ISM UNIVERSITY OF MANAGEMENT AND ECONOMICS

APPROVED BY
THE STUDY COMMISSION
Minutes No. 02-12-2026-15
as of 27th August 2026

FUNDAMENTALS OF DIGITAL PRODUCTS DESIGN

Course code	*IT109*
Compulsory in the programmes	*Entrepreneurship and Innovation*
Level of studies	*Undergraduate*
Number of credits	*6 ECTS (48 in-class hours; 2 consultation hours; 112 hours of individual work)*
Course coordinator (title and name)	*PhD candidate Vaida Bitvinskė*
Prerequisites	*None*
Language of instruction	*English*

THE AIM OF THE COURSE

The course provides practical foundations for designing digital products: framing problems, defining user value, prototyping and testing, using artificial intelligence responsibly, and communicating a product clearly. Students turn an observed problem into a focused, functional product without requiring advanced programming knowledge.

By the end of the course, students will be able to evaluate product ideas, explain AI-enabled product systems, prototype and test physical-to-digital and software experiences, build a focused Minimum Viable Product (MVP) during a hackathon, communicate it to different audiences, and reflect critically on evidence and contribution.

MAPPING OF COURSE LEVEL LEARNING OUTCOMES (OBJECTIVES) WITH DEGREE LEVEL LEARNING OBJECTIVES (SEE ANNEX), ASSESSMENT AND TEACHING METHODS

Course level learning outcomes (objectives)	Degree level learning objectives	Assessment methods	Teaching methods
CLO1. The student can frame a specific user problem, test assumptions, and define a focused digital product opportunity.	BLO1.1 BLO1.2	Individual Project	Workshops; practical work
CLO2. The student can explain and responsibly use an AI agent's context, files, tools, permissions, retrieval, MCP, saved instructions, and prompt templates.	BLO2.1 BLO3.1 BLO3.2	System map; agent trace; oral explanation	Guided lab; practical work
CLO3. The student can prototype, build, deploy, and test a focused digital product, including a physical-to-digital interaction.	BLO3.1 BLO3.2	Prototype; MVP; test evidence	Mini-hackathon; peer testing
CLO4. The student can adapt and communicate a digital product to different audiences and reflect on evidence and personal contribution.	BLO4.1 BLO4.2 BLO4.3	Pitch/demo; Post-Hackathon Reflection Presentation and Peer Critique	Pitch carousel; reflection lecture

ACADEMIC HONESTY, INTEGRITY & AI USAGE

The ISM University of Management and Economics Code of Ethics, including policies on cheating and plagiarism, remains fully applicable and will be strictly enforced. Academic dishonesty may result in a report to the ISM Committee of Ethics.

This course explicitly includes the use of generative AI, coding agents, no-code and low-code services, external tools, saved instructions, prompt templates, and agent workflows. Students are encouraged to use them meaningfully, provided that they disclose material use, evaluate outputs critically, and remain able to explain the product logic, files, data flows, sources, limitations, and verification steps.

Fabricated research or testing, hidden pre-built work, undisclosed reuse, exposure of confidential or personal data, or submission of output that the student cannot explain and verify will be treated as academic misconduct. Students remain responsible for product decisions, security, accuracy, source use, and every submitted component, including AI-assisted work.

Progress will be monitored through workshop artifacts, milestone check-ins, product demonstrations, build evidence, peer feedback, and the group reflection presentation. These checkpoints support learning while establishing authorship and contribution.

COURSE OUTLINE

Four practical workshops prepare students for the hackathon. The hackathon then runs across four days: three full hackathon stages followed by Demo Day. A four-academic-hour reflection lecture follows the hackathon, using Demo Day feedback to support the team Post-Hackathon Reflection Presentation and Peer Critique and next-step experiment.

Pre-Hackathon Workshops

#	Topics and practical focus	Academic hrs	Readings
1	From problem to hackathon-worthy product. Product loop; hackathon strategy; opportunity finding; idea scorecard; assumption mapping; disciplined MVP scope.	4	Graham, P., How to Get Startup Ideas; How to Start a Startup.
2	Inside the AI 'black box'. Model, context, harness, tools, permissions, retrieval, MCP, saved instructions, prompt templates, agent workflow, verification, and safe failure.	4	Anthropic Academy, AI Fluency for Builders; Claude Code 101; OpenAI Academy, AI Fundamentals; Codex 101: Introduction and Onboarding.
3	Rapid prototyping sprint. User moment; interaction promise; storyboard; rapid build; interface or trigger setup; cross-context testing; accessible fallback.	4	Fitzpatrick, R., The Mom Test (selected sections on non-leading interviews and evidence).
4	Pitch the same product three ways. Customer, investor/partner, and judge audiences; narrative spine; demo choreography; feedback carousel.	4	Graham, P., How to Present to Investors; Y Combinator, How Pitching Investors Is Different Than Pitching Customers (Michael Seibel, video).

