

Faculty of Transportation Engineering and Vehicle Engineer

#### 1. Subject name **Design methods of drive systems** 2. Subject name Hajtórendszerek méretezése in Hungarian 5. Credits 3. Code **BMEKOALM646** 4. Evaluation type exam grade 3 1 (0) Practice 6. Weekly contact 2 (9) Lecture 0 (5) Lab hours Vehicle 7. Curriculum 8. Role Specialization (sp) at Vehicle Engineering MSc (J) **Engineering MSc** (J) 9. Working hours for fulfilling the requirements of the subject 90 **Contact hours** 42 **Preparation for** 11 **Homework** 20 seminars **Reading written** 3 **Midterm** 4 Exam preparation 10 materials preparation **Department of Material Handling and Logistics Systems 10. Department** 11. Responsible Dr. Bohács Gábor lecturer **12. Lecturers** Dr. Bohács Gábor, Dr. Gyimesi András, Gáspár Dániel **13. Prerequisites** 14. Description of lectures

Design and selection of conventional electric drives. DC drives and components implementing them. Application in construction and material handling machines. AC drives: Frequency converter, and servo drives. Setting options for frequency inverters. Hydraulic and hydrostatic propulsion systems. Traction and lifting drives. Elements of a special drive chain for construction and handling equipment, specifically illustrated examples. Design dimensions and design characteristics of the learnt drives.

## **15. Description of practices**

Presentation of working practices of industrial partners during plant visits. Parameter testing of electro-hydraulic system components. Testing of a regulated electric drive system.

## 16. Description of labortory practices

## **17. Learning outcomes**

## A. Knowledge

- Knowing typical drive systems in constructional and materials handling machines.
- Having comprehensive knowledge about the dimensioning and application of the drive systems.
- B. Skills
  - · Being able to select the most appropriate drive solution.
  - Being able dimension appropriately the drives.
- C. Attitudes
  - Working efficiently alone as a qualified responsible engineer.
  - Seeking for relations to other subjects.
  - Being open to use mathematical and informatic tools.
  - Seeking to know and learn the neccesary tools.
- D. Autonomy and Responsibility
  - Finding solutions alone.
    - Taking into considereations the effects of the decisions.
    - Applying systematic approach.

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

During the semester, a midterm test is taken. The end of semester signing is a minimum to provide a sufficient level of two semi-annual planning tasks and at least a satisfactory outcome of the midterm test. The exam pass is 20% a at home, 30% for homework and 50% for written examination, which students can, if necessary orally.

**19. Opportunity for repeat/retake and delayed completion** 

The homeworks' submission and the midterm test can both be resubmitted once.

20. Learning materials			
Students can download the subject notes in pdf format via Moodle.			
Effective date	10 October 2019	This Subject Datasheet is valid for	Inactive courses