(B) Course information in english

General course information:

Course title:	Design of Special Transport Infrastructure	**Course code:**	ΣΥ0110
Credits:	6	**Work load (hours):**	150

Course level:	Undergraduate	☑	Graduate	☐
Course type:	Mandatory	☐	Selective	☑
Course category:	Basic	☐	Orientation	☑

Semester:	9th	**Hours per week:**	4

Course objectives (capabilities pursued and learning results):

The objective of this course is to provide knowledge on the design of special transport infrastructure. The course includes an introduction to the hierarchy of transport infrastructure with emphasis on special road projects, and the corresponding planning policies, addressing international, European and national standards. The design of complex transport infrastructure cases is analyzed, such as road tunnels, heavy vehicles parking (trucks, coaches), access to areas with special uses, charging stations for vehicles, and the required traffic settings in industrial and logistics parks. The foreseen maintenance specifications are also introduced.

Upon successful completion of the course, students will:

- have understood the basic principles and specifications of the design of special transport infrastructure,
- be familiar with the concept of access to areas with special uses or facilities, where multimodal transportation takes place,
- have acquired the ability to identify, analyze and interpret relevant national, European and international legal frameworks,
- have acquired the required basic knowledge for further specialization in the course's topics.

Prerequisites:

Traffic engineering
Highway engineering I
Highway engineering II
Design and evaluation of transportation systems

Instructor's data:

Name:	Dr. Ioannis Adamos
Level:	Teaching Staff
Office:	Department of Civil Engineering (Office no. 111) University of Thessaly Pedion Areos, GR-38334 Volos, Greece
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Other tutors:	-

Specific course information:

Week No.	Course contents	Hours	
		Course attendance	Preparation
1	Introduction	4	1
2	Hierarchy of transport infrastructure	4	1
3	Policy on transport infrastructure design	4	1
4	Road tunnel design: geometry	4	1
5	Road tunnel design: operation and maintenance	4	1
6	Road tunnel design: hazardous material transportation	4	1
7	Parking of heavy vehicles	4	1
8	Parking of coaches and long vehicles	4	1
9	Vehicles' charging stations: urban environment	4	1
10	Vehicles' charging stations: interurban environment	4	1
11	Access to areas with special uses	4	1
12	Traffic settings in industrial areas and parks	4	1
13	Traffic settings in logistics centers	4	1
14	Maintenance of special transport infrastructure	4	1

Additional hours for:			
Class project	**Examinations**	**Preparation for examinations**	**Educational visit**
55	3	22	-

Suggested literature:
• R. Elvik, A. Høye, T. Vaa, M. Sørensen (2009) «The handbook of road safety measures». 2nd Edition, Emerald Publishing, ISBN: 978-1848552500. • M.G. Lay (2009) «Handbook of road technology». 4th Edition, CRC Press, ISBN: ISBN 9780415472654. • CALTRANS (2018) «Highway design manual». 6th Edition, California Department of Transportation, USA. • American Association of State Highway and Transportation Officials (AASHTO) (2018) «A policy on geometric design of highways and streets». 7th Edition, AASHTO, ISBN-13: 978-1560516767. • J. Xundong, C. Wen, G. Ming (2012) «Highway geometric design: application of design standards in Inroads». Kendall Hunt Publishing, ISBN-13: 978-1465209641. • W. Kühn (2013) «Fundamentals of road design». WITPress, ISBN: 978-1-84564-097-2.

Teaching method *(select and describe if necessary -* **weight***):*		
Teaching	☑	80%
Seminars	☐	0%
Demonstrations	☐	0%
Laboratory	☐	0%
Exercises	☑	20%
Visits at facilities	☐	0%
Other *(describe):* …….	☐	0%
Total		100%

Evaluation method *(select)* - **weight:**				
	written	*%*	*Oral*	*%*
Homework	☐	0	☐	
Class project	☑	40	☑	10
Interim examination	☐	0	☐	
Final examinations	☑	50	☐	
Other *(describe):* ……	☐	0	☐	