In-Person Hackathon and Post-Hackathon Reflection

Stage	Topics and activities	Academic hrs	Readings
Kick-off and First Build	Review the official rules; confirm team roles and product direction; define the target user and core action; agree the sprint scope; set up the build environment; complete the first working product slice.	7	
Core Build and Testing	Build the core user experience; integrate essential tools and services; test with target or proxy users; use mentor and code-clinic feedback; resolve blockers; revise scope based on evidence.	7	

Stage	Topics and activities	Academic hrs	Readings
Final Build and Pitch Preparation	Refine usability and reliability; resolve key failures; deploy and verify the MVP; prepare the project page and submission; rehearse the pitch and demonstration; confirm a fallback demonstration.	7	
Demo Day	Present a working MVP and its core value proposition; deliver the live pitch and product demonstration; answer judge questions; participate in peer testing; capture feedback for the post-hackathon reflection. Event concludes at approximately 15:00.	7	
Post-hackathon reflection lecture	Review judge, peer, and team feedback; compare the intended product with delivered evidence; analyse key product and AI/tool decisions; brief the team Post-Hackathon Reflection Presentation and Peer Critique; define the next experiment.	4	Graham, P., The 18 Mistakes That Kill Startups; Do Things That Don't Scale.
	Total course in-class hours (16 workshop hours + 28 hackathon hours + 4 reflection hours)	48	
	Consultations — available by prior arrangement	2	

FINAL GRADE COMPOSITION

Assignment	**%**
Group components	***70***
Hackathon MVP & Demo	60
Post-Hackathon Reflection Presentation and Peer Critique	10
Individual component	***30***
Individual Project	30
Total:	**100**

DESCRIPTION AND GRADING CRITERIA OF EACH ASSESSMENT

1. Individual Project (30%)

Type: Individual.

Purpose: Apply course concepts independently by developing and communicating a digital application with AI tools.

Students will develop a digital application using AI tools. Detailed project requirements, deliverables, submission instructions, and assessment criteria will be presented during the lectures and workshops.

2. Hackathon MVP & Demo (60%)

Type: Individual or group.

Purpose: Transform the preparatory project work into a tested, deployed, and convincingly demonstrated digital product during the hackathon.

Requirements: All current assessment criteria, required deliverables, rules, deadlines, submission procedures, and platform information are published at unfairweekend.com. Students are responsible for reviewing and following the information in force for the event.

Participation: Students may participate alone or in teams. Teams of up to three participants are recommended.

3. Post-Hackathon Reflection Presentation and Peer Critique (10%)

Type: Group. Delivered after the post-hackathon reflection lecture.

Purpose: Reflect critically on the delivered product and development process, while practising constructive peer feedback through a friendly critique of another team's product or demo.

Format: A team reflection presentation of no more than 5 minutes, followed by brief questions and a friendly, constructive critique of another team's product or demo.

Details: Detailed requirements, submission instructions, and assessment criteria for both the presentation and peer critique will be presented during the post-hackathon reflection lecture before the assessment.

RETAKE POLICY

If the final cumulative grade is insufficient, the retake will follow current ISM University rules. The retake is an individual product-recovery task that replaces the group Hackathon MVP & Demo component and makes up 60% of the final course grade. The Individual Project and Post-Hackathon Reflection Presentation and Peer Critique are not reassessed as part of the retake; their existing grades retain their respective 30% and 10% weightings in the final course grade. The student diagnoses a failed or incomplete MVP, revises one core user flow, provides a verified prototype, explains the AI/tool system and its risks, and defends the decisions in a short oral review. The retake evaluates the same course learning outcomes without requiring participation in a second live hackathon.

AI POLICY

All course participants must comply with the ISM University of Management and Economics Artificial Intelligence Policy published on the e-learning platform. AI usage in this course is encouraged for building the solutions, doing analysis.

ADDITIONAL REMARKS

Self-study and preparation. Workshop time is used for making, testing, and feedback. Short preparation tasks and required tool setup must be completed before class.

Participation. Students are expected to take active roles in peer testing, pitch feedback, team decisions, and the build. Attendance alone is not evidence of contribution.

Deadlines. Final dates and late-work rules will be published in the learning system and applied according to university policy.

