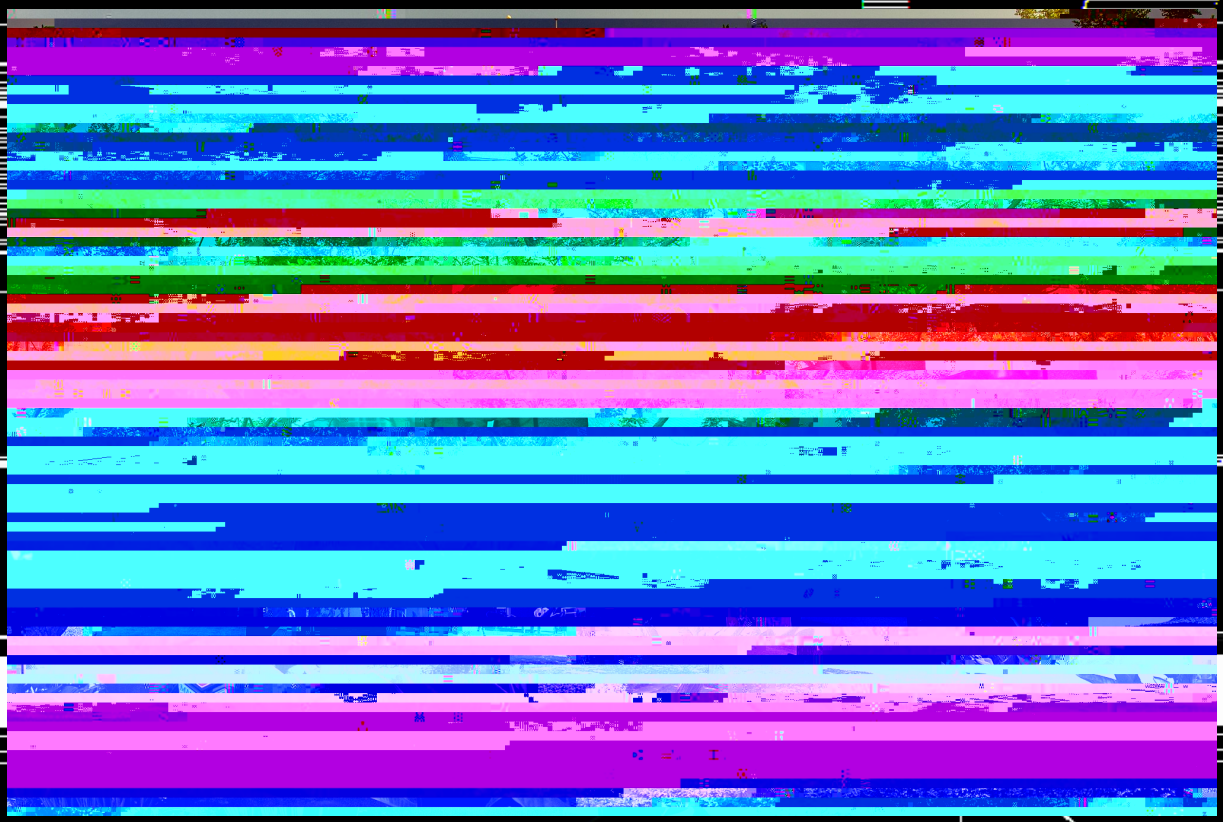
CVEN9611

Urban Hydrology and Stormwater Management

Term 1, 2022



Course Overview

Staff Contact Details

Convenors

Name	Email	Availability	Location	Phone
Fiona Johnson	f.johnson@unsw.edu.au	By appointment	CE309	9385 9769

Lecturers

Name	Email	Availability	Location	Phone
Stefan Felder	s.felder@unsw.edu.au	By appointment	CE303 and Manly Vale Water Research Laboratory	8071 9861
Kefeng Zhang	kefeng.zhang@unsw.edu.au	By appointment	Vallentine Annex, Building H22, Level 1, Room VA 139	9385 5227
Veljko Prodanovic	v.prodanovic@unsw.edu.au	By appointment	Vallentine Annexe (H22), Level 1, Room VA 139	9385 4368

