

Tárgytematika / Course Description

World of Engineers

AJNB_JFTA046

Tárgyfelelős neve /

Teacher's name: dr. Feszty Dániel

Félév / Semester: 2025/26/1

Beszámolási forma /

Assesment: Folyamatos számonkérés

Tárgy heti óraszám /

Teaching hours(week): 0/0/0

Tárgy féléves óraszám /

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

OKTATÁS CÉLJA / AIM OF THE COURSE

Aim of the course:

Introducing the purpose of the engineering profession
 Understanding the user perspective of a vehicle engineering product
 Introducing the engineering mindset
 Introducing the elements of the engineering creative process
 Understanding and defining vehicle requirements
 Understanding the impact of political decisions on the automotive industry
 Understanding the economic aspects of the automotive industry
 The history, present and prospects of the Hungarian automotive industry
 Understanding the philosophy of the automotive engineering program and the need for each subject and project
 Understanding the basics of project management and problem-solving techniques
 Understanding vehicle manufacturing processes
 Inspiring engineering students through case studies

TANTÁRGY TARTALMA / DESCRIPTION

Week	Topic	Lecturer
1	The purpose of the engineering profession: definition, social role, the difference between engineering and scientific activity, the differences between engineering BSc/MSc/PhD programs. Definition of the automotive engineering profession: its position in engineering disciplines and its relationship to other disciplines.	Dr. FESZTY, Daniel
2	Understanding the user perspective of a vehicle engineering product and its importance when initiating product development: customer analysis, market research, defining product requirements, customer service.	
3	Engineering mindset: systems vision, problem-solving-centered thinking, the role of basic sciences, engineering sciences, and design skills in engineering mindset.	
4	Elements of the automotive engineering creative process: conceptual design, detailed design, production process preparation, manufacturing, logistics, testing, quality assurance.	

5	Defining vehicle requirements: customer, legislative, country-specific, environmental, manufacturability, and repairability requirements, understanding them and the process of defining them.	Dr. FESZTY, Daniel
6	The impact of political decisions on the automotive industry: changes in environmental regulations and technological opportunities, government incentive programs, tariffs, megatrends.	
7	Economic aspects of the automotive industry: major automotive regions in the world, location of the Hungarian automotive industry, pricing and volume of products, the impact of development time and methods on price, virtual vs. prototype-based development, custom/small-batch/series production, turnover vs. profit	
8	Hungary's automotive industry: history, present and future opportunities, domestic automotive industry map, development centers, supply chain, engineering skills required by the industry, hard skills and soft skills	
9	Creation of technical documentation:	
10	Philosophy of the automotive engineering training program: understanding the need for individual subjects and projects, project-based education good practices	
11	Fundamentals of project management and problem-solving techniques: the process of planning and implementing projects, fundamentals of problem-solving techniques, Pareto, Ishikawa, etc.	
12	Fundamentals of vehicle manufacturing processes: production site selection criteria, logistics, infrastructure, just-in-time, engineering training strategies	
13	Case study 1: presentation of the history, present, product portfolio and main indicators of a domestic automotive company	
14	Case study 2: presentation of successful automotive engineering careers by guest speakers	

SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESMENT'S METHOD

KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL

AJÁNLOTT IRODALOM / RECOMMENDED MATERIAL