

Management in the automotive industry

Subject area: Business/management

University:	CTU
Level:	BA3, BA4, MA all years
Teaching mode:	hybrid: some students participate online, other students attend real-life
Instructor(s):	Oldřich Bronec, M. Eng., Ph.D.

Short description

This is a basic and overarching course in management in the automotive industry, which creates a framework for further managerial and technical courses focused on automotive industry

Full description

The course consists of fourteen lectures:

1. Introduction, basic concepts, modern trends in production management & car industry
2. Product management, production processes and their design
3. Production system technology
4. Material flows and logistics
5. Purchasing and supply chains
6. Production support processes, maintenance of machinery and equipment
7. Standardization of production processes, technological platforms, product & production personalization and localization
8. Technological innovations & production (car production) innovation management, specifics of innovations in car industry
9. Automation, robotics and digital production control including application of A.I. in production processes
10. Economic indicators of production and production management KPI's
11. Toyota Production System, Lean Management – practical application in the automotive industry
12. Quality management, environmental protection & sustainability, material and energy sustainability, hygiene and occupational safety, social responsibility in production; ecological sustainability and principals of circular economy: recycling and production carbon neutrality
13. Design of production systems, re-engineering of production processes and management of change
14. Course summary and conclusion

Learning outcomes

- Knowledge of the field of management of production (specifically focused onto the automotive industry)

- Gain not only theoretical but also practical knowledge and experience in the field
- The ability to apply this knowledge and skills within the management, planning, design, innovative management and re-engineering of engineering and car industry production
- The ability to personalize acquired knowledge and skills in the field of its future professional focus
- The ability to share specific production and operating system management tasks with experts and work in a team to solve them

The purpose of the course is to get acquainted with:

- Basic concepts of management of engineering production (car production)
- Engineering and mobility management
- The nature and design of engineering products (car products) and engineering and car production, multi-disciplinarity of the field in the age of electromobility
- The role of human and technological resources in engineering and car production
- The issue of material flows and logistics in the field
- Purchasing management and supply chains in the field
- Support processes, maintenance of machinery and equipment
- Production management: planning, organizing, sourcing, leadership, controlling • Design, innovation and re-engineering of the production systems and processes
- The issue of economics and economic metrics of engineering and car production, KPI system
- The issue of some contemporary trends, such as automation, robotics and digitization in the field
- The issue of comprehensive concepts of modern production, such as Toyota Production System
- Issues of quality management, environmental protection & sustainability, material and energy sustainability, hygiene and occupational safety, and social responsibility in production, etc.

General information

Contact hours per week: 4

Total workload: 150 (in student hours for the whole course)

ECTS credits: 6

Language: English

Course start date: 19 September 2022

Course end date: 15 January 2023

Add. info about start date: Start course date refers to start of the semester at CTU. Schedules will be available 1-2 weeks before semester starts. Lectures are taken place from 19.9.2022 until 15.1.2023. Examination period from 16.1.2023 until 19.2.2023.

Weekly teaching day/time:

Time zone: CET (Denmark, Germany, France, Netherlands, Switzerland, Czech Republic)

Further information: Presentations available on MS Teams Presentations of selected companies and experts in automotive industry Recordings of previous expert presentations Visit to the production plant

Prerequisites: The course does not require any preliminary knowledge; technical knowledge of the engineering and car industry is welcomed

Activities and methods: Lectures, Seminars, Exercises

Presence on campus:

Final examination

Form: written and oral exam

Date:

Location/format:

Re-sit possibility:

Transcript available: end of semester

Add. info/requirements:

- Upon completion of the course, students will take a written test, followed by an oral examination; at the end of the course, students will be asked to submit a seminar paper
- A seminar paper carried out in cooperation with a company from the automotive

Registration

To register for this course, follow the registration requirements of your **home university** as specified here: www.euroteq.eu/courses-registration.

Administration

Number of places: 10 EuroTeQ students plus unspecified number of local students

Minimum participants: Minimum participants is 15 - EuroteQ plus local students together.

Internal course code: G16E01103

Contact: oldrich.bronec@cvut.cz

This course is part of the EuroTeQ Engineering University joint course catalogue 2022/2023. This is a collaborative activity of the partner universities DTU, L'X, TU/e, TalTech, CTU, TUM as well as Technion. Students from these universities can participate in the offered courses. It is the responsibility of the student to

check if you fulfil the requirements to participate in a specific course. Students are also advised to check with their home institution how to get recognition of the ECTS credits gained in courses of the EuroTeQ course catalogue. For further information about EuroTeQ Engineering University, visit www.euroteq.eu or get in touch with the above-mentioned point of contact.