

CB472 Transportation And Traffic Engineering

COURSE INFORMATION

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Laborator y	
CB271	4	7	4	2	0	3

COURSE AIM

This course is designed to introduce seniors in construction engineering to Transportation Engineering, Transportation Planning Techniques and Basics in Traffic Engineering Design. Through using; communication technologies and skills, engineering technologies, data collection and interpretation, and writing technical reports referring to the relevant literature

COURSE WEEKLY CONTENTS

- 1 General introduction, Transportation Systems, its Elements and Review of Mechanics
- 2 Individual Transportation Vehicle Motion, Inherent, Gradient and Curvature Resistance
- 3 Concept of Tractate effort [propulsive force], Prediction of Vehicle performance
- 4 Transportation Networks, Nodes, Links, Arcs, Connection Matrix, Minimum Path Route
- 5 Transportation Vehicle Flow, Time – Space Diagrams, Application in Airport Engineering
- 6 Time – Space Diagrams, Application in Railway, Application in Highway. Fundamental Flow Relationships
- 7 Fundamental Flow Relationships. 7 + Midterm Exam
- 8 Models of Traffic Flow.
- 9 Queuing Theory and Traffic Flow Analysis.
- 10 Traffic Analysis of Signalized Intersections.
- 11 Concept of Engineering Planning and application in the field of Transportation Engineering.
- 12 Trip Generation Modeling, Statistical Analysis studies, Zone-based, house-hold based Modeling, trip classification, polynomial modeling.
- 13 Trip Distribution Modeling , Gravity Model, Calibration, Iteration
- 14 Modal Choice, Split Model, Probability analysis studies
- 15 Transportation Network Assignments, 12th Week Exam

STUDENT GRADING & ASSESSMENT

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	20 Midterm	←	10	MARKS		→	30
To be freely distributed among possible assessments							
8 to 12	←		20	MARKS		→	20
13 to 15	←		10	MARKS		→	10
16 or 17	40 Final						40
Total	Exams	Assign.	Quizzes	Reports	Present.	Lab.	100

REFERENCES

Textbook	Fundamentals of Transportation engineering, Jon D Fricker and Robert K Whitford, Pearson Education, 2004.
Other	Traffic and Highway Engineering, Nicholas J. Garber and Lester A. Hoel, Latest Edition Standard Handbook for Civil Engineers, F.S. Merritt, McGraw Hill Co., New York, Latest Edition. Urban Transportation System, Shunk, G.A., Transportation Planning Handbook, Institute of Transportation Engineers, Latest Edition. Transportation Engineering, P.H. Wright and N.J. Ashford, John Wiley and Sons Co., New York, Latest Edition.