CIVL 7004 ADVANCED HIGHWAY INFRASTRUCTURE

Credit Points 10

Legacy Code 301011

Coordinator Chin Leo (https://directory.westernsydney.edu.au/search/name/Chin Leo/)

Description This unit teaches pavement design and ground engineering design as part of construction of the highway. The aim is to provide students with advanced knowledge in designing pavement structures and ground improvement techniques to deal with soft and weak grounds for construction of highway and highway embankments. These aspects will be taught in relation to Australian practices.

School Eng, Design & Built Env

Discipline Construction Engineering

Student Contribution Band HECS Band 2 10cp

Level Postgraduate Coursework Level 7 subject

Restrictions

Students must be enrolled in a postgraduate program.

Assumed Knowledge

Soil mechanics at undergraduate level.

Learning Outcomes

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

1. Apply principles of mechanics in pavement design.
2. Analyse soil principles for ground engineering and embankment design.
3. Evaluate soil properties and soil test data in geotechnical analysis and design.
4. Design highway infrastructures integrating relevant engineering principles using engineering software and Australian practices.
5. Collaborate with people from diverse backgrounds, both specialist and non-specialist, to achieve objectives of tasks.
6. Communicate analyses and recommendations in a formal report using appropriate technical and diagrammatic specifications.
7. Demonstrate ethical professional practice in all activities of the subject.

Subject Content

Pavement Design Module:
1. Asphalt mix design
2. Flexible pavement design
3. Rigid pavement design
Highway Embankment and ground improvement Module:
1. Soft soil remediation
2. Ground improvement techniques
3. Earth fills and retaining structures

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
Participation	2 hours	10	N	Individual
Applied Project	25 pages (major report) and 15 pages (minor report)	50	N	Group
Numerical Problem Solving	1 hour (per quiz)	40	N	Individual

Teaching Periods

Autumn

Parramatta City - Macquarie St

Day

Subject Contact Chin Leo (https://directory.westernsydney.edu.au/search/name/Chin Leo/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=CIVL7004_22-AUT_PC_D#subjects)