



COURSE SYLLABUS

Maintenance for Production Performance, 5 credits

Underhåll för produktionsprestanda, 5 högskolepoäng

Course Code: TUHR20	Education Cycle: Second-cycle level
Confirmed by: Dean Mar 1, 2020	Disciplinary domain: Technology
Revised by: Director of Education May 15, 2020	Subject group: MT1
Valid From: Aug 1, 2020	Specialised in: A1N
Version: 2	Main field of study: Production Systems

Intended Learning Outcomes (ILO)

After a successful course, the student shall

Knowledge and understanding

- demonstrate comprehension of the role of maintenance management to support knowledge intensive- and innovative production development
- display knowledge of how different maintenance strategies can affect the balance of reactive and proactive maintenance behavior in certain settings using simulation experiments
- display knowledge of the economic impact of maintenance and operational reliability from a holistic perspective for a manufacturing company

Skills and abilities

- demonstrate the ability to analyze production and maintenance data
- demonstrate the ability to design a sustainable maintenance strategy

Judgement and approach

- demonstrate the ability to evaluate the effect of different maintenance strategies

Contents

The development of maintenance management is significant for improving the production performance. In the course, benefits from improving maintenance management are analyzed in different exercises. In the era of knowledge intensive- and innovative production development we also explore the application of different advanced simulation tools for developing maintenance. And, based on the study of a maintenance culture model we discuss together and individually develop a strategy of improvement.

The course includes the following elements:

- Maintenance terminology
- Introduction to different tactical choices of how to manage physical assets, e.g. corrective maintenance, preventive maintenance, and condition-based maintenance
- Introduction to maintenance concepts such as TPM and RCM

- Theory and discussions on reactive and proactive maintenance and its economic impact
- The economic importance of maintenance
- Life cycle costing, key performance indicators in maintenance, and their corresponding effect to drive behavior in maintenance
- The connection between maintenance operations and production operations

Type of instruction

Lectures, seminars, and exercises.

The teaching is conducted in English.

Prerequisites

The applicant must hold the minimum of a bachelor's degree (ie. the equivalent of 180 ECTS credits at an accredited university) with at least 90 credits in Mechanical Engineering, Industrial Engineering and Management or Civil Engineering or equivalent, and 15 credits Mathematics. English Language requirements corresponding to English 6 in the Swedish upper secondary school (or the equivalent). The applicant must also have 1 year of qualified work experience. It is possible to apply for exemption from a bachelor's degree and 15 credits Mathematics if the applicant has at least 5 years of qualified work experience.

Examination and grades

The course is graded Fail (U) or Pass (G).

The final grade will only be issued after satisfactory completion of all assessments.

Registration of examination:

Name of the Test	Value	Grading
Exercise	2 credits	U/G
Seminar	3 credits	U/G

Course literature

The literature list for the course will be provided one month before the course starts.

Course material, including articles, will be provided during the course.

Reference literature

Title: Uptime: Strategies for Excellence in Maintenance Management

Author: John D. Campbell, James V. Reyes-Picknell, Hyung Sik Kim

Publisher: CRC Press Taylor & Francis Group

ISBN: 978-1-4822-5237-8