



1. Subject name	Environmental effects of transport				
2. Subject name in Hungarian	Közlekedés környezeti hatásai				
3. Code	BMEKOKKM230	4. Evaluation type	mid-term grade	5. Credits	4
6. Weekly contact hours	2 (9) Lecture	1 (5) Practice	0 (0) Lab		
7. Curriculum	Transportation Engineering MSc (K)	8. Role	Specialization (sp) at Transportation Engineering MSc (K)		
9. Working hours for fulfilling the requirements of the subject					120
Contact hours	42	Preparation for seminars	8	Homework	19
Reading written materials	45	Midterm preparation	6	Exam preparation	0
10. Department	Department of Transport Technology and Economics				
11. Responsible lecturer	Dr. Tóth János				
12. Lecturers	Dr. Mészáros Péter				
13. Prerequisites					
14. Description of lectures					
<p>Transport- environment, factors of environmental impact, the problem of sustainability. Mitigation of environmental impacts of transport, regulations, policies, tendencies, practices. Local and international case studies. EIA, decision making, preparation of decisions on the field of transport infrastructure development. Integration of transport and land use policies. Environmental conflicts of freight transport, intermodality and transit policies. Environmental costs of transport, the case of externalities, prices and charges. Urban transport, opportunities of sustainable urban environmental management, integration of environmentally sound mobility forms. Sustainable Urban Mobility Plans. Demand management, parking and road charges. Requirements of fuel efficiency, alternative fuels, energy efficient and environmentally enhanced vehicles.</p>					
15. Description of practices					
<p>Internal and external discussions, consultations with experts and representatives of firms, institutions dealing with transport environmental impact, referring to certain elements of the curricula.</p>					
16. Description of laboratory practices					
17. Learning outcomes					

A. Knowledge

- Environmental impact factors of transport, manifestations, physical, and health effects.
- Components of sustainability, the transportation oriented elements of the three main fields, criteria.
- Regulation elements of the impact mitigation, main fields, methods, management and approach methods on the field of transport.
- Elements of impact assessment process, in the case of transport infrastructure development, national and international regulation.
- Planning integration in the joint approach of transport, environment and land use planning.
- Opportunities of moderation, and management of environmental impacts of freight transport, methods and technics in the three main directions and those application.
- Internalisation of external costs of transport, methods, regulation opportunities, techniques, methodologies.
- Relationship of sustainable urban environmental management and transport, methods of reduction of urban environmental impacts, techniques.
- Soft mobility forms in the mobility structure, supporting environment, infrastructure, regulation opportunities.
- Physical and technical knowledges on the field of transport noise, methods of noise protection, regulation opportunities, techniques of prevention.
- Sustainable driving modes, components of fuel structures, technical and regulatory questions.

B. Skills

- Shift of planning and development of transport systems towards environmentally sound directions, in the frame of the future individual and team work.

- Ability of preference of environmental principles during management of existing transport systems and infrastructures, in favor of sustainability and safeguarding of natural, built and social environment.
- Application, reception and development of regulation and planning methods, for the management and reduction of environmental impacts of elements of transport verticum.

C. Attitudes

- Openness and sensitivity to tasks and conflict management of environmental impacts of transport, and to reception, application and development of innovative solutions.
- Basic approach at development of transport infrastructures and at management of existing systems, the reduction of those environmental impacts, management of environmental costs and external impacts.
- Representation and enforcement of prevention principle, on the field of daily decisions and communication, regarding transport impacts.

D. Autonomy and Responsibility

- Self-motivated, responsible and exemplary behaviour, in the creative engineering work, in research and development processes, and renewal of existing systems, regarding application and dissemination of sustainability principles on transport.
- Independent and self-motivated behaviour on the fields of transport innovation, focusing on principles and values of sustainability, natural resource protection and safeguarding the society.
- Adequate responsibility in the decision making process, the preparation and making of decisions with particular attention to the long term consequences of decisions and awareness raising

18. Requirements, way to determine a grade (obtain a signature)

Midterm written test is passed and the fulfilled and presented assignment. The semester mark is the average of midterm written test and assignment results.

19. Opportunity for repeat/retake and delayed completion

Supplementary submission and presentation of semester papers, assignments and fulfilment of failed or not acceptable written tests, during the supplementary week

20. Learning materials

Lecture notes, presentation and further professional materials in electronic form

Effective date	10 October 2019	This Subject Datasheet is valid for	2024/2025 semester II
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