



The Islamic University of Gaza
College of Engineering
Civil Engineering Dept.

Instructor: Dr. Yahya R. Sarraj

هندسة مرور متقدم

Advanced Traffic Engineering

ECIV 5332

Course Outline

Introduction

- This is an **optional course** intended to give further **knowledge** and **training** to final year students in the Civil Engineering Department in the field of traffic and transportation engineering.

This course is based on two previous courses:

- Highways and Transportation I (ECIV 4333)
- Highways and Transportation II.(ECIV 4334)

Objectives:

- This course covers:
 - cross section design elements,
 - road intersections (geometric and traffic design),
 - design of car parks,
 - road signing and road markings,
 - an introduction to the design of airports,
 - and computer-aided design.

Objectives:

Training on:

- selected **computer applications** and
- **projects** oriented towards
- the management of transportation systems in the local area.

Objectives:

- practical fieldwork on data collection and design.
- writing small essays on selected topics
- short presentations.
- explore the internet and gain good knowledge about some of the available transportation material.

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Topics:

Hours

• Cross section design elements	6
• Geometric and Traffic Design of road intersections; roundabouts and signalized intersections.	12
• Road signing and road markings	6
• Design of car parks	6
• Introduction to the design of airports	3
• Computer Application	3

References:

- Garber, N. and Lester A. Hoel, Traffic and Highway Engineering (4th edition, SI), Cengage Learning, Stamford, USA, 2010.
- Fricker, J. D. and Whitford, R. K., Fundamentals of Transportation Engineering, Pearson Education, Inc. USA, 2004.
- Banks, James H., Introduction to Transportation Engineering, 2nd Edition, MacGraw-Hill, USA, 2002.
- O'Flaherty, C. A., Transport Planning and Traffic Engineering, Butterworth Heinemann, Oxford, 2001.

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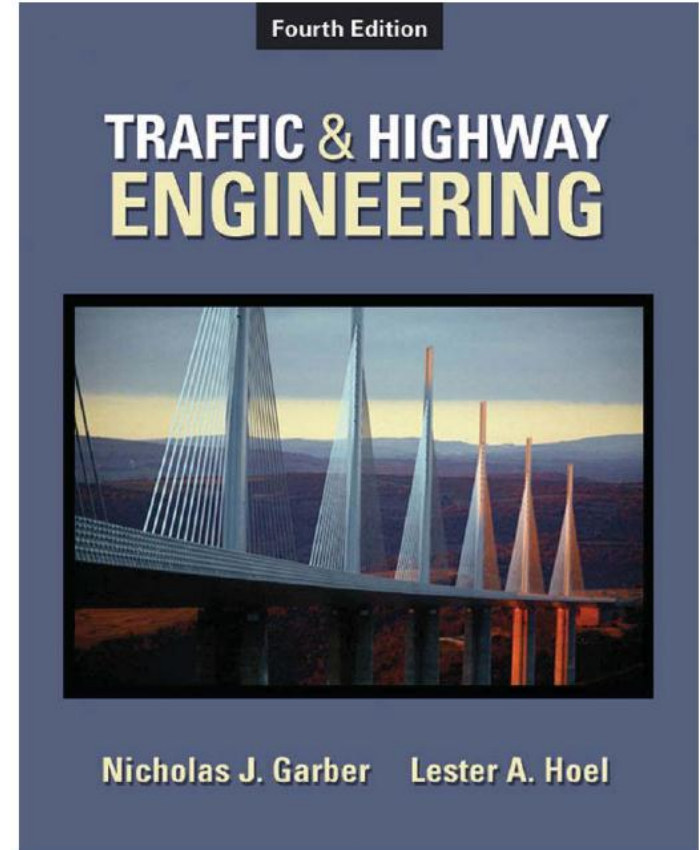
Text book:

Garber, N. and Lester A. Hoel,

**Traffic and Highway
Engineering**

(4th edition, SI),

Cengage Learning, Stamford,
USA, 2010.



Extra References:

