

## NEW PRODUCT DEVELOPMENT

<b>Course code</b>	<i>GRAI014</i>
<b>Compulsory in the programmes</b>	<i>Innovations and Technology Management</i>
<b>Level of studies</b>	<i>Graduate</i>
<b>Number of credits</b>	<i>6 ECTS (36 contact hours + 2 consultation hours, 124 individual work hours)</i>
<b>Course coordinator (title and name)</b>	<i>Assoc.prof.dr. Eigirdas Žemaitis</i>
<b>Prerequisites</b>	-
<b>Language of instruction</b>	<i>English</i>

### THE AIM OF THE COURSE:

This course is designed to provide knowledge of the new product development process. This course focused on issues related to New Product Development (NPD) concept evolution in the context of innovation management theories. In the course main NPD theories and its practical applications are discussed. From the opportunity selection, concept generation, and project development. We will recognize in this course that there is no exact process that guarantees a new product's success however, we will learn the tools that will help to guide a new product development team leader an upper hand in evaluating the situation they are presented with. This course is designed to provide an understanding of the new product development process and tools that can be used, build critical thinking skills by applying this information in a course project, develop teamwork, problem solving, as well as written and oral communication skills.

### MAPPING OF COURSE LEVEL LEARNING OUTCOMES (OBJECTIVES) WITH DEGREE LEVEL LEARNING OBJECTIVES (See Annex), ASSESMENT AND TEACHING METHODS

<b>Course level learning outcomes (objectives)</b>	<b>Degree level learning objectives (Number of LO)</b>	<b>Assessment methods</b>	<b>Teaching methods</b>
CLO1. Critically evaluate a new product development environment, and its importance to a firm.	LO 1.1, LO 1.2	Case analysis, Group project	Active participation in online discussion, small assignments, case analyses assessment, and group project.
CLO2. Be able to apply a new product development process and tools.	LO 1.2.	Examination, case analysis, group project	Active participation in online discussion, small assignments, case analyses assessment, and group project.
CLO3. Obtain the skills to develop and analyze a new product concept	LO 2.1, LO 1.1.	Group project, lectures	Active participation in online discussion, small assignments, case analyses assessment, and

			group project.
CLO4. Identify and evaluate information related to a new product development stages.	LO 2.1., LO 1.2	Lectures, reading and analysis of cases, group project	Active participation in online discussion, small assignments, case analyses assessment, and group project.
CLO5. Develop critical thinking ability and problem-solving skills through experiential learning.	LO 1.3., LO 3.1, LO 3.2	Group project case analysis	Active participation in online discussion, small assignments, case analyses assessment, and group project.
CLO6. Strengthen creative and writing skills by experiencing a new product development process.	LO 3.2	Reading and analysis of cases, group project	Active participation in online discussion, small assignments, case analyses assessment, and group project.
CLO7. Communicate and work effectively in an interdisciplinary group	LO 3.1	Group project	Active participation in online discussion, small assignments, case analyses assessment, and group project.

**ACADEMIC HONESTY AND INTEGRITY**

Interactive teaching methods, interim knowledge assessment and self-evaluation, case study, seminars, and whole class discussions, individual and group work assignment will be employed to enhance the quality of studies.

**Plagiarism.** Plagiarism is considered a breach of academic integrity. In case of plagiarism incident a student/group will result in an automatic failure in this course.

**COURSE OUTLINE**

Topic	In-class hours	Readings
Introduction. Contemporary challenges and skills for new product development. Definition of New Product Development Concepts.	3	Internet sources: <a href="https://www.mckinsey.com/business-functions/mckinsey-design/our-insights/modern-cpg-product-development-calls-for-a-new-kind-of-product-manager">https://www.mckinsey.com/business-functions/mckinsey-design/our-insights/modern-cpg-product-development-calls-for-a-new-kind-of-product-manager</a>
Innovation theories and new product development. Historical perspectives and today frameworks. The strategic elements of new product development.	4	Readings: Course book Chapter 1. The Strategic Elements of Product Development (pages 5-18) Crawford book Chapter 1. The Strategic Elements of Product Development (pages 18-24)

