SYLLABUS

1. Information regarding the program

1.1 Higher education institution	**University of Oradea**
1.2 Faculty	**Faculty of Economic Sciences**
1.3 Department	**Department of Economy**
1.4 Field of study	**Business Administration**
1.5 Cycle of study	**Cycle I – Bachelor**
1.6 Program of study /Degree	**Business Administration / Bachelor Degree**

2. Information regarding the discipline

2.1 Name of discipline			**Product projecting and design (FSTE-0972)**				
2.2 Course titleholder			Lect. univ. dr. Darie Gavriluț				
2.3 Seminar titleholder			Lect. univ. dr. Darie Gavriluț				
2.4 Year of study	III	2.5 Semester	I	2.6 Type of assessment	Cv	2.7 Type of discipline	I

(I) Compulsory; (O) Elective; (F) Facultative

3. Estimated total time (hours/semester of activities)

3.1 Number of hours/week	3	out of which: 3.2 course	2	3.3 seminar	1
3.4 Total of hours in the Curriculum	42	out of which: 3.5 course	28	3.6 seminar	14
Distribution of hours:					83
Studying the workbook, course book, bibliography and notes					35
Supplementary documentation in the library, on electronic specialty sites and in the field					20
Preparing seminars/laboratories, themes, projects, portfolios and essays					26
Tutorship					0
Assessment activities					2
Other activities.....					0

3.7 Total hours of individual study	**83**
3.9 Total hours/semester	**125**
3.10 Number of credits	**5**

4. Pre-requisites (if applicable)

4.1 Curriculum	n.a.
4.2 Skills	n.a.

5. Conditions (if applicable)

5.1. concerning the course activities	Projector, whiteboard
5.2. concerning the seminar/laboratory activities	Whiteboard, projector, laptop/PC

6.1 Specific skills acquired

Professional skills	C1.2: An in-depth exploration and interpretation of the economic impact exerted by the external business environment on the firm or organization. C1.3: Focus on the practical application of appropriate analytical tools to assess the influence exerted by the external business environment on the firm or organization. C1.4: Students will engage in a critical and constructive examination of real-world challenges related to the economic influence of the external business environment on the firm or organization, with a focus on proposing solutions. C2.2: Explanation and interpretation of the relations between the entities of the firm/organisation. C3.2: Students will gain insight into the economic and social implications tied to the operation and management of different divisions or departments within the firm or organization. C3.3: Practical application of specialized tools and techniques for analyzing the performance and functionality of specific divisions within the firm or organization. C4.1: Identification and comprehensive description of key concepts related to the planning, organization, coordination, and control of human resources activities within the firm or organization.
Transversal Skills	CT1. Utilizing principles, standards, and values of professional ethics as a foundation for a personal strategy aimed at achieving work characterized by rigor, efficiency, and responsibility. CT2. Recognizing the functions and obligations within a diverse team while employing effective interpersonal skills and promoting efficiency within the team.

6.2 Learning outcomes

Knowledge	The student/graduate explains the economic dimensions, structures, dynamics, and performance of industries in the trade and market services and consumer tourism sectors, the demographics and typology of enterprises, and the phenomena specific to the phases of the enterprise life cycle in the respective sectors.
Competences	The student/graduate chooses methods for managing customer and supplier relationships.
Responsibility and autonomy	The student/graduate demonstrates the ability to develop new business models and/or technological solutions in the areas of goods distribution and consumer services, including tourism.

6.3 Objectives of discipline (resulting from the grid of specific skills acquired)

6.3.1. General objective of discipline	Current usage and ability to work with basic concepts of product design, projecting and development. The course will provide a comprehensive understanding of the principles, processes, and methodologies involved in conceiving, planning, and designing products. This course aims to equip students with the knowledge and skills necessary to transform creative ideas into tangible and functional products that meet market demands and user needs.
6.3.2. Specific objectives	The specific objectives are: - Conceptualization: Helping students develop the ability to conceptualize and define product ideas, considering factors such as market analysis, user preferences, and technological feasibility. - Design Processes: Teaching students about various design methodologies, techniques, and tools used in product design and prototyping. - Innovation: Encouraging innovation in product design by exploring new materials, technologies, and sustainable practices to create products that are both aesthetically appealing and environmentally responsible.

	- User-Centered Design: Emphasizing the importance of user-centered design principles, including usability, ergonomics, and user experience, to ensure that products are user-friendly and meet customer expectations. - Functional and Aesthetic Considerations: Balancing functionality with aesthetics, focusing on how a product's form and appearance can enhance its market appeal and usability. - Project Management: Introducing project management concepts to help students plan and execute product design projects efficiently, meeting deadlines and budget constraints. - Communication Skills: Enhancing students' ability to communicate their design ideas effectively, both visually and verbally, to stakeholders, clients, and team members. - Problem-Solving: Developing problem-solving skills to address design challenges and make informed decisions during the product development process.

