ENEC14015 *Traffic Engineering*
Term 2 - 2017

Profile information current as at 18/05/2024 12:24 am

General Information

Overview
Students will be able to describe and explain the fundamental concepts and characteristics of traffic engineering systems. They will analyse traffic survey data and interpret survey results, applying them to analysis of traffic flows and estimation of system capacity. Students will be able to analyse and design intersections, roundabouts and signalised intersections, assess traffic environments, develop strategies for managing and controlling traffic, identify safety issues and recommend solutions. They are required to communicate, work and learn, both independently and collaboratively, in a professional manner. Distance education (FLEX) students are required to have access to a computer and make frequent use of the Internet.

Details
Career Level: *Undergraduate*
Unit Level: *Level 4*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites
Prereq: MATH11219 and (ENEG11002 OR ENEA11002)
Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the Assessment Policy and Procedure (Higher Education Coursework).

Offerings For Term 2 - 2017

- Distance

Attendance Requirements
All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Website
This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses
Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses
Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Written Assessment**
Weighting: 30%
2. **Written Assessment**
Weighting: 40%
3. **Written Assessment**
Weighting: 30%
4. **Written Assessment**
Weighting: Pass/Fail

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the CQUniversity Policy site.
You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the CQUniversity Policy site.

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from Student Course Evaluation

Feedback

The use of an industry based program SIDRA was highlighted as a good aspect of the course. This is consistent with previous students comment.

Recommendation

The lecturer will ensure that Industry-based programs such as SIDRA will continue to be used. It would ensure that current Software version available to the industry is also made available to the students.

Feedback from Student Course Evaluation

Feedback

The workbook exercise was identified as valuable learning activity. Previous feedback had requested that the workbook be graded. This is being considered for implementation.

Recommendation

Workbook activity will continue to be used as a learning activity. As a strategy to improve on clarity of assessment the grading of the workbook will be considered for implementation.

Feedback from Student Course Evaluation

Feedback

Clarity of assessment item was the major issue reported by the student. This was quite different from 2015 that was changed.

Recommendation

A strategy will be explored to used the 2015 assessment model that students commented positively.

Feedback from Student Course Evaluation

Feedback

Teleconference communication quality was highlighted as an area needed improvement. A recommendation of the use of high quality microphone was made.

Recommendation

The use of high quality headphones will be adopted for subsequent recorded video conferences. Review of recorded session will also be undertaken by the lecturer using a different platform for quality improvement.

Unit Learning Outcomes

On successful completion of this unit, you will be able to:

1. Describe and explain characteristics of drivers, pedestrians and vehicular traffic relevant to traffic studies. [2, 3, 7]
2. Describe how to organise/conduct traffic surveys; analyse collected data and interpret the results. [3, 4]
3. Analyse traffic flows and describe the effect of key traffic flow parameters and their inter-relationships. [3, 4, 5]
4. Conduct capacity analysis to determine the level of-service of roadways and intersections. [3, 4]
5. Analyse and design at-grade intersections and roundabouts. [3, 4]
6. Analyse and design signalised intersections. [3, 4]
7. Assess traffic environments, identify road safety problems and recommend solutions. [3, 4]
8. Propose strategies to control and manage traffic in an urban/local area. [3, 4]
9. Demonstrate ethical decision-making process when choosing recommended traffic engineering solutions. [1, 9]
10. Communicate, work and learn, both individually and collaboratively in a professional manner. [2, 6, 9, 10]

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level | ∘ Introductory Level | • Intermediate Level | • Graduate Level | ∘ Professional Level | ∘ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes									
	1	2	3	4	5	6	7	8	9	10
1 - Written Assessment - 30%	•		•						•	•
2 - Written Assessment - 40%			•	•	•	•			•	•
3 - Written Assessment - 30%		•		•	•	•	•	•	•	•
4 - Written Assessment - 0%	•	•	•	•	•	•	•	•	•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes									
	1	2	3	4	5	6	7	8	9	10
1 - Communication										•
2 - Problem Solving	•	•	•	•	•	•	•	•		
3 - Critical Thinking	•	•	•	•	•	•				
4 - Information Literacy							•			
5 - Team Work										
6 - Information Technology Competence		•	•	•	•	•				
7 - Cross Cultural Competence										
8 - Ethical practice							•	•	•	•
9 - Social Innovation										
10 - Aboriginal and Torres Strait Islander Cultures										