Grading criteria. Detailed assessment criteria, submission instructions, and performance descriptors will be presented or published before each deadline through the lectures, learning system, or official hackathon website, as applicable.

Use of AI. AI tools may support ideation, research, prototyping, writing, coding, testing, and presentation. Students remain the final authors and are responsible for accuracy, coherence, disclosure, verification, and the protection of confidential or personal data.

Ethics. Students must act honestly and fairly. Violations include plagiarism, cheating, fabrication or falsification of evidence, unauthorized collaboration, misrepresentation of contribution, improper reuse, and facilitation of academic dishonesty.

AI access and credits. Students must arrange their own access to sufficient AI usage credits for the practical workshops and hackathon. The recommended agentic coding tools are OpenAI Codex or Anthropic Claude Code. The lecturer will provide setup guidance and identify a reasonable alternative where an accessibility or institutional access issue arises.

Accessibility. Teams should use readable contrast, clear labels, keyboard-aware flows where applicable, and an accessible fallback appropriate to the chosen interaction.

Changing tools. Examples and platforms may change as AI and product-development tools evolve. The learning outcomes, evidence standards, and assessment criteria remain stable.

RECOMMENDED READING AND RESOURCES

Specific preparation is identified in the course outline; further selected chapters, extracts, and online resources may be recommended during the lectures and workshops.

Core references

Aulet, B. (2024). *Disciplined Entrepreneurship: 24 Steps to a Successful Startup, Expanded & Updated* (2nd ed.). Wiley.

Bland, D. J., & Osterwalder, A. (2019). *Testing Business Ideas: A Field Guide for Rapid Experimentation*. Wiley.

Fitzpatrick, R. (2013). *The Mom Test: How to Talk to Customers and Learn If Your Business Is a Good Idea When Everyone Is Lying to You*. FounderCentric.

Mollick, E. (2024). *Co-Intelligence: Living and Working with AI*. Portfolio.

Additional reading

Cagan, M. (2017). *Inspired: How to Create Tech Products Customers Love* (2nd ed.). Wiley.

Torres, T. (2021). *Continuous Discovery Habits: Discover Products That Create Customer Value and Business Value*. Product Talk.

Fadell, T. (2022). *Build: An Unorthodox Guide to Making Things Worth Making*. Harper Business.

Selected online resources

Y Combinator. (n.d.). *Startup School Library*.
Y Combinator. (2019). *How Pitching Investors Is Different Than Pitching Customers* [Video].

Anthropic Academy

Anthropic Academy. (n.d.). *AI Fluency: Framework & Foundations*.
Anthropic Academy. (n.d.). *AI Fluency for Builders*.
Anthropic Academy. (n.d.). *Claude Code 101*.
Anthropic. (2024). *Building Effective Agents*. (Advanced reading.)

OpenAI Academy

OpenAI Academy. (n.d.). *AI Fundamentals*.
OpenAI Academy. (n.d.). *Building with AI*.
OpenAI Academy. (2026). *Codex 101: Introduction and Onboarding*.
OpenAI. (2025). *A Practical Guide to Building Agents*. (Advanced reading.)

Selected Paul Graham essays

Graham, P. (2005). *How to Start a Startup*.
Graham, P. (2012). *How to Get Startup Ideas*.
Graham, P. (2006). *How to Present to Investors*.
Graham, P. (2012). *Startup = Growth*.
Graham, P. (2013). *Do Things that Don't Scale*.
Graham, P. (2006). *The 18 Mistakes That Kill Startups*.

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ANNEX

DEGREE LEVEL LEARNING OBJECTIVES

Learning objectives for the Bachelor of Business Management

Programmes: International Business and Communication, Business Management and Marketing, Finance, Industrial Technology Management, Entrepreneurship and Innovation

Learning goals	Learning objectives
Students will be critical thinkers	BLO1.1. Students will be able to understand core concepts and methods in the business disciplines
	BLO1.2. Students will be able to conduct a contextual analysis to identify a problem associated with their discipline, to generate managerial options and propose viable solutions
Students will be socially responsible in their related discipline	BLO2.1. Students will be knowledgeable about ethics and social responsibility
Students will be technology agile	BLO3.1. Students will demonstrate proficiency in common business software packages
	BLO3.2. Students will be able to make decisions using appropriate IT tools
Students will be effective communicators	BLO4.1. Students will be able to communicate reasonably in different settings according to target audience tasks and situations
	BLO4.2. Students will be able to convey their ideas effectively through an oral presentation
	BLO4.3. Students will be able to convey their ideas effectively in a written paper