<p><b>Learning objectives:</b></p> <ul style="list-style-type: none"> <li>(1) To understand historical challenges and developments of NPD frameworks</li> <li>(2) To identify and evaluate main elements of new product development.</li> <li>(3) Acquire critical knowledge and understanding of the discipline and main success factors.</li> </ul>		
<p>New product development process. Innovation sources for new product development. Design thinking concept for a new product development.</p> <p><b>Learning objectives:</b></p> <ul style="list-style-type: none"> <li>(1) Critically evaluate innovation sources and possibilities.</li> <li>(2) How different innovation types could be used to develop new products?</li> </ul>	4	<p>Readings: Course book Chapter 2. The New Products Process (pages 25-59) Sawhney, M., Wolcott, R. C., &amp; Arroniz, I. (2006). The 12 different ways for companies to innovate. <i>MIT Sloan management review</i>, 47(3), 75</p> <p>Additional media: Professor Joe Tidd identifies different sources of innovation &amp; tools to help to search for these: <a href="https://www.youtube.com/watch?v=IFck3eOwPnQ">https://www.youtube.com/watch?v=IFck3eOwPnQ</a> <u>Where good ideas come from</u> Steven Johnson</p>
<p>Opportunity identification and selection: strategic planning for new products</p> <p><b>Learning objectives:</b></p> <ul style="list-style-type: none"> <li>(1) Critically evaluate opportunity field for NPD.</li> <li>(2). Be able to identify sources for technology trends.</li> <li>(3) Obtain the skills to use macro insights for NPD.</li> </ul>	4	<p>Readings: Course book Chapter 3. Opportunity Identification and Selection: Strategic Planning for New Products (pages 60-96)</p> <p>Additional sources:</p> <p>Gartner Hype Cycle model: (<a href="https://www.gartner.com/en/research/methodologies/gartner-hype-cycle">https://www.gartner.com/en/research/methodologies/gartner-hype-cycle</a>)</p> <p>Strategic technological trends for NPD: <a href="https://www.gartner.com/smarterwithgartner/gartner-top-strategic-technology-trends-for-2021/">https://www.gartner.com/smarterwithgartner/gartner-top-strategic-technology-trends-for-2021/</a></p> <p>Dahlander, L., &amp; O'Mahony, S. (2017). A study shows how to find new ideas inside and outside the company. <i>Harvard Business Review Digital Articles</i>, 2-5. <u>Technology Scouting – a case study on the Deutsche Telekom Laboratories</u></p>
<p>Design thinking workshop. Designing new products and services. Rapid prototyping.</p>	10	<p>Reading: Brown, T. (2008). Design thinking. <i>Harvard business review</i>, 86(6), 84. Liedtka, J. (2018). Why design thinking works. <i>Harvard Business Review</i>, 96(5), 72-79. Kolko, J. (2015). Design thinking comes of age. <i>Harvard Business Review</i></p> <p>Course book, pages 130-154.</p> <p>Online sources: <a href="http://www.ideo.com">www.ideo.com</a> <a href="http://www.designkit.org">www.designkit.org</a></p>
<p>Structured processes for the new product development. Implementation of Stage- Gate methodology.</p>	4	<p>Cooper, R. G. (2006). Winning at new products: pathways to profitable innovation. In <i>Proceedings Project Management Research Conference, Montreal, Canada</i>.</p>



<p><b>Learning objectives:</b></p> <p>(1) Critically evaluate the structured NPD processes.</p> <p>(2) Ability to critically analyse how to design Gates and Stages.</p>		<p>Cooper, R. G., &amp; Kleinschmidt, E. J. (1996). Winning businesses in product development: The critical success factors. <i>Research-technology management</i>, 39(4), 18-29.</p> <p>Cooper, R. G. (2019). The drivers of success in new-product development. <i>Industrial Marketing Management</i>, 76, 36-47.</p> <p>Cooper, R. G., &amp; Edgett, S. J. (2010). Developing a product innovation and technology strategy for your business. <i>Research-Technology Management</i>, 53(3), 33-40.</p> <p>Internet resource:<a href="http://www.stage-gate.com">www.stage-gate.com</a>.</p>
<p>Concept/ project evaluation. Evaluation system.</p> <p><b>Learning objectives:</b></p> <p>(1) Critically evaluate different strategies for concept selection.</p> <p>(2) How to apply most appropriate concept evaluation system</p>	3	<p>Readings:</p> <p>Course book. Chapter 8. The Concept Evaluation System (pages 193-213)</p>
	<b>Total:</b> <b>32</b> <b>hours</b>	
CONSULTATIONS	2	
FINAL EXAM	2	

#### FINAL GRADE COMPOSITION

Type of assignment	%
<i>Group Components 50 %</i>	
Group project (New Product Development)	50
<i>Individual Components 50%</i>	
Final exam	50
<b>Total:</b>	<b>100</b>

#### DESCRIPTION AND GRADING CRITERIA OF EACH ASSIGNMENT

(Provide short descriptions and grading criteria of each assignment)

##### Final examination

The Final exam will be combination of multiple choice/ open questions covering main theoretical aspects and practical application use cases.

