

CVEN

~~Week~~ 1 –

~~10:00–14:00~~
or 14:00–16:00

~~Wednesday, 14:00–16:00~~

HANDBOOK DESCRIPTION

See link to virtual handbook:

<https://www.handbook.unsw.edu.au/undergraduate/courses/2021/CVEN3402>

OBJECTIVES

The first strand is expected to develop skills related to the analysis of traffic and transport systems. Topics include: overview of the transport task, trends in motorization, sustainable transport, motorized and non-motorized transport, traffic flow fundamentals, definitions and concepts related to land use and transport systems; prediction methods of future transport demand; modelling and evaluation of transport systems; transport operations and traffic management.

- Understand components of the field of transport engineering.
- Learn the basic terminology of transport and traffic engineering practice.
- Learn urban transport planning concepts adopted by planning agencies and Roads and Traffic Authorities.
- Learn management methods related to road network systems.

The second strand is expected to develop skills related to quantifying sustainability with regard to transport systems. During the course we will:

- Recognise the importance of transport within the framework of Ecologically Sustainable Development.
- Explain the nature of transport and traffic noise.
- Describe the sources and impacts of transport emissions.
- Assess the sustainability of the transport system from a broad multi-criteria perspective

TEACHING STRATEGIES

The following teaching strategies will be used in the course:

| | |
|----------------------|---|
| Private Study | <ul style="list-style-type: none">• Review lecture material and textbooks• Do set problems and assignments• Use Moodle for discussions• Download class notes from Moodle if not collected during classes• Reflect on class problems and assignments |
| Lectures | <ul style="list-style-type: none">• Find out what you must learn• See methods that are not in the textbook• Follow worked examples• Hear announcements on course changes |
| Workshops | <ul style="list-style-type: none">• Be guided by demonstrators• Practice solving set problems• Ask questions |
| Assessments | <ul style="list-style-type: none">• Demonstrate your knowledge and skills• Demonstrate higher understanding and problem solving |

| | | | |
|---|--------------------------------------|--|--|
| 13/07/2021 & 14/07/2021 (Week 7) | The Sustainability Framework I | The Sustainability Framework II | Quantifying sustainability (14/07/2021) |
| 20/07/2021 & 21/07/2021 (Week 8) | Air, Water and Noise | Climate Change Mitigation and Adaptation | Calculating noise impact (21/07/2021) |
| 27/07/2021 & 28/07/2021 (Week 9) | Traditional and Alternative Vehicles | Public Transit | Fuel economy calculations (28/07/2021) |
| 03/08/2021 & 04/08/2021 (Week 10) | Travel Demand Management I | Travel Demand Management II | Calculating the carbon footprint (04/08/2021) |

ASSESSMENT

The final grade for this course will be based on the sum of the scores from the assignments and the final examination. For the values of the single components see the table below:

| Strand | Assessment | Weighting | Assessment Criteria |
|--------|--------------------------|-----------|---|
| | | | An online quiz will be administered via Moodle during Week 3 , |
| 1 | Moodle Quiz (Weeks 3) | 5% | |

Failure to attend the quizzes/mid-term exam/final exam will result in a mark of zero. A late penalty of 10% per day will apply for failure to submit the design assignment by the stated due date. Any assignment submitted 5 or more days after the deadline will receive a mark of zero.

Students who miss the assessment as a result of illness or unforeseen circumstances must apply for special considerations through <https://student.unsw.edu.au/special-consideration>

Appendix A: Engineers Australia (EA) Competencies

Stage 1 Competencies for Professional Engineers

| | Program Intended Learning Outcomes |
|--|---|
| PE1: Knowledge and Skill Base | PE1.1 Comprehensive, theory-based understanding of underpinning fundamentals |
| | PE1.2 Conceptual understanding of underpinning maths, analysis, statistics, computing |
| | PE1.3 In-depth understanding of specialist bodies of knowledge |
| | PE1.4 Discernment of knowledge development and research directions |
| | PE1.5 Knowledge of engineering design practice |
| | PE1.6 Understanding of scope, principles, norms, accountabilities of sustainable engineering practice |
| PE2: Engineering Application Ability | PE2.1 Application of established engineering methods to complex problem solving |
| | PE2.2 Fluent application of engineering techniques, tools and resources |
| | PE2.3 Application of systematic engineering synthesis and design processes |
| | PE2.4 Application of systematic approaches to the conduct and management of engineering projects |
| PE3: Professional and Personal Attributes | PE3.1 Ethical conduct and professional accountability |
| | PE3.2 Effective oral and written communication (professional and lay domains) |
| | PE3.3 Creative, innovative and pro-active demeanour |
| | PE3.4 Professional use and management of information |
| | PE3.5 Orderly management of self, and professional conduct |
| | PE3.6 Effective team membership and team leadership |