

Course syllabus for ERASMUS+ incoming students

Course Title	
Marketing and Management for Engineers	
Academic Teacher	Mikołaj Zgaiński, PhD
E-mail	mikolaj.zgainiski@ansleszno.pl
ECTS credits	5
Number of hours	120
Course code	INT-IPO-ME-26
Course description	
Marketing and management for engineers bridge technical expertise with business strategy, focusing on identifying customer needs, product development, technical sales, and strategic planning. Key skills include applying engineering methodologies to marketing (marketing engineering), B2B marketing, strategic positioning, and leading technical teams. Core Marketing Concepts for Engineers • Marketing Engineering: Using data-driven approaches, models, and simulations to make marketing decisions. • The 4 P's for Engineers: Adapting Product, Price, Place, and Promotion to technical products (e.g., machinery, software, complex services). • B2B & Industrial Marketing: Focusing on value-based selling to technical audiences rather than consumer impulse buying. • Market Segmentation/Targeting: Identifying specific industries or niches where technical expertise provides a competitive advantage	
Learning outcomes - course content	
1. Concept of the company – choosing the business lines, 2. Organizational structure, 3. Mission, vision, strategic goals incl. SMART planning, 4. Stakeholders identification and management, 5. Defining Marketing Mix (Product, Price, Place, and Promotion), 6. Defining product and matching it with customer needs incl BCG matrix,	

7. Product life cycle,
8. Pricing Strategies,
9. Using data-driven approaches, models, and simulations to make marketing decisions,
10. Choosing competitive advantage,
11. STP – segmentation, targeting, positioning.

Knowledge

1. Explain the fundamental concepts of marketing and management in the context of engineering and technology-based organizations.
2. Describe the principles of marketing engineering and the application of data-driven methods, models, and analytical tools to marketing decision-making.
3. Explain the role of the marketing mix (Product, Price, Place, and Promotion) in the commercialization of engineering products and technical services.
4. Describe the characteristics of B2B and industrial marketing, including value-based selling, customer relationship management, and technical sales processes.
5. Explain the principles of market segmentation, targeting, strategic positioning, and competitive advantage in technology-driven markets.

Skills

1. Apply marketing engineering methods and analytical tools to evaluate market opportunities and support business decisions.
2. Analyze customer needs and market requirements for engineering products and propose appropriate value propositions.
3. Develop basic marketing strategies for technical products or services by integrating market segmentation, targeting, positioning, and the marketing mix.
4. Evaluate business opportunities and strategic options using engineering and management perspectives.
5. Communicate technical and commercial information effectively to customers, managers, and multidisciplinary teams.

Competences

1. Demonstrate the ability to integrate engineering knowledge with business and marketing principles when solving organizational and market-related problems.
2. Work effectively in multidisciplinary teams, contributing to strategic planning, product development, and customer-oriented decision-making.
3. Demonstrate responsibility for ethical, customer-focused, and sustainable business practices in engineering organizations.
4. Show initiative in identifying market opportunities and supporting innovation, commercialization, and continuous improvement of engineering products and services.

Student workload (self-study description)

- Taking part in classes (30 hours)
- Reading assigned literature, scientific articles, and case studies related to marketing engineering, strategic management, and B2B marketing. Reviewing lecture materials and preparing for examinations (30 hours),
- Preparing the project: (60 hours)
Analyzing real-world engineering companies and technology markets to identify customer needs, market opportunities, and competitive positioning.
Preparing individual and group assignments, including market analyses, value proposition development, and strategic marketing plans for engineering products or services.
Solving practical case studies involving product development, technical sales, pricing strategies, market segmentation, and strategic positioning.
Preparing presentations that communicate technical and business information effectively to different stakeholder groups.
Participating in teamwork, project planning, and peer discussions to develop collaboration and leadership skills.

Literature

1. Kotler, P., & Keller, K. L. (2022). Marketing Management (16th Global Edition). Pearson. Comprehensive introduction to strategic marketing, customer value creation, market segmentation, positioning, and marketing decision-making.

2. Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Marketing 5.0: Technology for Humanity*. Wiley. Focuses on digital transformation, data-driven marketing, artificial intelligence, and technology-enabled customer engagement.
3. Kotler, P., Kartajaya, H., & Setiawan, I. Wiley. (2017). *Marketing 4.0: Moving from Traditional to Digital*. Explains the integration of traditional and digital marketing approaches, particularly relevant for technology-based industries.
4. Waśkowski, Z. (Ed.). (2022). *Marketing. Academic Handbook*. Poznań University of Economics and Business Press
5. *Marketing – Fundamentals*. OpenStax Poland, 2024