BUDAPESTI MŰSZAKI ÉS GAZDASÁGTUDOMÁNYI EGYETEM
Közlekedésmérnöki és Járműmérnöki Kar

Data sheet of the subject

1. Name of the subject	**BME - MOME Vehicle Design - Micromobility**				
2. Name in Hungarian	BME – MOME Járműtervezés - Mikromobilitás			**3. Role**	**szv**
4. Code of subject	**BME…**	**5. Requirement**	**f**	**6. credit**	**2**
7. Number of hours (correspondence course)	**0 lecture**	**2 practical exercises**	**0 laboratory**	**8. Curriculum**	**j**

9. Total hours required to complete the subject					**60 hours**
Contact hours	28 hours	**Preparations**	16 hours	**Homework**	16 hours
Written material	0 hours	**Preparation for test**	hours	**Preparation for exam**	0 hours

10. Responsible Department	Department of Automotive Technologies
11. Responsible teacher	Máté ZÖLDY, DSc., habil
12. Teacher(s)	Máté ZÖLDY DSc habil, Ádám NYERGES, András HÚNFALVY, Dániel RUPPERT

13. Preconditions	For KJK students, at least satisfactory grades in the BSc level in Automotive Operation II (KOGJA518) or MSc level in Automotive Instrumentation (KOGGM668). For students from other faculties, proof of equivalent knowledge must be provided in a written assessment at the beginning of the registration week. Subject areas: vehicle structure, design, function and function of major components (Bohner et al: Vehicle Structures ISBN 9789631618679)

14. Topics of the lectures

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15. Topics of practical exercises

The course is taught cooperatively with the MOME Vehicle Development research group. Students from both universities form mixed teams to identify possible concepts, from which the teams select the subject of the semester's work. The design elements will be developed by MOME students, the technical content by BME students in close cooperation, under the supervision of a subject leader.

The tasks are to determine the main dimensions of the chosen micromobility vehicle, perform vehicle dynamics and finite element calculations, dimensioning, and create component drawings.

During the course, they will plan for personal transport in the near future, taking into account social, cultural and market conditions. At the end of the semester, a concept vehicle will be presented through visual designs and model sketches.

Weeks 1-2: concept creation with students of the MOME Micromobility course 3x0,5 days WS on Fridays, alternating locations

1. micromobility in general + urbanism + engineering + design - getting to know each other - identifying challenges
2. engineering, design thinking WS and team building

Weeks 3-4: research, topic selection, conceptualisation

Week 5: concept freeze and presentation

Weeks 6-10: concept detailing

Week 11: final presentation together

weeks 12-13: component drawings

Week 14: mechanical presentation of component drawings

16. Topics of Laboratory exercises

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17. Expected results

a) Knowledge:

- comprehensive knowledge of micromobility tools

b) Ability:

- Ability to design complex systems in collaboration with co-disciplinarians

c) Attitude:

- ability to work in a team and with other professionals. ability to communicate with designers within a project framework.

d) Autonomy and responsibility:

- participation in the solution of sub-tasks

18. Requirements, regarding notes of performance for the students

In justified and verifiable cases, a maximum of 30% absence is permitted, according to the TVSZ rate.

The grade will be based on the evaluation of the three mid-term presentations (concept freeze, final presentation, mechanical presentation) in a 30-50-20% ratio.

The presentations can be made up in the week following the deadlines detailed above.

19. Options for correction

The presentations can be made up in the week following the deadlines detailed above.

20. Lecture notes, books, literature

Neil Sclater: Mechanisms and Mechanical Devices Sourcebook, ISBN 978-0071704427

Seregély K: A mikromobilitás helyzete Budapesten 2016 és 2021 között, https://repozitorium.omikk.bme.hu/bitstream/handle/10890/17737/1027214556.pdf?sequence=1&isAllowed=y