

COURSE OUTLINE

(1) GENERAL

SCHOOL	UNIVERSITY OF THESSALY		
ACADEMIC UNIT	DEPARTMENT OF CIVIL ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE		SEMESTER	5
COURSE TITLE	Transportation Planning		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>		WEEKLY TEACHING HOURS	CREDITS
Lectures		6	5
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialized general knowledge, skills development</i>	General background		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	YES		
COURSE WEBSITE (URL)	https://eclass.uth.gr/courses/CULT_U_208/		

(2) LEARNING OUTCOMES

Learning outcomes <i>The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.</i> <i>Consult Appendix A</i> • <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i> • <i>Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i> • <i>Guidelines for writing Learning Outcomes</i>
The goal of transportation planning is to predict the demand for mobility and to assess the impacts of these demands on the transportation network. The key aspects include: • Assessment of the traffic impacts expected to arise from the implementation of transportation projects, operational characteristics of the transportation network, the application of transportation policies, and socioeconomic development. • Integration of these elements into the design of transportation systems within the framework of decision-making processes. Upon successful completion of the course, students will be able to: • Identify and interpret fundamental concepts related to the design and basic functions of transportation systems. • Conduct sampling and organize origin-destination surveys. • Design transportation networks and zones within a study area, including origin-destination surveys and optimal route algorithms. • Solve problems related to the generation and distribution of trips in the transportation network, allocate them to transportation modes, develop tree diagrams, and apply shortest path algorithms, as well as regression models and other predictive tools.

- Simulate the transportation network with alternative operational scenarios and use traffic models for the distribution of trips within the network under current and future conditions.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>	<i>Project planning and management</i>
<i>Adapting to new situations</i>	<i>Respect for difference and multiculturalism</i>
<i>Decision-making</i>	<i>Respect for the natural environment</i>
<i>Working independently</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>
<i>Team work</i>	<i>Criticism and self-criticism</i>
<i>Working in an international environment</i>	<i>Production of free, creative and inductive</i>
<i>thinking Working in an interdisciplinary environment</i>	<i>.....</i>
<i>Production of new research ideas</i>	<i>Others...</i>
	<i>.....</i>

Furthermore, the teaching of the course aims to enhance the overall skills of students in areas such as:

- Investigating and critically evaluating data and information using the necessary technologies.
- Adapting to new situations.
- Decision-making capabilities.
- Individual and teamwork skills.
- Project design and management.
- Respect for the natural environment.

(3) SYLLABUS

- Introduction to transportation planning
- Data collection
- Sampling techniques
- Trip generation
- Trip distribution
- Modal split (allocation to transport modes)
- Network assignment
- Activity-based travel demand models
- Organizational framework of transportation in Greece and Europe

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	In classroom
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	Use of the course website (e-class) • Presentation and demonstration of intelligent systems (e.g., videos, software) • Instructor-student communication through electronic means (e.g., email)
TEACHING METHODS <i>The manner and methods of teaching are described in detail.</i> <i>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i> <i>The student's study hours for each learning activity are given as well as the</i>	Activity Semester Workload • Lectures (attendance) 56 hours • Lectures (preparation outside of class hours) 42 hours • Semester project 24 hours • Exam preparation 16 hours • Educational visit 8 hours • Exams 4 hours Total Course Workload 150 hours

<i>hours of non- directed study according to the principles of the ECTS</i>	
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure <i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open- ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i> <i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i>	Student evaluation is conducted through two alternative assessment methods: Method A: • Assignments during the semester (35%) • Semester project (35%) • Written exam at the end of the semester (30%) Method B: • Assignments during the semester (35%) • Written exam at the end of the semester (65%)

(5) SUGGESTED BIBLIOGRAPHY

-Suggested bibliography:

- Α. Σταθόπουλος, Μ. Καρλαύτης, Σχεδιασμός Μεταφορικών Συστημάτων, Παπασωτηρίου, Αθήνα 2008.
- Juan de Dios Ortúzar, Luis G. Willumsen, Modelling Transport, 4th Edition, ISBN: 978-0-470-76039-0, Apr 2011, 607 pages
- Trip generation, Institute of Transportation Engineers ITE, 2000.
- Hensher, D.A. and Button, K.J. (Ed.) Handbook of Transport Modelling (, Vol. 1), Emerald Group Publishing Limited, Leeds, p. i. <https://doi.org/10.1108/9780857245670-041>

- Related academic journals:

- Transportation Research Part A: Policy and Practice
- Transportation Research Part B: Methodological
- Transportation Research Part C: Emerging Technologies
- Transportation Research Part D: Transport and Environment
- Transportation Research Part E: Logistics and Transportation Review
- Transportation Research Part F: Traffic Psychology and Behavior
- Transport Reviews
- Transportation Research Record
- Transportation
- Transport
- Journal of Travel Research
- Transportation Science
- Transportation Planning and Technology
- International Journal of Sustainable Transportation
- Journal of International Transportation