



Faculty of Health, Science and Technology
Mechanical Engineering

Syllabus

Production Systems II

Course Code:	MSGC20
Course Title:	Production Systems II <i>Produktionssystem II</i>
Credits:	7.5
Degree Level:	Undergraduate level
Progressive Specialisation:	First cycle, has less than 60 credits in first-cycle course/s as entry requirements (G1F)

Major Field of Study:

IEA (Industrial Management)
MTA (Mechanical Engineering)

Course Approval

The syllabus was approved by the Faculty of Health, Science and Technology 2020-03-11, and is valid from the Autumn semester 2020 at Karlstad University.

Prerequisites

Production Systems I (7.5 ECTS credits), or equivalent

Learning Outcomes

The aim of the course is for students to acquire further knowledge in the area of production in terms of a systems perspective. The course builds on Production Systems I.

The principles, strategies, and methods of production systems

Upon completion of the course, students should be able to:

- give an account of theoretical concepts related to production systems, with a focus on lean,

- apply lean principles, strategies, and methods in practice to a reality-based case, and in flow simulation,
- apply design of experiments methods in practice, and analyse models,
- give an account of principles, strategies, and methods for continuous improvement,
- give an account of the basics of different maintenance strategies and methods, with a focus on TPM (Total Productive Maintenance), and
- apply methods to calculate the reliability and dependability of production systems.

Content

The course focuses on production systems control, quality, and improvement. Leadership and organisation aspects of quality and reliability are treated in terms of lean and TPM (Total Productive Maintenance). Also treated are models for production development and methods for controlling and ensuring quality, time, and cost in the product engineering process of a company. In relation to lean, there is a specialisation primarily in value stream mapping and simulation. Instruction is in the form of lectures, laboratory sessions, study visits, case studies, and seminars.

Reading List

See separate document.

Examination

Assessment is based on a written exam, mandatory literature seminars and laboratory sessions, hand-in assignments, and a practical case report related to a mandatory study visit.

If students have a decision from Karlstad University entitling them to special pedagogical support due to a documented disability, the examiner has the right to give such students an adapted examination or to examine them in a different manner.

Grades

One of the grades Fail (U), Pass (G), or Distinction (VG) is awarded in the examination of the course.

Quality Assurance

Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course evaluation is partly based on student views and experiences obtained in accordance with current regulations and partly on other data and documentation. Students will be informed of the result of the evaluation and of any measures to be taken.

Course Certificate

A course certificate will be provided upon request.

Additional information

The local regulations for studies at the Bachelor and Master levels at Karlstad University stipulate the obligations and rights of students and staff.