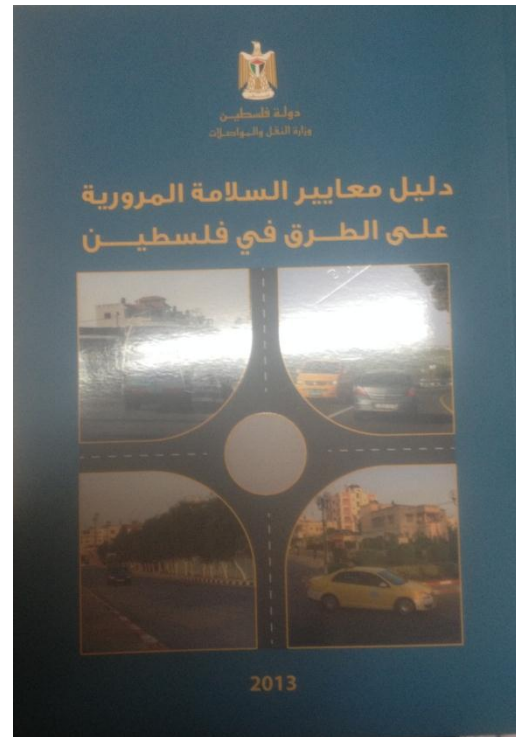
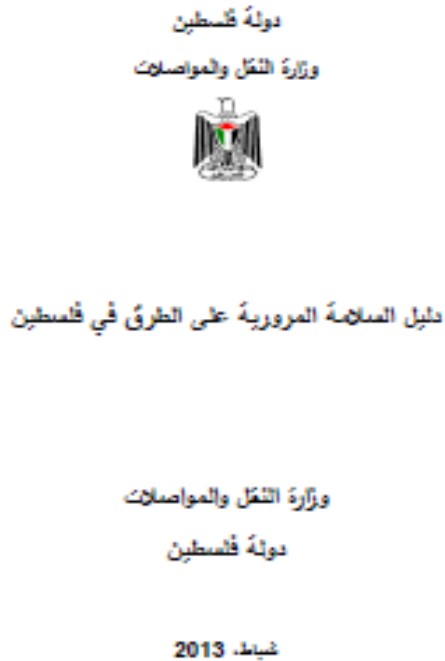
- Hobbs, F. D., Traffic Planning and Engineering, Pergamon Press, Oxford, 2nd edition, 1984.
- Salter, R. J., Highway Traffic Analysis and Design, 2nd edition, Macmillan Education Ltd., London, 1987.
- ITE, Traffic Engineering Handbook, 4th edition, 1992.
- Paquette, R. J., Ashford, Wright, Transportation Engineering, 1972, p545 - 597

References:

- وزارة النقل والمواصلات، دليل معايير السلامة المرورية على الطرق في فلسطين، التعاون الألماني (GIZ) رام الله، فلسطين شباط 2013.
- AASHTO, A Policy on Geometric Design of Highways and Streets, AASHTO, Washington, D.C., 1994.
- ITE, Manual of Transportation Engineering Studies, Prentice-Hall, 1994
- ITE, Traffic Signing Handbook, ITE, Washington, D.C., 1997
- Manual on Uniform Traffic Control Devices (MUTCD), U.S. Department of Transportation, federal Highway Administration, Washington, DC, 2001.

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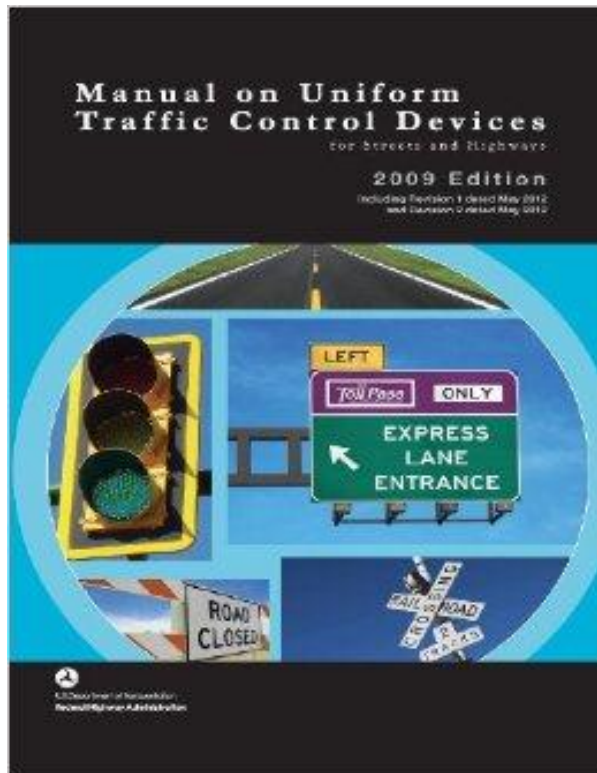
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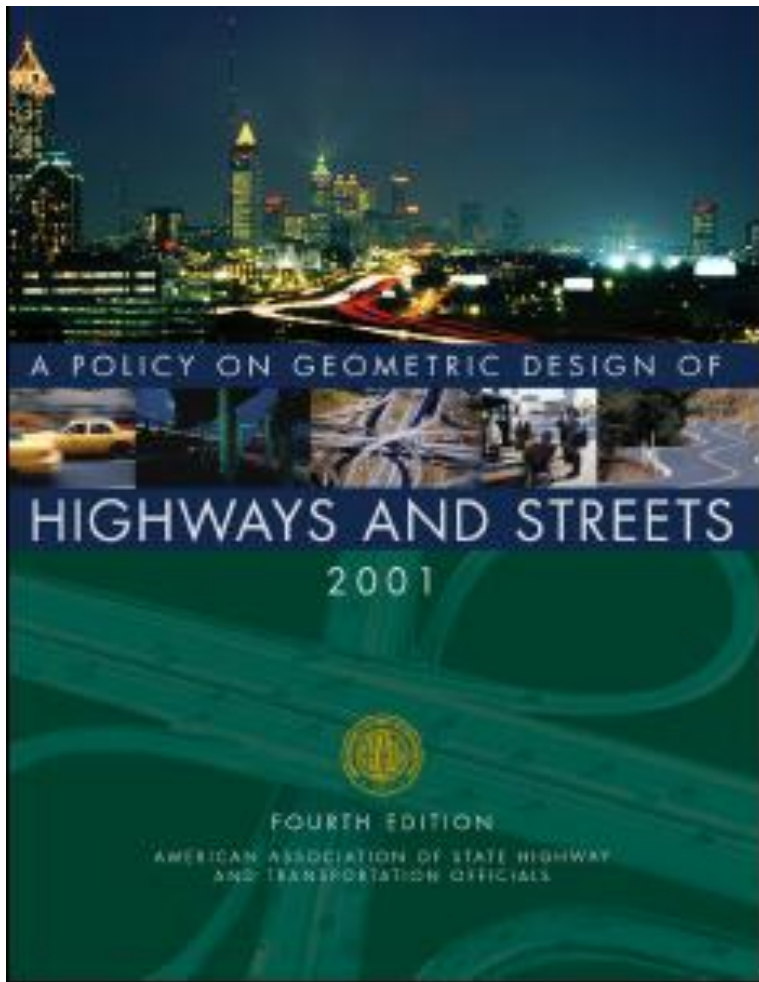
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Manual on Uniform Traffic
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(MUTCD),
U.S. Department of
Transportation,
federal Highway
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A POLICY on GEOMETRIC DESIGN of HIGHWAYS and STREETS

