1. Subject name	# System technique and analysis				
2. Subject name in Hungarian	Rendszertechnika és rendszeranalízis				
3. Code	**BMEKOVRM129**	**4. Evaluation type**	mid-term grade	**5. Credits**	**4**
6. Weekly contact hours	**2 (9) Lecture**	**2 (5) Practice**	**0 (0) Lab**		
7. Curriculum	**Vehicle Engineering MSc (J)**	**8. Role**	**Mandatory (mc) at Vehicle Engineering MSc (J)**		

9. Working hours for fulfilling the requirements of the subject				**120**	
Contact hours	56	**Preparation for seminars**	12	**Homework**	0
Reading written materials	40	**Midterm preparation**	12	**Exam preparation**	0

10. Department	**Department of Aeronautics and Naval Architectures**
11. Responsible lecturer	Dr. Zobory István
12. Lecturers	Dr. Zobory István
13. Prerequisites	

14. Description of lectures

Characterisation of engineering systems by block-diagrams, structure graps and sigjnal-flow graphs. Construction of the input-output system equations. Application of Lagrangean procedure. The theoryh of linear dynamic systems. Weighting function, transition function in the time domain. Convolution theorem. Complex frequency function in the frequency domain. Periodic, aperiodic and stationary stochastic excitations. Determination of the system response. Elements of the coherency analysis.

15. Description of practices

Exercising of the theoretical material by the solving of the numerical examples.

16. Description of labortory practices

17. Learning outcomes

A. Knowledge
- Understands and applies the mathematical and scientific principles and procedures of system technique and system analysis.
- Understands and can apply in a wide circle the theories and terminologies elaborated for professional area of system technique and system analysis.
- Knows and understands the basic facts, limits and development possibilities of system technique and system analysis.
- Knows and is capable to understand in details the methods of modelling in system technique and system analysis.

B. Skills
- Able to apply in an innovative way the required mathematical and scientific principles as well as procedures for solving problems connected with system technique.
- Able to apply, analyze and evaluate the methods applied in the field of system analysis.
- Shows ability to apply integrated knowledges in the field of system analysis.

C. Attitudes
- Open and receptive to know and to pass on the developments and innovations which are taken place on the field of system technique. The sense of vocation is depth.
- Accepts the professional and ethical values-system connected with the professional area of vehicle engineering.
- Pursuing to use complex and on system-oriented mentality based approach to technical processes.

D. Autonomy and Responsibility
- Pro-activity in professional work, self-standing selection and application of solution methods.
- Making decision circumspectly and with responsibility.

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

During the semester necessary the active participation at the class (attitude), and during the semester there is two midterm

tests for evaluating the knowledge, the ability, the autonomy and the attitude. The attitude and the autonomy mean 15-15 % and the knowledge and the ability mean 35-35 % in the final classification.

19. Opportunity for repeat/retake and delayed completion

Possibility to refit the midterm tests.

20. Learning materials

Zobory I.: Rendszertechnika és rendszeranalízis. Department's publication of BME VJT. Budapest, 20-
Zobory I.: Gépészeti rendszertechnika. Jegyzet.Department's publication of BME VJT, Bp. 199-
Szabó I. szerk.: Gépészeti rendszertechnika. Technical Publisher, Bp. 198-
Further publications od Department.

| Effective date | 10 October 2019 | This Subject Datasheet is valid for | Inactive courses |