

COURSE OUTLINE

(1) GENERAL

SCHOOL	UNIVERSITY OF THESSALY		
ACADEMIC UNIT	DEPARTMENT OF CIVIL ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	ΣΥ1310	SEMESTER	7
COURSE TITLE	Environmental impact assessment studies for Transport Infrastructure		
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		4	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>	Specialized general knowledge		
PREREQUISITE COURSES:	Environmental Engineering, Highway Engineering I and II, Traffic Engineering		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)			

(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>
Institutional framework for environmental protection in Greece - Stages in the preparation of preliminary studies and environmental impact studies for transport projects of road transport systems. Basic modules of environmental impact assessment of road construction projects. Organisation of contents of EIAs for road projects - competent bodies & services. Land Use, Road Traffic Noise and Vibration, European Technical Legislation for Environmental Noise Prediction and Assessment Metrology & Prediction Models. Air Pollution : Basic Air Pollutants - Diffusion Models. Aesthetic pollution & integration of road projects into the landscape. Anti-pollution measures & Monitoring Programmes.

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 thinking</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
- Independent & Teamwork with the ability to generate new research ideas Project planning and management
- Respect for the natural and man-made environment
- Promotion of free, creative and inductive thinking

(3) SYLLABUS

THE INSTITUTIONAL FRAMEWORK FOR THE PROTECTION OF THE ENVIRONMENT IN GREECE

STAGES IN THE PREPARATION OF PRELIMINARY DESIGN & ENVIRONMENTAL IMPACT STUDIES FOR ROAD WORKS

KEY ELEMENTS OF THE ENVIRONMENTAL IMPACT OF ROAD WORKS

LAND USE - NATURAL & MAN-MADE ECOSYSTEMS

SPATIAL PATTERN & EFFECTS ON TOPOGRAPHY

ROAD TRAFFIC NOISE & VIBRATIONS

MEASUREMENT AND ASSESSMENT OF STATIONARY NOISE

ROAD TRAFFIC NOISE CALCULATION METHODS (ROAD CONSTRUCTION - OPERATION)

ANTI-NOISE BARRIERS

ROAD TRAFFIC NOISE MONITORING SYSTEMS

THE APPLICATION OF THE ATTICA ROAD

AIR POLLUTION - GASEOUS POLLUTANTS FROM ROAD TRAFFIC

EMISSION, POLLUTION CONCENTRATION, POLLUTION CONCENTRATION, POLLUTION DISPERSION & DISPERSION PARAMETERS

ASSESSMENT OF THE EFFECTS ON AIR QUALITY

CONSTRUCTION PHASE - EMITTED POLLUTION LOAD & OPERATIONAL PHASE

AESTHETIC POLLUTION - INTEGRATION INTO THE LANDSCAPE

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face-to-face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	Yes	
TEACHING METHODS <i>The manner and methods of teaching are described in detail. 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 hours of non- directed study according to the principles of the ECTS</i>	Activity	Semester workload
	Lectures	40%
	Laboratory	10%
	Fieldwork	40%
	Visits	10%
	Course total	100%
STUDENT PERFORMANCE EVALUATION	Semester project (100%)	
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>		

(5) ATTACHED BIBLIOGRAPHY

-Suggested bibliography:

- COST, "Long - Term Performance of Road Pavements", Preliminary Report, Action 324 of the European Commission, 1997.
- PIARC, "Surface Characteristics", Report C1, Permanent International Association of Road Congress, 1987.
- ASTM, "Road and Paving Materials; Vehicle Pavement Systems", Annual Book of ASTM Standards, Vol. 04.03, 1997.

- Related academic journals:

Transportation Research Part D