7. Contents

7.1 Course (C)	Metode de predare	Observaţii
Ch 1. Factors affecting product success: this chapter will explore various factors that influence the success of a product in the market, including market trends, competition, consumer preferences, and economic conditions.		2 hours 2 hours
Ch 2. The product development process: This chapter will outline the overall product development process, from idea generation to product launch, and introduce key concepts and stages involved in bringing a product to market.		2 hours
Ch 3. Opportunity identification: In this chapter, the focus will be on how to identify potential business opportunities and market gaps that could lead to the development of new products or improvements to existing ones.		2 hours
Ch 4. Identifying customer needs and wants: Here, the process of gathering and analysing customer feedback and data to understand their needs, preferences, and desires will be discussed. This information is crucial for product development.		2 hours
Ch 5. Product planning: This chapter will cover the strategic planning aspects of product development, including setting objectives, defining target markets, and creating product roadmaps.		2 hours
Ch 6. Product specifications: Detailed product specifications, including technical requirements, materials, and features, will be discussed in this chapter. These specifications guide the design and development process.		2 hours
Ch 7. The economic analysis of product development: This chapter will delve into the financial aspects of product development, including cost estimation, pricing strategies, and budgeting for the development process.		2 hours
Ch 8. Concept generation, concept selection, and concept testing: The process of brainstorming and selecting the best product concepts, as well as testing these concepts with potential customers, will be explored in this chapter.		2 hours
Ch 9. Product architecture: This chapter will discuss the overall structure and organization of a product, including its components and how they interact to fulfill its purpose.		2 hours
Ch 10. Design: Design principles and methodologies, including engineering and functional design, will be covered in this chapter.		2 hours
Ch 11. Industrial design: Here, the focus will be on the aesthetics, ergonomics, and user experience aspects of product design,		2 hours

emphasizing the visual appeal and usability of products		
Ch 12. Design for the environment. Sustainable design: This chapter will address the importance of environmentally friendly and sustainable product design practices, considering ecological impacts and sustainability.		2 hours
Ch 13. Prototyping: The prototyping process, including creating physical or digital models of the product for testing and validation, will be discussed in this chapter.		2 hours
Ch 14. Managing projects: The final chapter will cover project management techniques and strategies for overseeing the entire product development process, ensuring it stays on schedule and within budget.		2 hours

Bibliography

1. Regional Development and Innovation in the Context of the Romanian Start-up Sector, Presa Universitara Clujeana, 2024, ISBN: 978-606-37-2097-0.
2. K. T. Ulrich and S. D. Eppinger, Product Design and Development, 8th Edition, McGraw-Hill, Inc., 2026.
3. Trott, P. (2022/2023). Innovation Management and New Product Development (7th ed.). Pearson.
4. Cantamessa, M., & Montagna, F. (2023). Management of Innovation and Product Development: Integrating Business and Technological Perspectives (2nd ed.). Springer.
5. Fernandes, A. A. (2023). Product and Service Design Innovation. Springer.
6. Bstieler, L., & Noble, C. H. (Eds.). (2023). The PDMA Handbook of Innovation and New Product Development (4th ed.). Wiley.
7. Anderson, A., Harris, E., & McAllister, C. (2024). Product Development and Management Body of Knowledge: A Guidebook for Training and Certification (3rd ed.). Wiley.
8. Clayton M. Christensen, The Innovator's Solution: Creating and Sustaining Successful Growth, Harvard Business Review Press; Illustrated edition (November 19, 2013), 2013, ISBN-10: 1422196577.
9. Tidd, J., & Bessant, J. R. (2024). Managing Innovation: Integrating Technological, Market and Organizational Change (8th ed.). Wiley.
10. The investigation of environmental sustainability within product design: A critical review. (2022). Design Science.
11. Hunger, T., Arnold, M. G., Engesser, S., & van den Boogaart, K. G. (2025). Integrating sustainability facets into the early stages of new product development using multi-criteria tools: A critical review. Journal of Cleaner Production, 517, 145834.
12. Vallé, R., Seitz, J., Kanbach, D. K., & Schuhmacher, M. C. (2026). The use of artificial intelligence in new product development: A systematic literature review, conceptual framework, and future research agenda. Technovation, 153, 103541.
13. Oleszek, S., et al. (2024). Green PLM: Business goals-oriented algorithm assessing the greenness of a product in the new product development phase for the automotive industry. Annals of Operations Research.

7.2 Seminar (S)	**Teaching methods**	**Observations**
1. Product Innovation and Opportunity Identification 2. Customer-Centered Product Design and User Needs 3. Product Concept Generation and Design Creativity 4. Product Specifications, Design Decisions, and Prototyping 5. Product Evaluation, Innovation Risks, and Design Validation 6. Product Development Economics: Costs, Resources, and Production Feasibility 7. Product Commercialization, Pricing, and Final Product Development Proposal	Questioning, debate, deduction, applications, examples	Each seminar will last for 1 hour.

