

Construction & Building Engineering Courses (CB)

Transportation Engineering Courses Group

CB 472 – Transportation Engineering

COURSE INFORMATION

Course Title: Transportation Engineering

Code: CB 472

Hours: Lecture – 4 Hrs. Tutorial – 2 Hrs. Credit –3.

Prerequisite: CB 271

GRADING

Class Performance/Attendance: 10%

Midterm # 1/Assignments – (7th Week): 30%

Midterm # 2/Assignments – (12th Week): 20%

Final Exam: 40%

COURSE DESCRIPTION

Transportation systems ; Transportation planning ; Trip generation ; Trip distribution ; Modal choice ; Network assignments ; Network equilibrium ; Traffic studies (volume, speed, and density) ; Traffic flow characteristics ; Intersection control ; Conflict point at intersection ; Traffic signal design , Weaving for intersection.

TEXT BOOK

Fundamentals of Transportation Engineering by Fricker, Jon D. Publisher: Pearson Education, Inc., Pearson Prentice Hall, Upper Saddle River, NJ USA, 2001.

REFERENCE BOOKS

Introduction to Transportation Planning by Bruton, M. J., Hutchinson of London, 1996.

Urban Transportation System by Shunk, G.A. Publisher: Transportation Planning Handbook, Institute of Transportation Engineers, 1992.

Traffic Engineering Handbook, Institute of Transportation Engineers, 1996.

COURSE AIM

This course is designed to introduce seniors in construction engineering to Transportation Engineering, Transportation Planning Techniques and Basics in Highway Design

APPENDIX A-131

SPECIFIC OUTCOMES OF INSTRUCTION

The student should be familiar with the field of Transportation Engineering and its different applications in Airport Engineering, Railway Engineering, Highway Engineering, Water way Engineering and Pipe line Transport Engineering.

COURSE OUTLINE

- Week Number 1:* General introduction, Transportation Systems, its Elements and Review of Mechanics
- Week Number 1:* General introduction, Transportation Systems, its Elements
- Week Number 2:* Trip Generation Modeling, Statistical Analysis studies, Zone-based, house-hold based Modeling, trip classification, polynomial modeling.
- Week Number 3:* Trip Distribution Modeling , Gravity Model, Calibration, Iteration
- Week Number 4:* Modal Choice, Split Model, Probability analysis studies
- Week Number 5:* Transportation Network Assignments
- Week Number 6:* Time – Space Diagrams, Application in Railway, Application in Highway. Fundamental Flow Relationships
- Week Number 7:* Network equilibrium. 7th Week Exam
- Week Number 8:* Fundamental Flow Relationships.
- Week Number 9:* Models of Traffic Flow.
- Week Number 10:* Traffic Volume Studies.
- Week Number 11:* Speed Studies.
- Week Number 12:* Traffic Flow Characteristics. 12th Week Exam
- Week Number 13:* Intersection Control ; Conflict Point at Intersection.
- Week Number 14:* Traffic Signal Design.
- Week Number 15:* Weaving for Intersection.
- Week Number 16:* Final Exam.

COURSE COORDINATOR AND DEMAND

Course Coordinator: Dr. Akram Soltan Kotb.

Course Demand: *Required*