School Contact Information

Engineering Student Support Services – The Nucleus - enrolment, progression checks, clash requests, course issues or program-related queries

Engineering Industrial Training – Industrial training questions

UNSW Study Abroad – study abroad student enquiries (for inbound students)

UNSW Exchange – student exchange enquiries (for inbound students)

UNSW Future Students – potential student enquiries e.g. admissions, fees, programs, credit transfer

Phone

(+61 2) 9385 8500 – Nucleus Student Hub

(+61 2) 9385 7661 – Engineering Industrial Training

Course Details

Units of Credit 6

Summary of the Course

This course considers human impacts on the hydrological cycle and how these can be quantified, designed for and mitigated. The course covers the impacts of urban development on stormwater quantity and quality, hydraulic calculations, management of urban stormwater including re-use and the design of stormwater quantity and quality management structures, including Water Sensitive Urban Design philosophies.

Course Aims

The objectives of this course are:

1. To provide an overview of urban hydrology and stormwater management. Included in the course are an introduction to human impacts on the hydrological cycle, anthropogenic influences on the quantity and quality of stormwater runoff from urban catchments, development of stormwater management plans, and case studies in urban stormwater management. Application of the continuity, energy and momentum principles to the analysis of flows in different scenarios.

2. To characterise the most important types of stormwater structures used in urban drainage systems. Methods for their design as well as current issues in stormwater management are presented and discussed.

Course Learning Outcomes

After successfully completing this course, you should be able to:

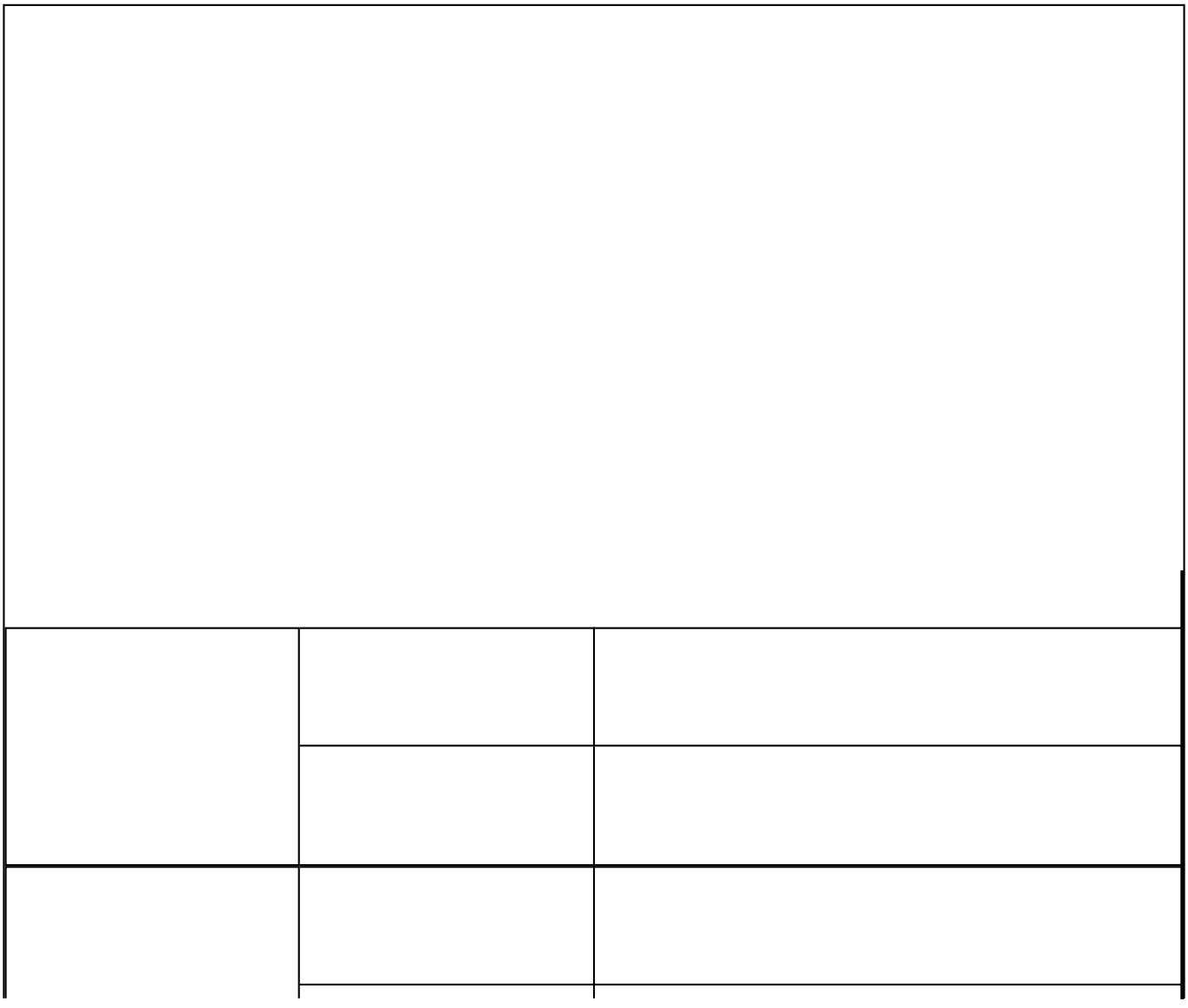
Learning Outcome	EA Stage 1 Competencies
1. Gain an overview of urban hydrology and stormwater management	PE1.1, PE1.3, PE1.4
2. Understand the anthropogenic influences on the quantity and quality of stormwater runoff from urban catchments	PE1.1, PE1.3, PE1.4
3. Be able to quantify flows from urban catchments	PE2.2, PE2.1
4. Be able to develop stormwater management plans	PE1.5, PE1.6
5. Be able to conduct case studies in urban stormwater management	PE3.1, PE3.2
6. Apply continuity, energy and momentum principles to the analysis of flows in stormwater scenarios.	PE1.2, PE1.3, PE1.5
7. Be able to characterise and design the most important types of stormwater structures used in urban drainage systems	PE1.5, PE2.3