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - Written Assessment - 30%	•	•	•			•				
2 - Written Assessment - 40%	•	•	•			•				
3 - Written Assessment - 30%	•	•	•					•		

Textbooks and Resources

Textbooks

ENEC14015

Prescribed

Traffic & Highway Engineering
Edition: 5 th (2015)
Authors: Nicholas J. Garber & Lester A Hoel
Cengage Learning
Florence , KY , USA
ISBN: 9781133607083
Binding: Hardcover

View textbooks at the CQUniversity Bookshop

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- AutoCAD CIVIL 3D
- SIDRA

Referencing Style

All submissions for this unit must use the referencing style: Harvard (author-date)
For further information, see the Assessment Tasks.

Teaching Contacts

Jerome Egwurube Unit Coordinator
j.egwurube@cqu.edu.au

Schedule

Week 1 - 10 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to Traffic Studies	• Garber & Hoel Chapter 3 • AGTM03-13 Chapter 2	

Week 2 - 17 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
Traffic Operation: Vehicle Characteristics	• Garber & Hoel Chapter 3	

Week 3 - 24 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
Principle of Traffic Flow 1	• Garber & Hoel Chapter 6	

Week 4 - 31 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
Principle of Traffic Flow 2	• Garber & Hoel Chapter 6 • AGTM02/08 Chapter 2	

Week 5 - 07 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic
Principle of Traffic Flow 3	• Garber & Hoel Chapter 6 • AGTM02/08 Chapter 4, 5	

Vacation Week - 14 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic

Week 6 - 21 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic
Capacity Analysis and Level of Service	• Garber & Hoel Chapter 9 • AGTM03-13 Chapter 3, 4	**Assessment A** Due: Week 6 Monday (21 Aug 2017) 5:00 pm AEST

Week 7 - 28 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic
Capacity Analysis: MultiLane Highway	• Garber & Hoel Chapter 9 • AGTM03-13 Chapter 5, 6	

Week 8 - 04 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
Capacity Analysis: Two-Lane Highway	• Garber & Hoel Chapter 9 • AGTM03-13 Chapter 5, 6	

Week 9 - 11 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
Capacity Analysis: Ramp		

Week 10 - 18 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
Traffic Engineering Studies	• Garber & Hoel Chapter 4	**Assessment B** Due: Week 10 Monday (18 Sept 2017) 5:00 pm AEST

Week 11 - 25 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
Analysis Roundabouts	• AGTM06-13 Chapter 4	

Week 12 - 02 Oct 2017

Module/Topic	Chapter	Events and Submissions/Topic
Analysis of Signalized Intersection	• Garber & Hoel Chapter 10 • AGTM06-13 Chapter 5	

Review/Exam Week - 09 Oct 2017

Module/Topic	Chapter	Events and Submissions/Topic
		Assessment C Due: Review/Exam Week Monday (9 Oct 2017) 5:00 pm AEST **Workbook** Due: Review/Exam Week Monday (9 Oct 2017) 5:00 pm AEST

Exam Week - 16 Oct 2017

Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

General Information

1. Answer Moodle quiz in the assessment task.
2. Additional unit details are provided in the Moodle unit site

Communication with Lecturer

- All unit related questions must be asked through appropriate forums or during the scheduled class time. No email will be responded for any quarries related to this unit unless those are private in circumstances.
- All emails related to this unit should have the unit code (ENEC14015) in the subject line. Any email without unit code in the subject line may not be responded.

