Automotive Process Analysis and Planning II

Code: MK3JFT2G04G317-EN

ECTS Credit Points: 4

Evaluation: exam

Year, Semester: 3. year, 2. semester

Its prerequisite(s): MK3JFT1G04G317

Further courses are built on it: No

Number of teaching hours/week (lecture + practice): 2+2

Topics:

The goal of the subject is to develop a process-oriented view in the students. During the lectures and practices the students get acquired with the operation management and the processes of a company. They acquire the methods of process development. During the practices they get routine in data collection techniques as well as process analysis and valuation.

Lean management, the Toyota production system. Waste in the production processes. The process of the value, value stream analysis. Introduction of Lean tools in the production: exploration of cause and effect relationships, Pareto diagram, Kaizen, PDCA cycle, Poka-yoke, TPM, problem solving techniques. Determination of process-data, valuation of processes. Determination of time-data. Quality management. Process control. Basics of ergonomics.

Literature:

Compulsory:

- William J. Stevenson: Operations management 10th ed. Boston : McGraw-Hill/Irwin

Recommended:

- James P.W.: Lean thinking, Free press, 2003

Schedule

1st week Registration week	
2nd week: **Lecture:** Basics and principles of the Lean management. **Practice:** Introduction into the principles of the Lean philosophy. Simulation in teamwork.	**3rd week:** **Lecture:** The Toyota production system **Practice:** Making of Process flow charts.
4th week: **Lecture:** Definition of waste. Waste in the production processes. **Practice:** Identification of waste in production processes.	**5th week:** **Lecture:** The value, the process of the value, value stream analysis. **Practice:** Introduction of Poka-yoke techniques through case-studies.
6th week: **Lecture:** Lean tools in the production. Exploration of cause and effect relationships, Pareto diagram.	**7th week:** **Lecture:** Lean tools in the production. Kaizen, PDCA cycle, Poka-yoke, TPM.

Practice: Elaboration of exercise in the topic of Ishikawa diagram.	**Practice:** 5-Why method in the practice.
8th week: 1st drawing week	
9th week: **Lecture:** Problem solving techniques. **Practice:** Effective problem solving techniques in the practice.	**10th week:** **Lecture:** Valuation of processes, Key indicators. **Practice:** Analysis of production processes, FMEA.
11th week: **Lecture:** Determination of process-data **Practice:** Analysis of production processes. Realization pull-principle, cycle time calculation.	**12th week:** **Lecture:** Time recording techniques. System of predefined times. **Practice:** Time recording techniques in the practice.
13th week: **Lecture:** Quality management. Process control. **Practice:** Test	**14th week:** **Lecture:** Ergonomics. Introduction to the principles of ergonomically correct workplace-design. **Practice:** Ergonomic-valuation. Introduction to the ergonomically correct workplace-design through case-studies.
15th week: 2nd drawing week	

Requirements

A, for a signature:

Participation at **practice** is compulsory. Student must attend the practices and my not miss more than three practice during the semester. In case a student misses more than three, the subject will not be signed and the student must repeat the course. If student's behavior doesn't meet the requirements of active participation, the teacher may evaluate their participation as an absence due to the lack of active participation in class.

During the semester there is one test in the 13th week.

B, for grade:

The course ends in **exam.**