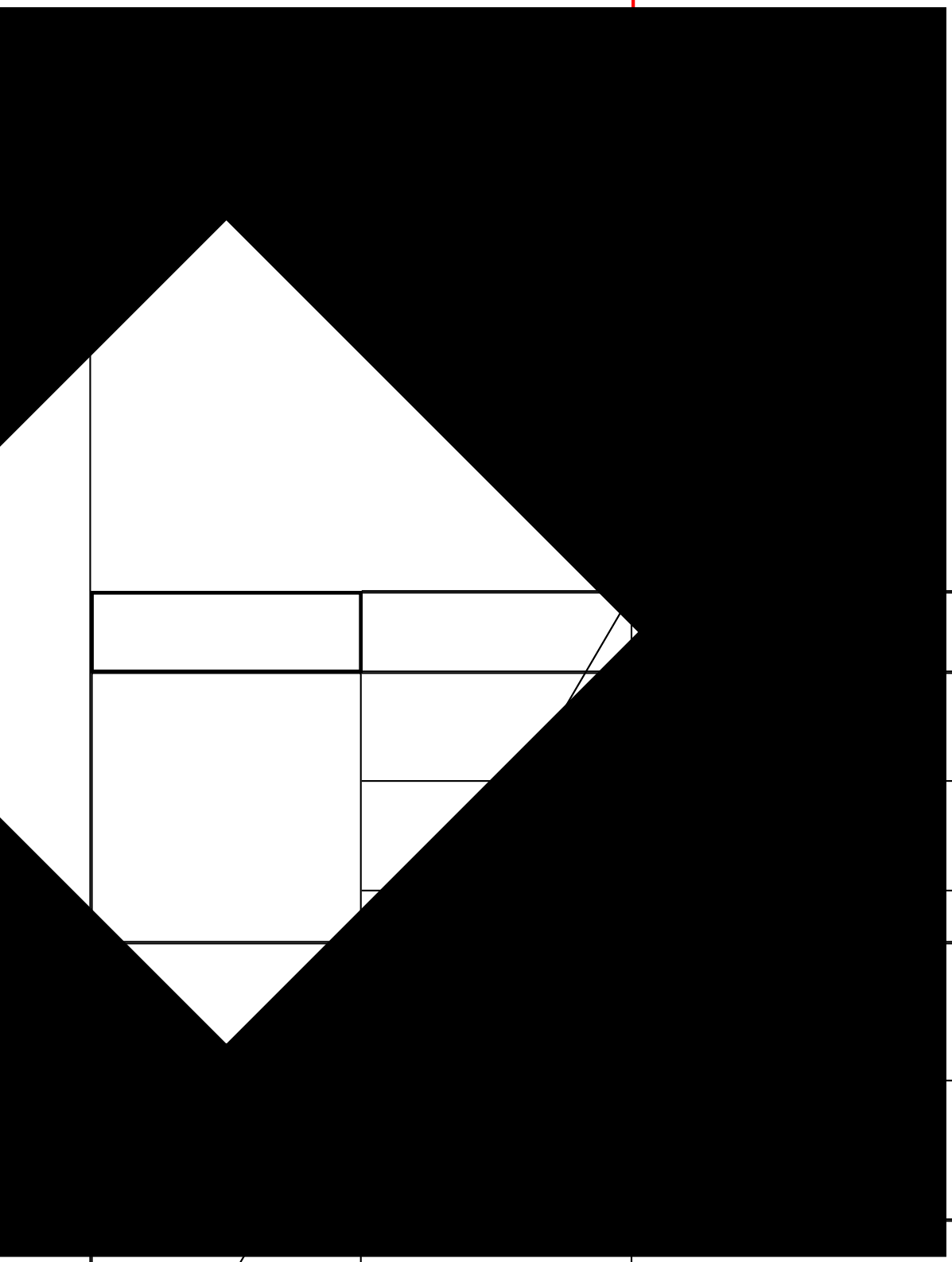
Assessment

Assessment task	Weight	Due Date	Course Learning Outcomes Assessed
1. Assignment 1 - hydrological modelling	15%	10/03/2022 05:00 PM	1, 2, 3, 4, 5
2. Assignment 2 - Hydraulic structures	15%	01/04/2022 05:00 PM	

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

Assessment 4: Final exam





Lecturer: SF

Lecture

Students attending the course in person will visit the H20 Civil and Environmental Engineering water laboratory for the culvert hydraulics demonstration in Week 4. Students will need to wear closed shoes to enter the laboratories. Further details will be provided prior to the laboratory visit.

Submission of Assessment Tasks

Please refer to the Moodle page of the course for further guidance on assessment submission.

UNSW has a standard late submission penalty of:

- 5% per day, for all assessments where a penalty applies, capped at five days (120 hours), after which a student cannot submit an assessment, and no permitted variation.

Academic Honesty and Plagiarism

Beware! An assignment that includes plagiarised material will receive a 0% Fail, and students who plagiarise may fail the course. Students who plagiarise are also liable to disciplinary action, including exclusion from enrolment.

Plagiarism is the use of another person’s work or ideas as if they were your own. When it is necessary or desirable to use other people’s material you should adequately acknowledge whose words or ideas they

Academic Information

Final Examinations:

Final exams in T1 2022 will be held online between 29th April - 12th May inclusive, and supplementary exams between 23rd - 27th May inclusive. You are required to be available on these dates. Please do not to make any personal or travel arrangements during this period.

ACADEMIC ADVICE

- Key Staff to Contact for Academic Advice (log in with your zID and password): https://intranet.civeng.unsw.edu.au/key-staff-to-contact-during-your-studies-at-unsw
- Key UNSW Dates - eg. Census Date, exam dates, last day to drop a course without academic/financial liability etc.
- CVEN Student Intranet (log in with your zID and password): https://intranet.civeng.unsw.edu.au/student-intranet
- Student Life at CVEN, including Student Societies: https://www.unsw.edu.au/engineering/civil-and-environmental-engineering/student-life
- Special Consideration: https://student.unsw.edu.au/special-consideration

Appendix: Engineers Australia (EA) Professional Engineer Competency Standard

Program Intended Learning Outcomes	