
SYLLABUS: TTE 3004 Transportation Engineering
Fall 2016
Class Schedule: Tue & Thu 09:30 AM - 10:51 AM
Class Meeting Location: CE1 Room A-0226

Credit Hours:	Three credit hours
Catalog Description:	This course is aimed at teaching students the analysis and design of transportation systems, elements of geometric and roadside design, traffic data measurements and interpretation, elementary traffic flow relations, and highway safety. This course will also emphasize practical design elements of traffic and highway transportation facilities.
Prerequisite:	CEG 2202 & CEG 2202L: Intro to Geomatics Eng. & Lab – Grades should be C or higher for both courses. STA2122 or equivalent: Statistics – Grade should be C or higher. Students who do not satisfy the pre- and co-requisites for this course may be dropped from the course at any time during the semester with no refund of fees.
Instructor:	Eren Erman Ozguven, Ph.D., Room B313 Email: eozguven@fsu.edu, Phone: (850) 410-6146 http://www.eng.fsu.edu/~eozguven
Office Hours:	Tue Thu 11:00 AM – 12:30 PM, Room B313 Other hours by appointment
Teaching Assistant:	Mr. Jordin Findling, Teaching Assistant Email: jlf12b@my.fsu.edu Office Hours: Room B 325, Mon & Wed 12:45 PM – 02:00 PM Other hours by appointment
Required Textbook:	<u>Traffic and Highway Engineering</u> , Fifth Edition, by Nicholas J. Barber and Lester A. Hoel, Cengage Learning, 2015
Additional References:	<u>Principles of Highway Engineering and Traffic Analysis</u> , Fourth Edition, by F. Mannering, S. Washburn, and W. Kilareski, John Wiley & Sons, Inc., 2009 <u>Fundamentals of Transportation: wikibook</u> http://en.wikibooks.org/wiki/Fundamentals_of_Transportation
Course Learning Outcomes:	At the end of this course, you should be able to achieve the following learning outcomes. 1. Ability to apply the fundamentals of mathematics, physics, and engineering mechanics to the analysis of traffic and highway engineering problems. <i>Assessed by: Homeworks, Exams, and Class Discussions</i> <i>Related Program (Student) Outcomes: 1a, 1b, 1c</i> 2. Ability to apply the principles of traffic and highway engineering to design and conduct transportation studies, as well as to critically analyze and interpret data in traffic and highway engineering <i>Assessed by: Homeworks, Exams, and Class Discussions</i> <i>Related Program (Student) Outcomes: 2c, 2d</i> 3. Ability to apply the fundamental principles and design elements of traffic and highway engineering gained through lectures, homework assignments and

exercises integrated throughout the course to design traffic and highway facilities.

Assessed by: Homeworks, Exams, and Class Discussions

Related Program (Student) Outcomes: 3b, 3c

4. Ability to identify, formulate, and solve traffic and highway engineering problems.

Assessed by: Homeworks, Exams, and Class Discussions

Related Program (Student) Outcomes: 5a, 5b, 5c

5. Ability to communicate effectively concerning traffic and highway engineering projects and the proposed solutions.

Assessed by: Homeworks, Exams, and Class Discussions

Related Program (Student) Outcomes: 7a, 7c, 7d

6. A deeper understanding of the impact of transportation engineering problems and solutions to communities.

Assessed by: Homeworks, Exams, and Class Discussions

Related Program (Student) Outcomes: 8a, 8b

7. Gain knowledge of contemporary issues in traffic and highway engineering.

Assessed by: Homeworks, Exams, and Class Discussions

Related Program (Student) Outcomes: 10a, 10b

8. Gain knowledge of modern techniques and standards in transportation, traffic and highway engineering.

Assessed by: Homeworks, Exams, and Class Discussions

Related Program (Student) Outcomes: 11b, 11c

**Relationship to
Program (Student)
Outcomes:
(Mapping of Course
Outcomes)**

1. An ability to apply knowledge of mathematics through differential equations, science (including calculus-based physics, general chemistry, and one additional area of science), and engineering. Specifically:

- Identify the appropriate formula(s) or model for a system or process.
- Apply relevant science and engineering principles to solve problems.
- Apply concepts of integral and differential calculus and/or linear algebra to solve problems.

