

Course No.: DLMBPDDT01	Course Title: Product Development	Hours Total: 150 h
		Credit Points: 5 ECTS
Course Type: Wahlpflicht Course Availability: Course Duration: Minimum 1 Semester	Admission Requirements: None	
Course Coordinator / Instructor: See current list of tutors in the Learning Management System	References to Other Modules: Please see module description	

Course Description:

This course aims to provide basic work and problem-solving methods for the successful development of products. It introduces the definition of key design tasks and various alternative product development approaches such as flow-based, lean product development, and design thinking. Finally, the students will become familiar with the use of computer-aided design (CAD) tools and how they integrate into modern product development approaches.

On successful completion of this course, students will be able to:

- know the basic definitions and principles of (new) product development.
- understand the key skills in product development.
- discuss, differentiate, and select appropriate product development approaches with respect to a given scenario.
- work with digital product development tools and techniques like CAD, PDM and PLM at a basic level.
- develop own solutions and approaches to academic and practical questions.
- discuss, evaluate, and adapt different digital product development techniques and tools.

Teaching Methods:

The learning materials include printed and online course books, vodcasts, online knowledge tests, podcasts, online tutorials, and case studies. This range of learning materials is offered to students so they can study at a time, place, and pace that best suits their circumstances and individual learning style.

Course Content:

1. Introduction

1. Basic Definitions
2. The Product Development Process
3. Indicators and Metrics
4. Product Development Models

2. The Product Development Process

1. Planning
2. Concept Development
3. Design
4. Testing and Refinement
5. Production and Ramp-up

3. Product Development Approaches

1. Lean Product Development
2. Design Thinking
3. Human-Centered Design
4. User Experience Strategy
5. Open Innovation

4. Digital Tools

1. Computer-Aided Design
2. Computer-Aided Quality
3. Product Data Management
4. Product Lifecycle Management

5. Organizational Perspective

1. Incremental, Platform, and Breakthrough Development
2. Building Teams
3. Political Issues in Organizations
4. Distributed New Product Development

Literature:

- Kahn, K. B. (2004). The PDMA handbook of new product development. Hoboken, NJ: John Wiley & Sons, Inc.
- Levy, J. (2015). UX strategy: How to devise innovative digital products that people want (1st ed.). Sebastopol, CA: O'Reilly Media, Inc.
- Ulrich, K. T., & Eppinger, S. D. (2015), Product design and development (6th ed.). New York, NY: Mc-Graw Hill.
- Olsen, D. (2015). The Lean product playbook: How to innovate with minimum viable products and rapid customer feedback. Hoboken, NJ: Wiley.
- Reinertsen, D. G. (2009). The principles of product development flow: Second generation Lean product development. Redondo Beach, CA: Celeritas.
- Stark, J. (2011). Product lifecycle management: 21st century paradigm for product realisation. London: Springer-Verlag London, Ltd.

Prerequisites to Qualify for Assessment:

- Depending on the course: Completion of online knowledge tests (approx. 15 minutes per unit, pass / not pass)
- Course evaluation

Assessment:

- Exam, 90 min.

Student Workload (in hours): 150

Self-study: 90
Self-testing: 30
Tutorials: 30