

Annexe A: New/Revised Course Content in OBTL+ Format

Course Overview

The sections shown on this interface are based on the templates [UG OBTL+](#) or [PG OBTL+](#)

If you are revising/duplicating an existing course and do not see the pre-filled contents you expect in the subsequent sections e.g. Course Aims, Intended Learning Outcomes etc. please refer to [Data Transformation Status](#) for more information.

Expected Implementation in Academic Year	
Semester/Trimester/Others (specify approx. Start/End date)	
Course Author * Faculty proposing/revising the course	Lee-Chua Lee Hong
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Course Title	Traffic Engineering
Course Code	CV4112
Academic Units	3
Contact Hours	39
Research Experience Components	Not Applicable

Course Requisites (if applicable)

Pre-requisites	CV3014 Transportation Engineering
Co-requisites	
Pre-requisite to	
Mutually exclusive to	
Replacement course to	
Remarks (if any)	

Course Aims

This course is offered to final year students taking it as a Prescribed Elective. By the end of the course, you shall be equipped with essential knowledge on the capacity of highway, unsignalised and signalised intersections, and traffic flow theory and management. This knowledge can be applied in the planning and design of land transport infrastructure facilities.

Course's Intended Learning Outcomes (ILOs)

Upon the successful completion of this course, you (student) would be able to:

ILO 1	Perform basic statistical analysis of traffic data;
ILO 2	Analyse capacity of different kinds of roads;
ILO 3	Analyse capacity of unsignalised intersections;
ILO 4	Perform signal timing design and capacity analysis of signalised intersections;
ILO 5	Design signal progression system;
ILO 6	Determine speed-flow relationships and conduct shockwave analysis;
ILO 7	Recommend suitable traffic management and demand management measures;
ILO 8	Apply traffic safety practices.

Course Content

S/N	Topic
1	Statistical Analysis of Traffic Data
2	Highway Capacity
3	Unsignalised Intersection Capacity
4	Signalised Intersection Capacity
5	Signal Progression
6	Traffic Flow Analysis
7	Traffic Management and Demand Management
8	Traffic Safety

Reading and References (if applicable)

1. Roger P. Roess, Elena S. Prassas, William R. McShane, Traffic Engineering, 4th ed., Pearson/Prentice Hall (HE355.M175 2012)
2. Transportation Research Board (2000). Highway Capacity Manual (HCM 2000). National Research Council, Washington, DC.
3. Khisty, C.J. and Lall B.K. (1998). Transportation Engineering. 2nd ed., Prentice-Hall. New Jersey.

Planned Schedule

Week or Session	Topics or Themes	ILO	Readings	Delivery Mode	Activities
1	Statistical Analysis of Traffic Data	1			Lectures & Tutorial
2	Statistical Analysis of Traffic Data	1			Lectures & Tutorial
3	Highway Capacity of Basic Freeway Segment	2			Lectures & Tutorial
4	Highway Capacity of 2-lane Highway	2			Lectures & Tutorial
5	Capacity of Unsignalised Intersection	3			Lectures & Tutorial
6	Capacity of Unsignalised Intersection, Signal Timing Design of Signalised Intersection	3, 4			Lectures & Tutorial
7	Signal Timing Design of Signalised Intersection	4			Lectures & Tutorial
8	Capacity Analysis of Signalised Intersection, Signal Progression	4,5			Lectures & Tutorial
9	Traffic Flow Analysis	6			Lectures & Tutorial

Week or Session	Topics or Themes	ILO	Readings	Delivery Mode	Activities
10	Traffic Flow Analysis	6			Lectures & Tutorial
11	Traffic Management	7			Lectures & Tutorial
12	Demand Management	7			Lectures & Tutorial
13	Traffic Safety	8			Lectures & Tutorial

Learning and Teaching Approach

Approach	How does this approach support you in achieving the learning outcomes?
Lectures	Weekly lectures to provide you with the specific knowledge and techniques to achieve the learning outcome stated above.
Tutorials	Weekly tutorials to enable you to apply the knowledge to solve structured problems. We encourage you to explore alternative approaches and techniques.

Assessment Structure

Assessment Components (includes both continuous and summative assessment)

No.	Component	ILO	Related PLO or Accreditation	Weightage	Team/Individual	Rubrics	Level of Understanding
1	Summative Assessment (EXAM): Others([final examination])	All	EAB SLOs (a), (b), (c)	60	Team	Holistic	Relational
2	Continuous Assessment (CA): Others([quiz/test])	1, 2, 3, 4, 5	EAB SLOs (a), (b), (c)	20	Team	Analytic	Multistructural
3	Continuous Assessment (CA): Others([quiz/test])	6, 7, 8	EAB SLOs (a), (b), (c)	20	Team	Analytic	Multistructural

Description of Assessment Components (if applicable)

Formative Feedback

Feedback will be through the dissemination of the student's performance in quizzes as well as review of the quiz questions in class.

We encourage you to initiate an Individual consultation sessions on your particular learning needs.

NTU Graduate Attributes/Competency Mapping

This course intends to develop the following graduate attributes and competencies (maximum 5 most relevant)

Attributes/Competency	Level
Care for Environment	Intermediate
Care for Society	Intermediate
Problem Solving	Intermediate

Course Policy

Policy (Academic Integrity)

Good academic work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honour Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values. As a student, it is important that you recognize your responsibilities in understanding and applying the principles of academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic fraud, collusion and cheating. If you are uncertain of the definitions of any of these terms, you should go to the academic integrity website for more information. On the use of technological tools (such as Generative AI tools), different courses / assignments have different intended learning outcomes. Students should refer to the specific assignment instructions on their use and requirements and/or consult your instructors on how you can use these tools to help your learning. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

Policy (General)

The standing university policy governing student responsibilities shall apply.
No special policy for this course.

Policy (Absenteeism)

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Policy (Others, if applicable)

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