Relates to Course Learning Outcome 1.

2. An ability to design and conduct civil engineering experiments, as well as to analyze and interpret the resulting data.

- Use existing theory and knowledge to design an experiment.
- Use appropriate tools to analyze data and apply statistical procedures where appropriate.
- Interpret data in the appropriate context to draw conclusions and/or make recommendations.

Relates to Course Learning Outcomes 2.

3. An ability to design systems, components, or processes in more than one civil engineering context to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

- Incorporate established design criteria for an engineering system, component, or process within realistic constraints.
- Select and apply appropriate method at the proper stage of a design project.
- Evaluate feasibility of proposed solutions and/or alternatives by considering stated and implied constraints.

Relates to Course Learning Outcomes 3.

4. An ability to function on multidisciplinary teams.

Relates to Course Learning Outcomes: Not Addressed.

5. An ability to identify, formulate, and solve civil engineering problems.

- Identify and describe issues associated with the problem.
- Propose possible solution approaches and alternatives.
- Solve a problem by applying appropriate equations, principles and assumptions and verifying the reasonableness of the result.

Relates to Course Learning Outcomes 4.

- 6. An understanding of ethical and professional responsibility, and an ability to explain basic concepts in management, business, public policy, and leadership as well as the importance of professional licensure. Specifically:

Relates to Course Learning Outcomes: Not Addressed.

- 7. An ability to communicate effectively.

- a. Write a technical document that presents background, methodology, results, analysis, and recommendations that is clear, concise and well organized.
- c. Use visual aids and graphics that are easy to read, appropriate and clear.
- d. Submit work with minimal errors in spelling, punctuation, grammar and usage.

Relates to Course Learning Outcomes 5.

- 8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.

- a. Identify the global and societal impact of engineering solutions.
- b. Identify the economic impact of engineering solutions.
- c. Explain the environmental impact of engineering solutions.

Relates to Course Learning Outcomes: 6.

- 9. A recognition of the need for and an ability to engage in lifelong learning.

Relates to Course Learning Outcomes: Not Addressed.

- 10. A knowledge of contemporary issues.

- a. Explain socio-economic, global, and political issues, as they relate to engineering.
- b. Explain sustainability and environmental issues, as they relate to engineering.

Relates to Course Learning Outcomes: 7.

- 11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

- b. Explain the use of modern equipment and techniques for engineering practice.
- c. Use design codes and standards to solve civil engineering problems.

Relates to Course Learning Outcomes: 8.

- 12. An ability to apply knowledge of four technical areas appropriate to civil engineering.

Relates to Course Learning Outcomes: Not Addressed.

Course Topics & Tentative Schedule:
(Subject to change with advance notice)

- (See attached Tentative Course Outline)

Student Assessment and Grading Criteria:

Your overall grade will be determined by your performance on the following Student Learning Tasks:

Homeworks	20%
Midterm	25%
Final	30%
MATLAB Assignments	15% (We will learn how to use the MATLAB software with practical applications).
Class participation/attendance	10%

Final grading criteria:

Final grade scale**, %	Final grade
90-100	A
80-89	B
70-79	C
60-69	D

<60	F
-----	---

**The course instructor reserves the right to relax or adjust the final grading scale.

Course Policies:

Course lectures (PFD files) will be available for every chapter within the course library module. MATLAB lectures will be provided as online videos and will be uploaded to the FAMU-FSU College of Engineering Blackboard website.

The due date for each exam, assignment and homework will be announced in advance. Homeworks and MATLAB assignments are due at the beginning of class on the assigned due date.

LATE HOMEWORKS AND ASSIGNMENTS ARE NOT ACCEPTABLE UNDER ANY CIRCUMSTANCES. THOSE ANTICIPATING MISSING A CLASS IN WHICH HOMEWORK IS DUE MUST TURN THE HOMEWORK IN EARLY.

Assignments involving calculations should be neatly done on engineering papers. Software assignments should be neatly done with a word processor.

CLASS ATTENDANCE IS MANDATORY. DO NOT BE LATE FOR THE CLASS. Late arrival in class is tantamount to missing class and you may be prohibited from signing the attendance sheet. In addition, this class starts promptly at 09:30 A.M. and ends at 10:51 A.M.

