

## Tárgytematika / Course Description Engine, Motor and Vehicle testing

AJNM\_BMTA037

Tárgyfelelős neve /

Teacher's name: dr. Tóth-Nagy Csaba

Félév / Semester: 2024/25/1

Beszámolási forma /

Assesment: Vizsga

Tárgy heti óraszám /

Teaching hours(week): 2/0/2

Tárgy féléves óraszám /

Teaching hours(sem.): 0/0/0

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### OKTATÁS CÉLJA / AIM OF THE COURSE

Students will get acquainted with the measuring methods and principles of vehicle, electric motors and internal combustion engines. Students will learn the featuring variables of these machines.

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### TANTÁRGY TARTALMA / DESCRIPTION

- 1.week: Vehicle strength tests (stress analysis, strain tests, fatigue, crash tests)
- 2.week: Vehicle acoustical tests (external and internal noise measurement, acoustic measuring rooms, vibration measurement)
- 3.week: Vehicle thermal and flow tests (temperature measurement procedures, flow measurement methods, wind tunnel tests)
- 4.week: Vehicle tests (prototype tests, standard tests, brand and concern tests, consumption and emissions tests)
- 5.week: Introduction to the measurement technology of internal combustion engine. Technical calculations.
- 6.week: Construction and operation of an engine test bench, specially designed test benches, component test.
- 7.week: Pressure indication in internal combustion engine.
- 8.week: Measurement of air pollutant emission, friction losses, determination of octan and cetan number of fuels.
- 9.week: Construction and operation of rotating electric machines.
- 10.week: Error sources of rotating electric machines. Electric machines overheating, noise and vibration.
- 11.week: Basics of measuring electric machines. Overview of basic electric quantities.
- 12.week: Construction and operation of electric machine test benches. Loads of these test benches.
- 13-14.week: Summary

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### SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESSMENT'S METHOD

exam, semester project, labor

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## KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL

### Obligatory literatur:

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## AJÁNLOTT IRODALOM / RECOMMENDED MATERIAL