Example: ENEC14015: Moodle Quiz

Assessment Tasks

1 Assessment A

Assessment Type
Written Assessment

Task Description
This assessment focus on Weeks 1 to 5 content. The Assessment task is an individual activity which will contribute 30 marks out of 100 marks.

- You will be required to complete the Moodle generated quiz
- The Moodle quiz will cover materials from week 1 to week 5.
- You will be have 2 attempts at each quiz.
- There is a maximum time limit to complete each quiz
- Your grading will be based on average score from each attempt.

Further information is available on the Moodle site

Assessment Due Date
Week 6 Monday (21 Aug 2017) 5:00 pm AEST

Return Date to Students

Returned electronically via moodle as marked

Weighting
30%

Minimum mark or grade
50%

Assessment Criteria
The marking matrix shall be based on the content consisting of the following principles. Each sequential step shall be allocated marks proportionately

1. Accuracy of Input parameter for each computation step with appropriate unit. Marks will only be awarded for correct input
2. Application of accurate methodology with appropriate referencing. Full mark will only be awarded for error free computational steps with appropriate explanation to be understood by an independent person.
3. Accuracy of answer with appropriate unit. Zero mark will be awarded with error in either Input or methodology.
4. If answers to any proceeding steps are inaccurate. Zero mark be awarded for subsequent answers.

Additional information should be obtained from the Moodle Unit web-page

Referencing Style

- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Describe and explain characteristics of drivers, pedestrians and vehicular traffic relevant to traffic studies. [2, 3, 7]
- Analyse traffic flows and describe the effect of key traffic flow parameters and their inter-relationships. [3, 4, 5]
- Demonstrate ethical decision-making process when choosing recommended traffic engineering solutions. [1, 9]
- Communicate, work and learn, both individually and collaboratively in a professional manner. [2, 6, 9, 10]

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Technology Competence

2 Assessment B

Assessment Type
Written Assessment

Task Description
This assessment focus on Weeks 6 to 9 content. The Assessment task is an individual activity which will contribute 40 marks out of 100 marks.

- This is an individual activity.
- You are expected to use the HCM2010 methodology to conduct capacity analysis for different scenarios.
- The questions will be generated through Moodle Quiz
- Each student will be provided individual data for each of the questions.
- You will be allowed only one attempt for this task
- There is a maximum time limit to complete the task

Further information is available on the Moodle site

Assessment Due Date
Week 10 Monday (18 Sept 2017) 5:00 pm AEST

Return Date to Students

Returned electronically via moodle as marked

Weighting
40%

Minimum mark or grade
50%

Assessment Criteria
The marking matrix shall be based on the content consisting of the following principles. Each sequential step shall be allocated marks proportionately

1. Accuracy of Input parameter for each computation step with appropriate unit. Marks will only be awarded for correct input
2. Application of accurate methodology with appropriate referencing. Full mark will only be awarded for error free computational steps with appropriate explanation to be understood by an independent person.
3. Accuracy of answer with appropriate unit. Zero mark will be awarded with error in either Input or methodology.
4. If answers to any proceeding steps are inaccurate. Zero mark be awarded for subsequent answers.

Additional information should be obtained from the Moodle Unit web-page

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Submit a single PDF file through unit website

Learning Outcomes Assessed

- Analyse traffic flows and describe the effect of key traffic flow parameters and their inter-relationships. [3, 4, 5]
- Conduct capacity analysis to determine the level of-service of roadways and intersections. [3, 4]
- Analyse and design at-grade intersections and roundabouts. [3, 4]
- Analyse and design signalised intersections. [3, 4]
- Demonstrate ethical decision-making process when choosing recommended traffic engineering solutions. [1, 9]
- Communicate, work and learn, both individually and collaboratively in a professional manner. [2, 6, 9, 10]

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Technology Competence

3 Assessment C

Assessment Type
Written Assessment

Task Description
This assessment focus on Weeks 10 to 12 content. The Assessment task is an individual activity which will contribute 30 marks out of 100 marks.

