COURSE OUTLINE

(1) GENERAL

SCHOOL	Business School		
ACADEMIC UNIT	Department of Shipping, Trade & Transportation		
LEVEL OF STUDIES	Graduate		
COURSE CODE	ΔΙ0022	SEMESTER	8th
COURSE TITLE	Decision-making in Transportation		

INDEPENDENT TEACHING ACTIVITIES	WEEKLY TEACHING HOURS	CREDITS
	3	5
	3	5

COURSE TYPE	SUBJECT AREA COURSE
PREREQUISITE COURSES:	Not Applicable
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes, if there is interest
COURSE WEBSITE (URL)	https://eclass.aegean.gr/courses/TNEY196/

(2) LEARNING OUTCOMES

Learning outcomes
This course aims at the analysis of fundamental parameters affecting decision making in transport. Learning Outcome: After completing this course, students should be able to understand the principles of decision making in transport. This includes policy and infrastructure impact assessment and appraisal.
General Competences
The course aims to develop the following general competencies: • Analyze and synthesize data using new technologies and specialized analysis tools • Flexibility and adaptability to new situations • Autonomous work • Teamwork and interaction with partners • Internationalization of quality standards • Promote free, creative and inductive thinking

(3) SYLLABUS

Originally, key theoretical elements and notions are presented followed by the most important decision support methods and tools. Particular emphasis is laid on the principles of these methods as well as their competitive advantages and disadvantages.

Common decision problems in transport are presented next; distinction is made between strategic and technical decision making.

Finally, application examples of well-established multicriteria and cost-benefit analysis methods are given on selected transportation projects and policies in Greece and worldwide.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	Lectures, work assignments and remedial courses.
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	Use is made of the asynchronous e-Class platform and e-mail communication. Specialized tools, licensed for educational purposes or freely available, are also employed.
TEACHING METHODS	
STUDENT PERFORMANCE EVALUATION	Student evaluation is done through: • Written examination at the end of the semester • Scoring of the work assignments • Oral examination (if necessary) The language of examination is Greek unless students are attending from the ERASMUS program, so the test is taken in English.

Activity	*Semester workload*
Lectures	39
Work assignments	30
Remedial courses	10
Literature study & analysis	50
Course total	*129*

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

Lecture notes are available in two parts:

- Part I: General Methodologies
- Part II: Evaluation Process

Additional literature is suggested for those who wish to go deeper. Readings include:

- Anderson G., Bishop R. (1986): "The evaluation problem" in Bromley D., "Natural resource economics", Kluwer-Nijhoff, Boston, pp.27-48.
- Bana e Costa C.A., (1990a): "Readings in multiple criteria decision aid", Springer-Verlag, Berlin.
- Banister, D. (1997): "Decision Makers Requirements for Assessment", European Commission, SAMI Project.
- Bellman R.E., Zadeh L.A., (1970): "Decision-making in a fuzzy environment", Management Science, 17, pp.141-164.

- Beuthe M., Eeckhoudt L. and Scannella G. (1997): “Uncertainty in Project Assessment”, European Commission, EUNET-SASI project.
- Bristow, A. L. and Nellthorp, J. (2000): “Transport project appraisal in the European Union”, Transport Policy, 7, 51-60.
- De Brucker K., Macharis C., Verbeke A. (2011): Multi-criteria analysis in transport project evaluation: an institutional approach European Transport / Trasporti Europei, n.47, 3-24
- Guhnemann A., Laird J.J. and Pearman A.D. (2012): “Combining cost-benefit and multi-criteria analysis to prioritise a national road infrastructure programme”, Transport Policy, vol. 23, pp. 15–24.
- Hanley N. (1992): “Are there environmental limits to cost-benefit analysis?”, Environmental and Resource Economics, 2, pp.33-59.
- Hinloopen E., Nijkamp P., Rietveld P. (1983): “Qualitative discrete multiple criteria choice models in regional planning”, Regional Science and Urban Economics, 13, North-Holland, Amsterdam, pp.77-102.
- Munda G. (1995): “Multicriteria evaluation in a fuzzy environment”, Physica-Verlag, Heidelberg.
- Nijkamp P., Rietveld P., and Voogd H., (1990): “Multicriteria evaluation in physical planning”, North-Holland, Amsterdam.
- Paelinck J.H.P. (1978): “Qualiflex: a flexible multiple criteria method”, Economic Letters, North-Holland, Amsterdam, pp.193-197.
- Roy B. (1990a): “The outranking approach and the foundations of ELECTRE methods”, in Bana e Costa C.A. (ed.), “Readings in multiple criteria decision aid”, Springer-Verlag, Berlin, pp.155-183.
- Saaty T.L. (1980): “The analytic Hierarchy process”, McGraw Hill, New York.
- Voogd H. (1983): “Multicriteria evaluation for urban and regional planning”, Pion, London.
- Zeleny M. (1982): “Multiple criteria decision-making”, McGraw Hill, New York.

- Related academic journals:

- Journal of Multi-Criteria Decision Analysis
- Journal of Operations Research
- Journal of Management Science
- Transportation Research: Parts A: Policy and Practice
- Transportation Research: Parts D: Transport and Environment
- International Journal of Sustainable Transportation
- Transportation Research Record
- Transport Policy
- Journal of European Transport
- Transportation Science
- Transport Reviews