

## Module Description IPE EO&BM

Official data		
Course of studies	Field of study	Specialisation
International Program in Engineering	Production Systems Engineering	-

Description of module	Language	No. of module	Version	Responsible person of module
Engineering Operations & Business Management	English	T3IPE0002	0002	Dr. Kallis Marina Hettrich Dmitri Vnukov
Engineering Operations & Business Management				

Placement of modules on studies			
Semester	Precondition for participation	Type of module	Duration of module
1.	- no formal -	Local Profile Module	1 Semester

Used learning and examination methods			
Teaching and learning methods	Examination performance	Graded yes/no	Duration of examination
Methods: Lecture, Case Study, Seminar	<ul style="list-style-type: none"> <li>▪ Exam (written) and/or</li> <li>▪ Rated Seminar</li> </ul>	<ul style="list-style-type: none"> <li>▪ yes</li> </ul>	<ul style="list-style-type: none"> <li>▪ 120 min</li> </ul>

Workload and ECTS			
Workload (per h, a multiple of 30)	In total: (divided in)	150 h	ECTS: 5
	1. Attendance time (lecture and examination time)	60 h	-
	2. self-study	90h	-

Intention of qualifications and competences	
Professional qualifications:	<ul style="list-style-type: none"> <li>- Define, plan, execute and control projects with a technical background</li> <li>- Identify, analyze, model, control and redesign processes</li> <li>- Understand quality to be a key factor in business success</li> <li>- Learn about key concepts, methods, processes, technologies, and systems in project management, process management, and quality management</li> <li>- Understand the importance of project-related and process-related data, and how to use this data for engineering management</li> <li>- Learn about basics of business management in international context</li> <li>- Case studies give an idea of key success factors and common pitfalls</li> </ul>
Social and ethical competence:	<ul style="list-style-type: none"> <li>- Understand how to solve problems in engineering management and with integrated projects within an interdisciplinary team of experts by applying a process-oriented view.</li> </ul>
Personal competence:	<ul style="list-style-type: none"> <li>- Improve problem solving skills by understanding systematic and process-oriented approaches as well as by applying engineering competencies.</li> </ul>
Comprehensive professional competence:	<ul style="list-style-type: none"> <li>- Apply and combine knowledge in engineering, computer sciences, math, and economics in order to solve problems and to support decisions</li> </ul>

Feature
Prerequisites: <ul style="list-style-type: none"> <li>- Have an basic understanding of business processes and organization (or some years of working experience)</li> <li>- Principles of math, statistics, computer science</li> </ul>

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<b>Learning units and contents</b>			
<b>Teaching and learning units</b>		<i>Attendance time (h)</i>	<i>self-study(h)</i>
<b>(teaching and learning unit 1):</b>	<b>Monitoring of industrial processes</b>	<b>25</b>	<b>40</b>
<b>English Term:</b>	<b>Monitoring of industrial processes</b>		
<b>Content</b> (non-binding guideline)			
<ul style="list-style-type: none"> <li>- Data Analytics Concepts</li> <li>- Creating visual analytics</li> <li>- Data Types, Aggregation Methods</li> <li>- Using Data in a Software (Tableau)</li> <li>- Visualization Process</li> <li>- Using Calculations to Enhance Data</li> <li>- Creating an Ad Hoc Analytical Environment</li> <li>- Using Dashboards to Create Insights</li> </ul>			
<b>Literature</b>			
<ul style="list-style-type: none"> <li>- Murray: Tableau Your Data! Fast and Easy Visual Analysis with Tableau Software</li> <li>- Tufte: The Visual Display of Quantitative Information</li> <li>- Few: Information Dashboard Design: The Effective Visual Communication of Data</li> <li>- Few: Show Me the Numbers: Designing Tables and Graphs to Enlighten.</li> <li>- Knaflic: Storytelling with Data: A Data Visualization Guide for Business Professionals</li> </ul>			
<b>(teaching and learning unit 2):</b>	<b>Project Management</b>	<b>25</b>	<b>40</b>
<b>English Term:</b>	<b>Project Management</b>		
<b>Content</b> (non-binding guideline)			
<ul style="list-style-type: none"> <li>- Goals and challenges in project management</li> <li>- Case study: why projects fail? Problems and solutions</li> <li>- PM: evolution of approaches to getting things done</li> <li>- Key success factors in AGILE and SCRUM</li> <li>- Skills and competencies of a project manager</li> <li>- Leading change principles in PM</li> </ul>			
<b>Literature</b>			
<ul style="list-style-type: none"> <li>- Eliyahu M. Goldratt Critical chain <a href="https://www.amazon.com/Critical-Chain-Eliyahu-M-Goldratt/dp/0884271536">https://www.amazon.com/Critical-Chain-Eliyahu-M-Goldratt/dp/0884271536</a></li> <li>- PMBOK Guide <a href="http://www.pmi.org/">http://www.pmi.org/</a></li> <li>- AGILE manifesto <a href="http://agilemanifesto.org/">http://agilemanifesto.org/</a></li> <li>- SCRUM guides <a href="http://www.scrumguides.org/">http://www.scrumguides.org/</a></li> <li>- Barbee Davis Agile practices for waterfall projects <a href="https://www.amazon.com/Agile-Practices-Waterfall-Projects-Competitive/dp/1604270837">https://www.amazon.com/Agile-Practices-Waterfall-Projects-Competitive/dp/1604270837</a></li> <li>- Tom DeMarco Deadline: A novel about project management <a href="https://www.amazon.com/Deadline-Novel-about-Project-Management/dp/0932633390">https://www.amazon.com/Deadline-Novel-about-Project-Management/dp/0932633390</a></li> <li>- Stephen R. Covey The 7 Habits of Highly Effective People: Restoring the Character Ethic <a href="https://www.amazon.com/Seven-Habits-Highly-Effective-People/dp/0671663984">https://www.amazon.com/Seven-Habits-Highly-Effective-People/dp/0671663984</a></li> <li>- John P. Kotter Leading change <a href="https://www.amazon.com/Leading-Change-New-Preface-Author/dp/1422186431">https://www.amazon.com/Leading-Change-New-Preface-Author/dp/1422186431</a></li> </ul>			
<b>(teaching and learning unit 3):</b>	<b>International Business</b>	<b>10</b>	<b>10</b>
<b>English Term:</b>	<b>International Business</b>		
<b>Content</b> (non-binding guideline)			
As a result of this course, the students should be familiar with:			
<ul style="list-style-type: none"> <li>- National Differences in Socio-Economic Systems, Economic Development and Culture</li> <li>- Principles and Practice of International Marketing</li> <li>- The Global Trade and Investment Environment</li> <li>- The Export and Import order process</li> </ul>			

## **Module Description IPE EO&BM**

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- International Transport
- Custom Controls
- Risk Management
- International Payment
- Global Monetary System
- Global Entrepreneurship

### **Literature**

Sherlock, Reuvid: The Handbook of International Trade, A Guide to the Principles and Practice of Export, 2nd edition, 402 pages, ISBN-13: 978-1846730344

Hill, Charles and Hult, Thomas: International Business: Competing in the Global Marketplace, 12<sup>th</sup> Edition, ISBN-13: 978-1259929441