ENGR 2016 PAVEMENT MATERIALS AND DESIGN

Credit Points 10

Legacy Code 300984

Coordinator Qinghua Zeng (https://directory.westernsydney.edu.au/search/name/Qinghua Zeng/)

Description This subject will provide students the basic knowledge and concepts on pavement materials and design. It will cover the common materials used in pavement construction such as aggregates, cement, asphalt, and concrete. It will also cover the pavement design system, pavement construction, design of flexible pavements, design of rigid pavements, and pavement maintenance.

School Eng, Design & Built Env

Discipline Transport 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 2 subject

Pre-requisite(s) ENGR 1008 or PROC 1008

Equivalent Subjects ENGR 1007 - Engineering Geology and Concrete Materials ENGR 2017 - Pavement Materials and Design

Learning Outcomes

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

1. Describe the properties and manufacture of pavement materials;
2. Design asphalt mix and concrete mix;
3. Evaluate and select the pavement materials for specific pavement construction;
4. Explain the pavement design system;
5. Apply the basic principles to the structural design and construction of flexible and rigid pavements;
6. Conduct pavement evaluation and describe the pavement maintenance practices.

Subject Content

1. Pavement materials and their selection
2. Granular materials: role and function, behaviour, production, properties, and tests for quality
3. Asphalt: mix types, materials selection, mix design, manufacture, and paving
4. Cement: composition, hydration, and properties
5. Concrete: materials selection, mix design, and steel reinforcement materials
6. Pavement design system
7. Design of flexible pavements
8. Design of rigid pavements
9. Pavement construction
10. Maintenance of pavement

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
Self-Assessment	1 Hour	5	N	Individual	N
Practical	2 hours	20	N	Individual	N
Quiz	1 hour	40	N	Individual	N
Final Exam	2 hours	35	N	Individual	N

Teaching Periods

Sydney City Campus - Term 2 (2025)

Sydney City

On-site

Subject Contact Eileen An (https://directory.westernsydney.edu.au/search/name/Eileen An/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=ENGR2016_25-SC2_SC_1#subjects)

Spring (2025)

Penrith (Kingswood)

Hybrid

Subject Contact Qinghua Zeng (https://directory.westernsydney.edu.au/search/name/Qinghua Zeng/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=ENGR2016_25-SPR_KW_3#subjects)

Parramatta City - Macquarie St

Hybrid

Subject Contact Qinghua Zeng (https://directory.westernsydney.edu.au/search/name/Qinghua Zeng/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=ENGR2016_25-SPR_PC_3#subjects)