

Tárgytematika / Course Description

Alternative Vehicles

AJNB_BMTA017

Tárgyfelelős neve /

Teacher's name: dr. Tóth-Nagy Csaba

Félév / Semester: 2020/21/2

Beszámolási forma /

Assesment: Vizsga

Tárgy heti óraszám /

Teaching hours(week): 2/0/0

Tárgy féléves óraszám /

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

OKTATÁS CÉLJA / AIM OF THE COURSE

The subject aims to equip future engineers with knowledge, skills and abilities that enable them to choose the architecture and size the main components of electric and hybrid electric vehicles working alone or in a team. Students will understand the operating principles of electric and hybrid electric vehicles. Furthermore, participants will understand the basic hybrid vehicle control strategies.

TANTÁRGY TARTALMA / DESCRIPTION

- 1.Week: Introduction to HEVs
- 2.Week: Energy converters, Energy storage devices
- 3.Week: Series Hybrid-electric drive systems
- 4.Week: Parallel Hybrid-electric drive systems
- 5.Week: Combination Hybrid-electric drive systems
- 6.Week: Power split Hybrid-electric drive systems
- 7.Week: Test 1
- 8.Week: Introduction to vehicle simulation
- 9.Week: Backward looking, Forward looking simulation methods
- 10.Week: Simulation model development
- 11.Week: Control strategies for HEVs
- 12.Week: Optimisation
- 13.Week: Testing principles of alternative vehicles, methodical differences, standards and recommended practices
- 14.Week: Test 2

SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESSMENT'S METHOD

- Homeworks (30%)
- Tests (30%)
- Exam (40%)

KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL

- Class notes, Iqbal Husain: Electric and Hybrid Vehicles (design fundamentals), Hybrid Drives, Fuel

Cells and Alternative Fuels (The Bosch Jellow Jackets)

- Everything on the internet
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