CIVL 1003 SURVEYING FOR ENGINEERS (WSTC ASSOCD)

Credit Points 10

Legacy Code 700120

Coordinator Abbas Ranjbar (https://directory.westernsydney.edu.au/search/name/Abbas Ranjbar/)

Description This subject provides students with basic skills that are required to carry out surveying. After the completion of this subject, students will be able to carry out required preliminary surveying for most of the civil and construction engineering projects. 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.0

School Eng, Design & Built Env

Discipline Civil 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 1 subject

Equivalent Subjects CIVL 1001 - Surveying for Engineers

Restrictions

Students must be enrolled in 7022 Associate Degree in Engineering

Learning Outcomes

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

1. Explain the terminology, instruments, datum, maps and coordinate systems; operate, record and reduce observations made using current industry standard surveying equipment.
2. Develop contour and building site maps.
3. Operate, record and adjust angular observations made with current industry standard surveying equipment; use a tape to measure slope distances and to reduce linear observations to the horizontal; to adjust a combination of these angular and linear observations to provide coordinates of the traverse points used.
4. Estimate errors in engineering surveying and apply necessary adjustments.
5. Compute cross-sectional areas and volumes for channels and embankments; prepare mass-haul diagrams.
6. Prepare diagrams and compute parameters for the setting out of the centrelines of roads or railways where horizontal circular and transition curves are to be placed or where a vertical curve is to be placed.
7. Describe the relationship between global positioning system (GPS), spatial information systems (SIS) and surveying.
8. Work cooperatively in a team to complete field work, data reduction and analysis and for report writing.

Subject Content

1. Errors and accuracies to millimetre tolerances
2. Levelling traverses and height datums
3. Angle and distance traversing, including closures and adjustment of errors in closed traverses
4. Feature surveys, including coordinate systems and map projections
5. Computations of cross-sectional areas and basic volumes for cuttings or embankments for roads or railways
6. Calculation and presentation of mass-haul diagrams
7. The design and setting out parameters for the centrelines of horizontal circular and transition curves and for vertical curves for roads and railways
8. Accuracies required for the building set-out and equipment tolerances
9. Introduction to Geographic/Spatial Information Systems (GIS/SIS) including satellite positioning sources (GNSS) and their use in many engineering contexts

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 20minutes =100 minutes	30	N	Individual	N
Practical	20 pages (team)\n6 hours	20	N	Group	N
End-of-session Exam	Part 1: 2 hours + 30 min for online submission \nPart 2: 20 minutes per student	50	Y	Individual	Y

Prescribed Texts

- Uren, J. & Price, W. 2010. Surveying for Engineers. 5th Ed. Palgrave Macmillan. OR
- Bannister, A., Raymond, S. & Baker, R. 1998. Surveying. 7th Ed. Prentice-Hall.

Teaching Periods

Quarter 4 (2025)
Penrith (Kingswood)
Hybrid
Subject Contact Abbas Ranjbar (https://directory.westernsydney.edu.au/search/name/Abbas Ranjbar/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=CIVL1003_25-Q4_KW_3#subjects)