



**T-814-INNO CREATING A COMPLETE BUSINESSPLAN FOR A TECHNICAL IDEA -
ENTREPRENEURSHIP AND THE INNOVATION PROCESS**

8 ECTS

Year of study: First year MSc.
Semester: Spring.
Level of course: 4.-5. Second cycle, introductory-intermediate.
Type of course: Core for MSc Engineering Management; *recommended elective for other MSc programs in engineering.*
Prerequisites: None.
Schedule: Runs for 12 weeks – 6 teaching hours a week.
Supervisor: Páll Kr. Pálsson.
Lecturer: Páll Kr. Pálsson.

Learning outcome:

Knowledge:

After the course the student shall be able to explain the following terms: Business plan, design and implementation plan, market analysis, expected sales curve, plan for market implementation, technical feasibility, development of a prototype, calculations of financial need, financing, income, cost, profitability and evaluation of business idea.

Skills:

Students shall be able to adapt the most important methods in optimizing business opportunities by analyzing current situation and suggesting methods and actions that are likely to lead to optimal results in Innovation. Also students shall be able to describe how to realize their proposals and partly realize them in the form of a working prototype.

Disciplinary skills:

On the completion of the course the student shall be able to formulate technically complex ideas and develop and implement them for a competitive market. The student will learn how to develop ideas through the CanvasBusinessModel method, build a business plan, execute a feasibility study, carry out a financial plan and test the idea by developing and testing a prototype.

Personal skills:

- Apply engineering methods to complex projects, i.e. have the ability to assess engineering projects, identify the key factors in a given situation, and develop an approach to solution.
- Formulate and work on open-ended problems, including creative thinking.
- Formulate a project plan for development and design of an engineering product.
- Integrate theoretical knowledge and practice through critical analysis of a project.
- Realize the limits of his/her expertise and know when it is necessary and appropriate to seek specialist advice.
- Have insight into how to manage all aspects of a project within a team, including conceptual development/design, prototype creation, market analysis, ect. Fabrication, documentation and testing, business plan.
- Manage and motivate people by disciplines of human resource management and provide leadership.

All course descriptions may be subject to change. Revised information on the course schedule, reading material, teaching and learning activities, and assessment methods will be introduced in the learning management system Canvas at the beginning of the semester.



Interpersonal skills:

- Communicate effectively and professionally and formulate sound arguments, both in writing and by means of presentations, using appropriate professional language, including statistics, figures, illustrations, equations, tables and video.
- Use time management and work planning related to the organization, implementation and successful completion and reporting of a project.
- Be an effective team member and contribute to the management of team projects.
- Recognize the interdisciplinary nature of technical problems and work with other professions to arrive at a solution for complex engineering problems, respecting the different skillset of individual team members.
- Propose, plan, structure and manage well defined projects involving a team of individuals from different professional disciplines. Prioritize, organize and schedule work activities effectively.

Competence:

- Possess the knowledge to present and interpret the outcome of a business plan and be able to establish and/or operate minor companies.
- Participate in research and product development within the broad field of engineering, recognizing their roles in the innovation process.
- Know how to avoid making mistakes when searching, developing and evaluating business opportunities.

Content:

Technology does not exist in isolation but is dependent upon natural sciences, technical feasibility and market need. This is what makes technological development challenging but if it is successful in integrating these factors it can be very rewarding. The objective of this course is to give the student a comprehensive experience of combining these factors for technological innovation, development and marketing.

To accomplish this, students will go through the conceive, design, implement and operate process with the aim to target market need and ensure technical feasibility.

The course will cover innovation, entrepreneurship and writing a complete business plan for a „start up“ of a technical idea, in light of market needs, research, technical development, planning and financial presumptions. We deal with the terms innovation and entrepreneurship and their significance for modern management. We also cover the value of knowledge, intellectual property and patent rights.

The course will give an overview of the running and managing business entities, including planning, cost analysis, human resource management and the role of managers and directors. The course will also give an overview of the importance of continuous innovation through technical development processes and market need analysis in relation to product and corporate lifecycles.

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Reading material: Lecture notes and other material supplied by teacher on CANVAS, also links to websites and various articles connected to the study-material. *Handbók Athafnamannsins II. Businessplans, Innovation, Income and cost calculations and analysis, Profitability analysis, Evaluation methods.* Author Páll Kr. Pálsson. Skyggni ehf. Sept. 2018.

Assessment methods: Four reports total 62%, final report 16%, oral exam 22%. An oral exam/project defense takes place at the end of the course, where each group presents their results for 15 minutes, and answer questions from teachers and two examiners for 5 to 10 minutes.

Teaching and learning activities: Lectures in the classroom on the themes we cover. Groups of 5 students deliver a complete business plan including market research, technical feasibility study and planning the prototype, estimates of capital need and financing and a business model for running the operation for 3 to 5 years after entering the market.

Language of instruction: English.

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