



## COURSE SYLLABUS

# Sustainable Production, 7.5 credits

*Hållbar produktion, 7,5 högskolepoäng*

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<b>Course Code:</b> THPR22	<b>Education Cycle:</b> Second-cycle level
<b>Confirmed by:</b> Dean Mar 1, 2022	<b>Disciplinary domain:</b> Technology
<b>Valid From:</b> Aug 1, 2022	<b>Subject group:</b> TE9
<b>Version:</b> 1	<b>Specialised in:</b> A1N
	<b>Main field of study:</b> Production Systems

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### Intended Learning Outcomes (ILO)

After a successful course, the student shall

Knowledge and understanding

- demonstrate knowledge of how sustainability aspects can be considered during product realisation
- demonstrate knowledge of methods and tools used to consider sustainability aspects during production activities
- demonstrate knowledge of strategies for sustainable manufacturing
- demonstrate knowledge of sustainable manufacturing system and circularity for sustainable manufacturing

Skills and abilities

- demonstrate the ability to describe sustainability and life cycle concepts
- demonstrate the ability to describe different environmental strategies and business models, and how these relate to a company's operations
- demonstrate the ability to describe drivers and barriers for sustainable manufacturing

Judgement and approach

- demonstrate the ability to understand and analyze empirical and theoretical material relating to sustainability in production activities
- demonstrate the ability individually or in groups to execute and present projects and/or seminar assignments, both orally and in writing and to provide feedback critically and constructively on such reports.

### Contents

The course covers how sustainability issues affect and can be managed during product development and production activities.

The course includes the following elements:

- Introduction of sustainable development aspects (environment, economy, and society)

- Sustainability in product development and production
- Life cycle concepts
- Drivers, barriers, and strategies for sustainable manufacturing
- Sustainable manufacturing system
- Circularity for sustainable manufacturing
- Measuring sustainable manufacturing
- Return logistics and remanufacturing
- Resilience

### **Type of instruction**

Lectures and seminars.

The teaching is conducted in English.

### **Prerequisites**

Completed courses of 180 credits in first cycle, at least 90 credits within the major subject Mechanical Engineering, Industrial Engineering and Management or Civil Engineering, and 15 credits in Mathematics. Proof of English proficiency is required.

### **Examination and grades**

The course is graded 5,4,3 or Fail.

Registration of examination:

Name of the Test	Value	Grading
Examination <sup>1</sup>	4 credits	5/4/3/U
Seminars	3.5 credits	U/G

<sup>1</sup> Determines the final grade of the course, which is issued only when all course units have been passed.

### **Course literature**

The literature list for the course will be provided 8 weeks before the course starts.

Title: Sustainable Manufacturing

Authors: Glenn Johansson, Erik Sundin, Magnus Wiktorsson (2019)

Publisher: Studentlitteratur AB

ISBN: 9789144120546

Seminar literature will be available before the course starts.