- You are expected to undertake the following
- Identify two roundabout intersections
- Conduct a traffic survey to collect the turning movement inputs for the identified intersection
- Create the layout of the identified intersections in SIDRA and conduct an analysis
- Upload a report for your analysis
- Upload the single SIDRA file used in the analysis.

Further information is available on the Moodle site

Assessment Due Date
Review/Exam Week Monday (9 Oct 2017) 5:00 pm AEST

Return Date to Students

Returned electronically via moodle as marked

Weighting
30%

Minimum mark or grade
50%

Assessment Criteria
The marking matrix shall be based on the content consisting of the following principles. Each sequential step shall be allocated marks proportionately

1. Accuracy of Input parameter for each computation step with appropriate unit. Marks will only be awarded for correct input
2. Application of accurate methodology with appropriate referencing. Full mark will only be awarded for error free computational steps with appropriate explanation to be understood by an independent person.
3. Accuracy of answer with appropriate unit. Zero mark will be awarded with error in either Input or methodology.
4. If answers to any proceeding steps are inaccurate. Zero mark be awarded for subsequent answers.

Additional information should be obtained from the Moodle Unit web-page

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
within 10 working days after submission due date

Learning Outcomes Assessed

- Describe how to organise/conduct traffic surveys; analyse collected data and interpret the results. [3, 4]
- Conduct capacity analysis to determine the level of-service of roadways and intersections. [3, 4]
- Analyse and design at-grade intersections and roundabouts. [3, 4]
- Analyse and design signalised intersections. [3, 4]
- Assess traffic environments, identify road safety problems and recommend solutions. [3, 4]
- Propose strategies to control and manage traffic in an urban/local area. [3, 4]
- Demonstrate ethical decision-making process when choosing recommended traffic engineering solutions. [1, 9]
- Communicate, work and learn, both individually and collaboratively in a professional manner. [2, 6, 9, 10]

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Ethical practice

4 Workbook

Assessment Type
Written Assessment

Task Description
The Workbook is a compulsory component of the unit and it supplements the Assignment work. The Workbook tasks will be made available on the Unit Website. Students will need to show appropriate use of notes, procedures, discussion, evaluation and calculations. It is the record of you working through the unit material and should include your rough notes as well as worked examples etc. Some effort is therefore required to maintain your workbook progressively throughout the term and prevent the need to re-work/rewrite at the end.
If students have difficulty with Workbook tasks, they should seek assistance from colleagues in their online study groups in the first instance.
In addition to the online workbook task completion, students should maintain a workbook and must submit as per the Study Schedule.

Assessment Due Date
Review/Exam Week Monday (9 Oct 2017) 5:00 pm AEST

Return Date to Students

Returned electronically via moodle as marked

Weighting
Pass/Fail

Minimum mark or grade
50% of each uploaded quizes

Assessment Criteria
Satisfactory workbook = ALL tasks must be successfully completed in the workbook and responses must show sufficient working and explanation to allow step-by-step checking.
No workbook submission = Fail in the workbook assessment = Fail in unit
Unsatisfactory workbook = Fail in the workbook assessment = Fail in unit

Referencing Style

- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Describe and explain characteristics of drivers, pedestrians and vehicular traffic relevant to traffic studies. [2, 3, 7]
- Describe how to organise/conduct traffic surveys; analyse collected data and interpret the results. [3, 4]
- Analyse traffic flows and describe the effect of key traffic flow parameters and their inter-relationships. [3, 4, 5]
- Conduct capacity analysis to determine the level of-service of roadways and intersections. [3, 4]
- Analyse and design at-grade intersections and roundabouts. [3, 4]
- Analyse and design signalised intersections. [3, 4]
- Assess traffic environments, identify road safety problems and recommend solutions. [3, 4]
- Propose strategies to control and manage traffic in an urban/local area. [3, 4]
- Demonstrate ethical decision-making process when choosing recommended traffic engineering solutions. [1, 9]

- Communicate, work and learn, both individually and collaboratively in a professional manner. [2, 6, 9, 10]

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?
A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?
A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?
For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem