

## COURSE OUTLINE

### (1) GENERAL

|                                                                                                                                                                                                                                                                       |                                 |                              |                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|------------------------------|----------------|
| <b>SCHOOL</b>                                                                                                                                                                                                                                                         | UNIVERSITY OF THESSALY          |                              |                |
| <b>ACADEMIC UNIT</b>                                                                                                                                                                                                                                                  | DEPARTMENT OF CIVIL ENGINEERING |                              |                |
| <b>LEVEL OF STUDIES</b>                                                                                                                                                                                                                                               | UNDERGRADUATE                   |                              |                |
| <b>COURSE CODE</b>                                                                                                                                                                                                                                                    | ΣΥ1210                          | <b>SEMESTER</b>              | 8              |
| <b>COURSE TITLE</b>                                                                                                                                                                                                                                                   | Sustainable Urban Mobility      |                              |                |
| <b>INDEPENDENT TEACHING ACTIVITIES</b><br><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> |                                 | <b>WEEKLY TEACHING HOURS</b> | <b>CREDITS</b> |
| Lectures                                                                                                                                                                                                                                                              |                                 | 4                            | 5              |
|                                                                                                                                                                                                                                                                       |                                 |                              |                |
|                                                                                                                                                                                                                                                                       |                                 |                              |                |
| <i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>                                                                                                                                              |                                 |                              |                |
| <b>COURSE TYPE</b><br><i>general background, special background, specialized general knowledge, skills development</i>                                                                                                                                                | Specialized general knowledge   |                              |                |
| <b>PREREQUISITE COURSES:</b>                                                                                                                                                                                                                                          | -                               |                              |                |
| <b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>                                                                                                                                                                                                                      | Greek                           |                              |                |
| <b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>                                                                                                                                                                                                                      | Yes                             |                              |                |
| <b>COURSE WEBSITE (URL)</b>                                                                                                                                                                                                                                           | -                               |                              |                |

### (2) LEARNING OUTCOMES

#### Learning outcomes

*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.*

*Consult Appendix A*

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

Upon completion of the course, students will be able to:

- Understand and explain the shortcomings of conventional transport approaches in achieving sustainable mobility.
- Gain knowledge in the design of non-motorized transport infrastructure.
- Explain the key factors influencing travel choices and road user behaviour.
- Become familiar with the collection, analysis and synthesis of data and results necessary for sustainable transport planning.
- Become familiar with new technologies that can be applied to transport.
- Understand and apply the basic principles of a Sustainable Urban Mobility Plan.

**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>Working in an interdisciplinary environment</i>                                                          | <i>.....</i>                                                                                    |
| <i>Production of new research ideas</i>                                                                     | <i>Others...</i>                                                                                |
|                                                                                                             | <i>*****</i>                                                                                    |

- Search for, analysis and synthesis of data and information, with the use of the necessary technology.
- Adapting to new situations.
- Decision-making.
- Team work.
- Generating new research ideas.
- Project planning and management
- Respect for the natural environment

**(3) SYLLABUS**

- i. European transport policy framework: transport - energy - environment - security - economy.
- ii. Sustainable development and sustainable mobility: a) basic concepts, definitions, b) alternative modes of transport.
- iii. Behavioural analysis.
- iv. Stated and revealed preference surveys.
- v. Micromobility (cycling, walking).
- vi. Safe travel to school.
- vii. Shared mobility systems: design, operation, evaluation (bus rapid transit, light rail, car sharing, bike sharing, car pooling).
- viii. energy and environment (air quality, climate change, noise, clean fuels, alternative technologies).
- ix. Use of intelligent transport systems to enhance sustainable mobility.
- x. Analysis of pedestrian level of service.
- xi. Analysis of bicycle level of service.
- xii. Sustainable Urban Mobility Plans and their implementation in Greece.

**(4) TEACHING and LEARNING METHODS - EVALUATION**

|                                                                                                                                             |                                                                                                                                                              |                          |
|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <b>DELIVERY</b><br><i>Face-to-face, Distance learning, etc.</i>                                                                             | Face-to-face                                                                                                                                                 |                          |
| <b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b><br><i>Use of ICT in teaching, laboratory education, communication with students</i> | Lectures with PowerPoint, Notes, Exercises and Module announcements in e-class.<br>Use of ICT in Teaching, Laboratory Training, Communication with students. |                          |
| <b>TEACHING METHODS</b><br><i>The manner and methods of teaching</i>                                                                        | <i>Activity</i>                                                                                                                                              | <i>Semester workload</i> |
|                                                                                                                                             |                                                                                                                                                              |                          |

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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <p><i>are described in detail.</i><br/> <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></p> <p><i>The student's study hours for each learning activity are given as well as the hours of non- directed study according to the principles of the ECTS</i></p>                                                                                             | Lectures                                                                                                                                                                                                                                                                                                                                                    | 56  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | General preparation                                                                                                                                                                                                                                                                                                                                         | 20  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Project                                                                                                                                                                                                                                                                                                                                                     | 30  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Examinations                                                                                                                                                                                                                                                                                                                                                | 3   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Exam preparation                                                                                                                                                                                                                                                                                                                                            | 21  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                             |     |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                             |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Course total                                                                                                                                                                                                                                                                                                                                                | 130 |
| <p><b>STUDENT PERFORMANCE EVALUATION</b></p> <p><b>Description of the evaluation procedure</b></p> <p><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></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p> | <p>Student evaluation is conducted via:</p> <ul style="list-style-type: none"> <li>- Semester project.</li> <li>- Written examination at the end of the semester.</li> </ul> <p>The written examination includes:</p> <ul style="list-style-type: none"> <li>- Multiple choice questions.</li> <li>- Open-ended questions.</li> <li>- Exercises.</li> </ul> |     |

## (5) ATTACHED BIBLIOGRAPHY

### -Suggested bibliography:

- T. Vlastos & E. Bakoyannis (2019) "Towards a Greece with fewer cars". Grigoris Publications, ISBN: 978-960-612-248-4. (in Greek)
- S. Tsetsis (2013) "Green transport in cities". A. Papasotiriou & SIA I.K.E. Publications, ISBN: 978-960-491-077-9. (in Greek)
- Attard, M. & Shiftan, Y. (Ed.) (2015) «Sustainable Urban Transport». Emerald, ISBN: 978-1-78441- 616-4.
- Wheeler, S. & Beatley, T. (Ed.) (2014) «The Sustainable Urban Development Reader». Routledge, ISBN: 978-0-415-70775-6.
- Kliučininkas, L. (2012) «Towards Sustainable Urban Transportation–Environmental Dimension». Peter Land, ISBN: 978-3-631-62367-1.
- Monzon, A. & Di Ciommo, F. (Ed.) (2015) «CITY-HUBs: Sustainable and Efficient Interchange Stations». Taylor and Francis Group, ISBN: 978-1-4987-4084-5.
- Cascetta, E. (2009) «Transportation system analysis: models and applications», 2nd edition. Springer, ISBN: 978-0-387-75856-5.
- Meyer M., Miller E. (2000) «Urban transportation planning», 2nd Edition. McGraw-Hill Series in Transportation, ISBN: 978-0072423327.
- Black, W. (2010) «Sustainable Transportation: Problems and Solutions». The Guilford Press, ISBN: 978-1606234853.
- Holden, E. (2007) «Achieving Sustainable Mobility: Everyday and Leisure-time travel in EU». Ashgate, ISBN: 978-0-7546-4941-0.

### - Related academic journals:

- International Journal of Sustainable Transportation
- Transport and Sustainability
- Transportation Planning and Technology
- Journal of Urban Mobility
- Transportation
- Transportation Research: Part A: Policy and Practice
- Transportation Research: Part C: Emerging Technologies
- Transportation Research: Part D: Transport and Environment
- Accident Analysis and Prevention
- Transport Policy