Bibliography:

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5. Fernandes, A. A. (2023). Product and Service Design Innovation. Springer.
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8. Corroboration of the contents of the discipline with the expectations of the epistemic community, professional associations and employers representing the field of study of the program

Product planning and design play a pivotal role in equipping future economists with a comprehensive understanding of crucial aspects in organizing production, facilitating product development, identifying market opportunities, pinpointing consumer needs, and crafting successful products. The curriculum and course contents align seamlessly with those found in analogous disciplines taught in undergraduate programs at institutions both domestically and internationally. Moreover, they are thoughtfully designed to meet the expectations of employers, practitioners and professionals, as articulated by them in various formal and informal contexts.

9. The use of tools based on generative artificial intelligence

For the course: The use of generative Artificial Intelligence (AI) tools is permitted during seminars for purposes such as text reformulation, editing, proofreading, revision, and the generation or editing of visual materials, where appropriate to the learning task. Commonly used tools include, but are not limited to, ChatGPT, Google Gemini, Microsoft Copilot for text-related activities and Midjourney for image generation.
The use of AI is intended to support the student's learning and does not replace the student's own work, analysis, interpretation, or responsibility for the final content. Students are responsible for checking the accuracy and relevance of AI-assisted content and for ensuring compliance with academic integrity requirements.

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The use of AI is intended to support the student's learning and does not replace the student's own work, analysis, interpretation, or responsibility for the final content. Students are responsible for checking the accuracy and relevance of AI-assisted content and for ensuring compliance with academic integrity requirements.
For each assignment in which AI is used, the student must provide a separate AI Use Declaration, in accordance with the model included in Annex 2 of the Regulation on the Use of Generative Artificial Intelligence in Teaching and Scientific Activities of the Faculty of Economic Sciences, University of Oradea. The declaration must specify the AI tool used, the purpose and manner of its use, and the section(s) of the assignment in which AI assistance was employed. The declaration must be inserted at the beginning of the corresponding assignment.
The use of AI must therefore be transparent, responsible, and consistent with the applicable University and Faculty regulations.

10. Assessment

Type of activity	10.1 Assessment criteria	10.2 Assessment methods	10.3 Percentage of the final grade
10.4 Course (C)	Knowledge and understanding the content of lectures.	Multiple choice type test (18 multiple choice questions with only one correct answer).	60%
10.5 Seminar (S)	Understanding the processes, facts and behaviours associated to developing and designing products for business success. Solving applications, situations and case studies.	The evaluation system for the seminar is as follows: **Attendance**: 2 points out of the final grade. Compulsory: at least half the number of presences (7) is required in order for the students to be able to enter the exam. **Project**: 8 points out of the final grade. The semester long project will have 9 deliverables: Core project **1. Product Opportunity and Problem Definition** Identify a problem, unmet need, or market opportunity that justifies developing or redesigning a product. Deliverable: Problem statement and opportunity brief. **2. Target Customer and User Needs** Define the target customer and identify the main functional, practical, and emotional needs the product should address. Deliverable: Customer profile, needs analysis, and initial user requirements. **3. Product Research and Competitive Analysis** Examine comparable products, their features, limitations, prices, and potential opportunities for differentiation. Deliverable: Competitor comparison and product development insights. **4. Product Requirements**	40%

		and Specifications Establish the main technical, functional, aesthetic, usability, and sustainability requirements of the proposed product. Deliverable: Product requirements specification. **5. Idea Generation and Concept Development** Generate multiple product ideas and develop alternative design concepts using appropriate creative techniques. Deliverable: Minimum three alternative product concepts, with supporting sketches or visual representations. **6. Concept Evaluation and Selection** Compare the proposed concepts using defined criteria such as customer value, feasibility, cost, functionality, and differentiation. Deliverable: Concept evaluation matrix and justification of the selected design. **7. Detailed Product Design and Prototype** Develop the selected concept through detailed sketches, dimensions where relevant, materials, components, and a visual prototype or mock-up. Deliverable: Product design package and prototype or digital model. **8. Cost Estimation and Commercial Feasibility** Estimate the principal costs associated with the product, identify a possible selling price, and assess its basic	

		commercial feasibility. Deliverable: Preliminary cost breakdown, indicative pricing, and feasibility assessment. **9. Final Product Concept and Development Documentation** Integrate the results of the previous stages into a coherent product development proposal, including the product's value proposition and implementation considerations. Deliverable: Final product development dossier.	
10.6 Laboratory (L)			
10.7 Project (P)			
10.8 Practical works (P)			
10.9 Minimum performance standard ● Knowledge and understanding the content of the subject at essential level. ● Solving at least nine out of 18 questions on the final exam. ● Meeting the attendance requirements set out in the university's regulation			

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