

Course syllabus for

# **P13: Engineering Product Development (EDP): Sustainability in Engineering Product Development (SEPD)**

Syllabus adopted 2019-09-12 by Professor Bengt-Göran Rosén, Produktion2030 Head of Education



Credits	5 hec
Grading scale	Satisfactory/not satisfactory
Education cycle	Third-cycle
Examiner	Professor Glenn Johansson, Mälardalen University Sweden Professor Sofia Ritzén, KTH Royal Institute of Technology Associate Professor Sophie Hallstedt, Blekinge Institute of Technology
Eligibility	A Master's degree in engineering or equivalent
Aim	Societal and industrial activities call for a need to relate research and practice on Engineering Product Development to the pressing issues of sustainable development. In this course, we will address how various sustainability aspects relate to Engineering Product Development and focus on why, how and when sustainability needs to be integrated and implemented in the product development activities.

Intended learning outcomes	After completion of the course the course participant should be able to:  Knowledge and understanding <ul data-bbox="660 432 1321 645" style="list-style-type: none"><li>• display knowledge of sustainability in Engineering Product Development and its relevance for manufacturing companies</li><li>• be familiar with motives and drivers for sustainability as well as models, methods, tools, and techniques that can be used for sustainability integration</li></ul> Skills and abilities <ul data-bbox="660 696 1278 797" style="list-style-type: none"><li>• demonstrate skills of presenting and explaining how his/her own research relates to sustainability in Engineering Product Development</li></ul> Judgement and approach <ul data-bbox="660 848 1310 949" style="list-style-type: none"><li>• demonstrate ability to penetrate and analyse empirical and/or theoretical materials that focuses on sustainability in Engineering Product Development.</li></ul>
Course content	The course will include inspirational lectures, literature seminars, and a written assignment. A number of pressing themes relating to Sustainable Development will be addressed and in seminars and writing these will be reflected upon in relation to their criticality for society and connection to the field of Engineering Design and Product Development. The connection to each PhD students own research will also be addressed.  Planned themes are: <ol data-bbox="660 1335 1267 1469" style="list-style-type: none"><li>1. Sustainable product development &amp; Ecodesign and support tools/methods</li><li>2. Social sustainability</li><li>3. Circular Economy/Sustainable business models.</li></ol> In addition, the basics of Sustainable Development will be addressed.  At the end of the course participants are expected to write a course paper where they relate their own research to literature on sustainable product development. The paper shall be presented at the third meeting and each participant must also act as “opponent” of another participant’s paper.  Please note that the content is preliminary and may be exposed to some minor changes until the course starts.

Course organisation	<p>In brief, the course is structure as follows:</p> <p>Meeting 1: 6-7 February, 12.00-12.00 (lunch to lunch), KTH, Stockholm Course introduction, inspirational lecture, literature discussions, etc.</p> <p>Meeting 2: 5-6 March, 12.00-12.00 (lunch to lunch), MDH, Eskilstuna Literature seminar, inspirational lecture, etc.</p> <p>Meeting 3: 23-24 April, 12.00-12.00 (lunch to lunch), BTH, Karlskrona Presentation/discussion of texts written by the participants, inspirational lecture, etc.</p> <p>Please note that the structure is preliminary and may be exposed to some minor changes until the course starts.</p>
Examination	<p>The course is examined through active participation at the seminars and the written assignment which will be presented at final meeting.</p>
Literature	<p>A list of literature will be presented at the first meeting. A few articles will be distributed before the first meeting and participants are expected to read them prior to the meeting.</p>