2001



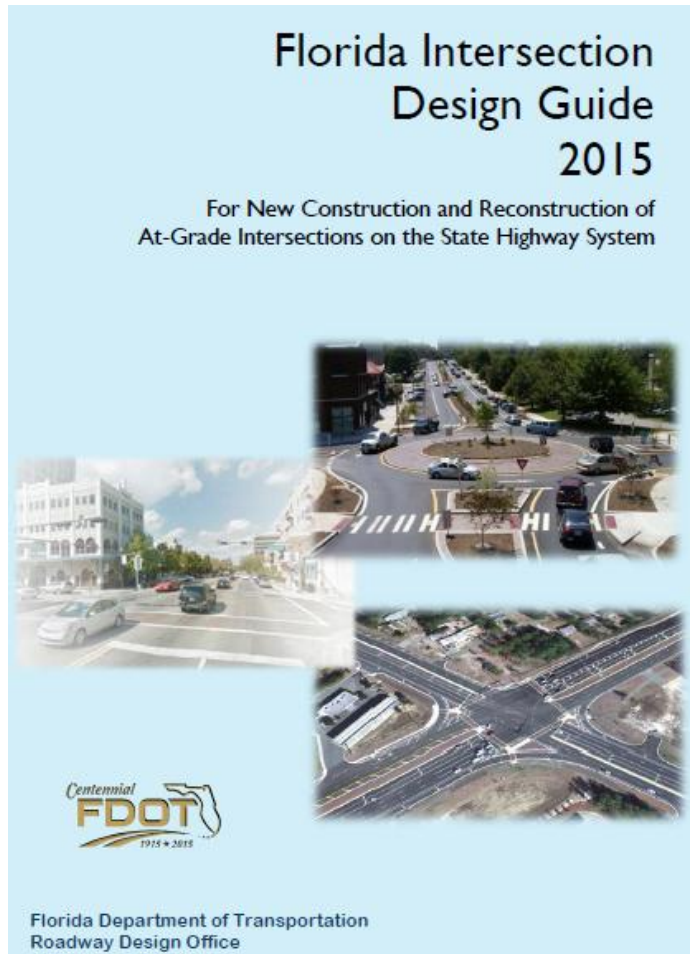
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Florida Intersection Design Guide 2015

For New Construction and
Reconstruction of
At-Grade Intersections on the State
Highway System

References:

- Transportation Research Board (TRB), Intersection Channelization Design Guide , TRB, Washington, D.C., 1985
- A number of studies and reports.
- Web sites:
- www.paltrans.org, www.ite.org, www.iht.org.uk,
www.trl.co.uk, www.aashto.org www.transportation.org
www.parkairsystems.com

Presentation Methodology:

- ✓ Lectures using LCD,
- ✓ Video shows,
- ✓ Student presentations
- ✓ discussion classes,
- ✓ projects and
- ✓ field work.

Presentation Methodology (continued):

Learning

rather than

Teaching

Course Work:

- Selected essays and presentations
- Study and detailed design of a road intersection
- Study and design of a car park
- Quizzes and Homework

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Grading Policy:

- Course work 25%
 - Field work (project) 10%
 - Reports 7%
 - Presentations 8%
- Midterm Exam I 10%
- Midterm Exam II 15%
- Final Exam 40%
- Attendance 5%
- Activities 5%

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Best of Luck

New Technology in Transport

Flying car

- <https://www.youtube.com/watch?v=CajAq6ndJYE>



New Technology in Transport

Human Powered Vehicle

<https://www.youtube.com/watch?v=aGhwIU17mws>



New Technology in Transport

A Motorcycle that Can
Change the Industry !

<https://www.youtube.com/watch?v=mU-NGPOOMVM>

