Superstructure control technics

1. Subject name	Superstructure control technics				
2. Subject name in Hungarian	Felépítmények vezérléstechnikája				
3. Code	BMEKOJSM666	4. Evaluation type	mid-term grade	5. Credits	5
6. Weekly contact hours	2 (10) Lecture	0 (0) Practice	2 (11) Lab		
7. Curriculum	Vehicle Engineering MSc (J)	8. Role	Specialization (sp) at Vehicle Engineering MSc (J)		
9. Working hours for fulfilling the requirements of the subject					150
Contact hours	56	Preparation for seminars	18	Homework	50
Reading written materials	12	Midterm preparation	4	Exam preparation	10
10. Department	Department of Railway Vehicles and Vehicle System Analysis				
11. Responsible lecturer	Dr. Béda Péter				
12. Lecturers	Dr. Pápai Ferenc				
13. Prerequisites					

14. Description of lectures

Basics of hydraulic, electrohydraulic control and sensors. Basics of built in electrical devices. Recognition of limit cases for stability and load, impeachment of overloading, accident prevention.

15. Description of practices

16. Description of labortory practices

Individual and guided practice lessons

17. Learning outcomes

A. Knowledge

- the student knows the theory of the purely hydraulic control
- knows the elements of the hydrostatic drives: motors, pumps, cylinders, valves
- knows the electrhydraulic sensors, actuators and command units
- knows the layout and specifications of a superstructure electric network
- knows the stability and load limits of the superstructure
- knows about the rules for avoiding failures and accidents

B. Skills

- the student is able to understand the requirements for the electric, electronic and hydraulic systems of the superstructure
- is able to design electrical and hydraulic systems for a superstructure
- is able to recognize the stability and safety limit situations during the superstructure operation
- is able to design systems fulfilling the actual safelty rules

C. Attitudes

- the student makes an effort to gather all the available informations in a given domain
- cooperates with his fellow students and the teacher
- is open minded towards new and innovative ideas and researches
- uses informatical and computational devices for his work

D. Autonomy and Responsibility

- the student is conscient about his responsibility towards the society and his company
- asks for the colleagues' expertise and judgement when working
- considers challenges with responsibility

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

For signature: 2 semestrial homeworks, 2 midter tests with 50% result. Final mark equals to the result of the exam.

19. Opportunity for repeat/retake and delayed completion

Second test possibility for those not present on the test, possibility of delayed deadline for homework.

20. Learning materials

Lecture notes

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