



T-620-ENGX	VERKFRÆÐI X (enska: ENGINEERING PROJECT X)	12 ECTS
Year of study:	3rd year	
Semester:	Spring. <i>Valnámskeið á vorönn 2021 og 2022, skylda í öllum námsbrautum á vorönn 2023.</i>	
Level of course:	3. Undergraduate (First cycle), advanced.	
Type of course:	Core for all programs in engineering.	
Prerequisites:	The student must have completed 5 semesters in engineering. The projects will vary for each specific program and will require knowledge drawn from the courses that are mandatory in that specific program. Details to be published each year.	
Schedule:	Runs for 15 weeks. Schedule to be decided.	
Supervising teacher:	Ágúst Valfells and Joe Foley.	
Lecturer:	Joe Foley (the design process), Eyjólfur Ingi Ásgeirsson (RV-project: Model X), Sverrir Ólafsson (FV-project: Finance X), Paolo Gargiulo (HEV-project: Clinic X), Eliahu August (HÁV-project: Robot X), Ármann Gylfason (VV-project: Mechanics X), Guðrún A Sævarsdóttir (OV-project: Energy X), Ragnar Kristjánsson (RAV-project: Electric Power X).	

Learning outcome: The course will help students to make the vital step from solid understanding of the fundamentals of engineering to the application of theory to practical scenarios, as they arise in the real world. On completion of the course the students will have extensively applied their knowledge of engineering to a range of practical and relevant problems. The problems will require knowledge drawn from the courses that are mandatory in their specific program.

The students will:

- Understand the product design process and be able to apply it to a substantial engineering project.
- Be able to apply Product Design methods to interact with customers and distill their needs into a manageable form.
- Be able to create requirements and design documents.
- Be able to analyze the modularity and robustness of their design.
- Be able to create design documents and conference papers.
- Be able to present ideas effectively for customers and peer reviews.
- Be able to design and perform experiments to test design choices.
- Be able to use appropriate software for design and modelling.
- Be able to build prototypes
- Be able to use the creative instincts as part of a deterministic process.
- Be able to collaborate effectively on a substantial project for a specific customer within given constraints.

Birt með fyrirvara um breytingar.

Uppfærðar upplýsingar um námsmat og kennsluáferðir eru birtar í kennslukerfinu Canvas í upphafi hvorrar annar.



Description: This course will walk students through the Product Design design process where they will design and implement a prototype solving a problem in their particular discipline. The focus of this course is to understand the elements involved in the generic design process that includes the agents of marketing, design, and implementation. Through the viewpoint of these agents, we will go through the steps of planning, concept development, system-level design, detailed design, and testing and refinement. Weekly problem sets will be given to assess comprehension. Weekly group assignments will apply processes from reading to the final project design e.g. interviewing prospective customers, developing requirements lists, building a test plan, and mastering discipline-specific tools.

Projects will be connected with a customer in the specific discipline, possibly from industry or research fields. Projects may be selected to be program specific for each of the BSc programs in engineering or may be chosen to have aspects of multiple disciplines and thus involve students from more than one program.

This course is taught in three parts. For the first 6 weeks the students will learn and master the general Product Design process based on the needs of a customer. For the rest of the course students will work in teams on the project specified for their program, e.g. mechatronics or financial engineering. Weeks 7 – 12 are part of the regular 12 week period in the spring semester while weeks 13 – 15 are taught in the 3 week period of the spring semester during which the students are completely dedicated to this course.

Language of instruction: Icelandic/English

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Uppfært 15. maí 2020