

<p>Title: Modelling Physical Systems (Modellering af fysiske systemer)</p>
<p>Size: 5 ECTS</p>
<p>Prerequisites: Basic knowledge in Programming and Prototype development.</p>
<p>Objectives: The module gives an in-depth introduction to modelling of physical systems and the analogies between dynamics systems such as mechanical, hydraulic, electronic, and acoustic systems. Constructing and modelling physical systems requires an understanding of basic kinematics and kinetics. In turn, models of dynamic systems have analogies that can be described by the same underlying mathematics. Students who complete this module will understand the basics of mechatronic systems and the analogy between various dynamic systems.</p> <p>Students who complete the module will gain knowledge, skills and competences as follows:</p> <p>Knowledge</p> <ul style="list-style-type: none"> • Must have knowledge about the kinematics of particles • Must have knowledge about the kinetics of particles • Must be able to understand the analogy between various dynamic systems, i.e. electronic, mechanical and hydraulic systems • Must be able to understand how to model the kinematics and kinetics of simple mechanical systems <p>Skills</p> <ul style="list-style-type: none"> • Must be able to apply knowledge to the creation of free body diagrams of dynamic systems • Must be able to understand how to calculate and model forces of dynamic systems • Must be able to select and apply methods for modelling the analogy between various dynamic systems i.e. electronic, mechanical and hydraulic systems <p>Competencies</p> <ul style="list-style-type: none"> • Must be able to understand how to collaborate within teams designing, building and modelling physical artefacts • Must be able to synthesize methods for modelling of physical systems and analogies between various dynamic systems such as electronic and hydraulic systems
<p>Type of instruction: Refer to the overview of instruction types listed in the start of chapter 3. The types of instruction for this course are decided in accordance with the current Framework Provisions and directions are decided and given by the Study Board for Media Technology.</p>
<p>Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology: Individual oral or written examination with internal censor. The assessment is performed with the Pass/Non-Pass grade.</p>
<p>Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.</p>