##### Group project

##### **New product/idea development**

Main aim of the group work is to develop new project idea and pitch to the investors. During the semester students implement group tasks for the development of the project idea.

### **Final presentation structure**

At the end of the course students present group projects. Presentation duration 5 minutes (could be small changes, depending on situations) Main objective of the presentation to pitch the concept. Proposed presentation structure :

#### **1. Problem.**

What is your problem and how you identified it?  
Who is target customer, who has this problem?  
What is the market size?

#### **2. Solution, value proposition**

What is your solution and how you see it from customer perspective?  
How you validated your idea (any research?)

#### **3. Competitors**

Who are competitors and, why your solution is better?

#### **4. Business model**

How you will monetize your business?

#### **5. Demo. Prototype**

Have you tested prototype? What was the feedback?

#### **6. Next steps**

#### **7. Team competencies**

Project evaluation criteria:

Innovative solution. Students created interesting and unique idea.  
Market research. Students validated market and provided clear evidence for their idea.  
Students have clear business model and monetisation strategy  
Students created MVP (minimum viable prototype) and tested with the customers  
Pitching performance was excellent

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### **RETAKE**

If final mark of the course, including final exam score, is insufficient, students will be allowed to exercise their right of retake. The retake exam will cover all lectures and case-discussion topics discussed in class during the course. It will be held during the last week of the exam session and will replace the 50 % of exam. Groupwork cannot be resubmitted or presented later than assigned date, please inform in advance about possible issues.

### **ASSISTANCE**

Do not ever hesitate to request assistance with anything you do not understand.

### **REQUIRED READINGS**

Tidd, J., & Bessant, J. R. (2020). *Managing innovation: integrating technological, market and organizational change.* John Wiley & Sons.

Course book. Crawford, C.M. and Di Benedetto, C.A. (2015). *New Product Management 11<sup>th</sup> Edition.* McGraw-Hill Education.

### **ADDITIONAL READINGS**

- Sawhney, M., Wolcott, R. C., & Arroniz, I. (2006). The 12 different ways for companies to innovate. *MIT Sloan management review*, 47(3), 75.
- Cooper, R. G. (2006). Winning at new products: pathways to profitable innovation. In *Proceedings Project Management Research Conference, Montreal, Canada*.
- Cooper, R. G., & Kleinschmidt, E. J. (1996). Winning businesses in product development: The critical success factors. *Research-technology management*, 39(4), 18-29.
- Cooper, R. G. (2019). The drivers of success in new-product development. *Industrial Marketing Management*, 76, 36-47.
- Cooper, R. G., & Edgett, S. J. (2010). Developing a product innovation and technology strategy for your business. *Research-Technology Management*, 53(3), 33-40.
- Brown, T. (2008). Design thinking. *Harvard business review*, 86(6), 84.
- Liedtka, J. (2018). Why design thinking works. *Harvard Business Review*, 96(5), 72-79.
- Kolko, J. (2015). Design thinking comes of age. *Harvard Business Review*.



**DEGREE LEVEL LEARNING OBJECTIVES**

**Learning objectives for the Master of Business Management**

*Programme:*

*Innovations and Technology Management*

<b>Learning Goals</b>	<b>Learning Objectives</b>
Students will be innovative decision makers	LO1.1. Students will be able to define the business problem and develop <b>innovative solutions</b> .
	LO1.2. Students will become <b>independent learners</b> and develop their own comprehension of scientific theories, models, and concepts.
	LO1.3. Students will be able to demonstrate critical thinking in problem solving.
Students will be socially responsible leaders	LO2.1. Students will be able to evaluate past and current practices in their discipline from an <b>ethical perspective</b> .
Students will be effective communicators	LO3.1. Students will develop and deliver a <b>coherent oral presentation</b> .
	LO3.2. Students will develop and deliver a <b>coherent written research paper</b> .