Roll calls will be conducted regularly. Students with excessive record of missing classes will be dropped from the class according to the university attendance policy.

IF YOU ARE SICK AND CANNOT ATTEND A CLASS OR AN EXAM, YOU MUST BRING A DOCTORS' EXCUSE (DOCTOR'S NOTE) IMMEDIATELY NEXT CLASS YOU ARE ABLE TO ATTEND. DOCTOR'S EXCUSE MUST SHOW THE DATE AND TIME CLEARLY. DOCTOR'S NOTES THAT ARE SUBMITTED LATE WILL NOT BE ACCEPTED.

All the exams will be closed-book. The necessary materials such as formula sheets, charts, tables, and figures will be given to you. Exams will consist of description questions, derivations and calculation problems. Three or more calculation problems will be comprehensive in each exam. Two exams will be administered during the semester, with the second exam generally conducted during the final exam week period.

Without a valid reason, you are not allowed to leave the class room once the lecture has started. This conduct is irritating to the instructor and disturbing to the students. Certain circumstances may require that you leave the room during the lecture. In this case, you may need to inform the instructor in advance of your intention.

University Attendance Policy:

Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

Honor Codes and Policy on Cheating: **FSU Academic Honor Policy:** The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the academic Honor Policy and for living up to their pledge to "...be honest and truthful and ... [to] strive for personal and institutional integrity at Florida State University." (Florida State University Academic Honor Policy, found at <http://dof.fsu.edu/honorpolicy.htm>)

FAMU Academic Honor Policy: Please refer to FAMU General Catalog and university web site (<http://www.famu.edu>) for more information.

General Statement on Honor Codes and Policy on Cheating: Cheating implies taking credit for somebody else's work. Cheating on exams and other acts of academic dishonesty will not be tolerated and will be dealt with at the instructor's discretion. Severe violations may be punished with a failing grade in the course. Students are bound by their university's Academic Honor Code and are subject to sanctions if they are found in violation of the Code. Possible sanctions include but are not limited to: (1) a failing grade on an exam or assignment, (2) a failing grade in the course, (3) dismissal from the academic program, or (4) dismissal from the university.

Students with Disabilities:

FSU Americans with Disabilities Act: Students with disabilities needing academic accommodation should: (1) register with and provide documentation to the Student Disability Resource Center; and; (2) bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class. This syllabus and other class materials are available in alternative format upon request.

For more information about services available to FSU students with disabilities, contact: Student Disability Resource Center, 874 Traditions Way, 108 Student Services Building, FSU, Tallahassee, FL. 32306-4167. (850) 644-9566 (voice); (850) 644-8504 (TDD); sdrc@admin.fsu.edu; <http://www.disabilitycenter.fsu.edu>

FAMU Students with Disabilities: Students with disabilities needing academic accommodations should register with and provide documentation to the FAMU Office of Special Programs Student (OSP). Bring a letter to the instructor from Office of Special programs (Student Union Building Rm. 204) indicating the need for academic accommodations. This should be done within first week of class.

For more information about services available to students with disabilities, contact: Center for Disability Access and Resources, 667 Ardelia Court, Florida A & M University Tallahassee, FL 32307. (850) 599-3180 (voice); (850) 561-2783 (TDD); CEDAR@famu.edu.

Syllabus Change Policy:

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.

Prepared by:

Dr. Eren Erman Ozguven
Last modified on August 29, 2016

TTE3004 Tentative Course Outline:

Lecture	Topic	Reading	Homework
1	Introduction	Chapter 1	No homework
1,2	Transportation Systems	Chapter 2	HW1
3, 4, 5, 6	Characteristics of the Driver, the Pedestrian, the Vehicle, and the Road	Chapter 3	HW2
7, 8, 9, 10	Vertical Alignment	Chapter 15	HW3
11, 12, 13	Horizontal Alignment	Chapter 15	HW4
14, 15, 16	Traffic Engineering Studies	Chapter 4	HW5
17, 18, 19, 20	Traffic Flow	Chapter 6	HW6
21, 22	Highway Capacity and LOS	Chapter 9	HW7
TBD	Exam I (Midterm)		
TBD	Exam II (Final)		
<u>NO CLASSES ON SEPTEMBER 13 AND SEPTEMBER 15.</u>			