



## KURSPLAN

# Underhåll för produktionsprestanda, 5 högskolepoäng

*Maintenance for Production Performance, 5 credits*

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<b>Kurskod:</b>	TUHR20	<b>Utbildningsnivå:</b>	Avancerad nivå
<b>Fastställd av:</b>	VD 2020-03-01	<b>Utbildningsområde:</b>	Tekniska området
<b>Reviderad av:</b>	Utbildningschef 2020-05-15	<b>Ämnesgrupp:</b>	MT1
<b>Gäller fr.o.m.:</b>	2020-08-01	<b>Fördjupning:</b>	A1N
<b>Version:</b>	2	<b>Huvudområde:</b>	Produktionssystem

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### Lärandemål

After a successful course, the student shall

#### Kunskap och förståelse

- 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

#### Färdighet och förmåga

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

#### Värderingsförmåga och förhållningssätt

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

### Innehåll

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

### Undervisningsformer

Lectures, seminars, and exercises.

Undervisningen bedrivs på engelska.

### Förkunskapskrav

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 och betyg

Kursen bedöms med betygen Underkänd eller Godkänd.

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

Poängregistrering av examinationen för kursen sker enligt följande system:

Examinationsmoment	Omfattning	Betyg
Övningsuppgift	2 hp	U/G
Seminarier	3 hp	U/G

### Kurslitteratur

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.

### Referenslitteratur

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