CIVL 4017 SURFACE WATER HYDROLOGY

Credit Points 10

Legacy Code 301329

Coordinator Surendra Shrestha (https://directory.westernsydney.edu.au/search/name/Surendra Shrestha/)

Description Surface water hydrology covers the principles of hydrology as it pertains to surface water component of the hydrologic cycle. The principal focus is on the relationship between rainfall and surface runoff. The extent of flooding resulting from storm events will be evaluated through floodplain delineation process. Successful completion of this subject provides the competencies required to propose sustainable engineering solutions to potential adverse impacts of land-use changes. This subject builds on the hydraulic concepts acquired from the subjects completed earlier.

School Eng, Design & Built Env

Discipline Water and Sanitary Engineering

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 4 subject

Pre-requisite(s) CIVL 3011

Equivalent Subjects CIVL 4007 - Hydrology EART 4001 - Surface Water Hydrology

Assumed Knowledge

Students need working knowledge of spreadsheet software, for example Microsoft Excel.

Learning Outcomes

On successful completion of this subject, students should be able to:
1. Identify all components of the hydrologic cycle
2. Perform hydrologic analysis of catchments
3. Design retention and detention basins incorporating appropriate hydraulic structures and evaluate their effectiveness
4. Apply statistical techniques to forecast future hydrologic events
5. Formulate and execute surface water hydrology software packages to simulate catchment response
6. Delineate extent of flooding using appropriate hydraulic software packages
7. Propose sustainable solutions to address adverse impacts of land development
8. Effectively work in a team environment

Subject Content

Hydrologic principles
Hydrologic analysis
Frequency analysis
Flood routing
Hydrologic simulation models
Urban hydrology
Floodplain hydraulics
Design applications in hydrology

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
Report	500 word per student	10	N	Group
Intra-session Exam	1 hour	20	N	Individual
Report	approx. 1000 words per student (includes improvements to 500 words per student from Progress Report 1)	10	N	Group
Applied Project	1,500 words per student (approx)	20	N	Group
Final Exam	2 hours	40	Y	Individual

Prescribed Texts

- Bedient, PB, Huber WC & Vieux BE 2019, Hydrology and floodplain analysis, 6th edn, Pearson, Upper Saddle River, NJ.

Teaching Periods

Autumn (2024)
Penrith (Kingswood)
On-site
Subject Contact Surendra Shrestha (https://directory.westernsydney.edu.au/search/name/Surendra Shrestha/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=CIVL4017_24-AUT_KW_1#subjects)

Parramatta City - Macquarie St
On-site
Subject Contact Surendra Shrestha (https://directory.westernsydney.edu.au/search/name/Surendra Shrestha/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=CIVL4017_24-AUT_PC_1#subjects)

Sydney City Campus - Term 2 (2024)
Sydney City
On-site
Subject Contact Surendra Shrestha (https://directory.westernsydney.edu.au/search/name/Surendra Shrestha/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=CIVL4017_24-SC2_SC_1#subjects)