

## Module Description IPE ASM

Official data				
Course of studies		Field of study		Specialisation
International Program in Engineering		Production Systems Engineering		-
Description of module		Language	No. of module	Version
Automation Systems Engineering		English	T3IPE001	0002
				Responsible person of module
				Dr. Hisham ElMoaqet Dr. Christian Kuhn, Dr. Andreas Schramm Dr. Tamas Ladics
Automation Systems Engineering				
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, Seminar		<ul style="list-style-type: none"><li>Exam (written or attestation/group work) and/or</li><li>Rated Seminar (presentation, poster, documentation)</li></ul>	<ul style="list-style-type: none"><li>yes</li></ul>	<ul style="list-style-type: none"><li>60 min</li></ul>
Workload und ECTS				
Workload (per h, a multiple of 30)	In total: (divided in)		150 h	ECTS: 5
	1.Attendance time (lecture and examination time)		56 h	-
	2.self-learning		94h	-
Intention of qualifications and competences				
Professional qualifications:	<ul style="list-style-type: none"><li>Learn and understand about key concepts, methods, processes, technologies, and systems in Automation Systems &amp; Processes</li><li>Understand the importance of integrating the human into the information flow and the proper use of information technologies</li><li>Identify and discuss new trends and concepts in automating processes and industrial engineering</li><li>Get to know and practice simulation-based approaches in automation engineering</li></ul>			
Social and ethical competence:	<ul style="list-style-type: none"><li>Understand how to solve problems in automation management with a team-based approach and intensive use of appropriate tools and procedures in information &amp; simulation management</li></ul>			
Personal competence:	<ul style="list-style-type: none"><li>Understand and discuss the engineering concepts and be able to transfer the knowledge to projects in the practice of companies</li></ul>			
Comprehensive professional competence:	<ul style="list-style-type: none"><li>Apply and combine knowledge in automation, engineering, computer sciences in order to solve problems and to support decisions</li><li>Be able to discuss comprehensive challenges with field experts</li></ul>			
Feature				

## Module Description IPE ASM

### Prerequisites:

- Basics in computer science/information management
- Principles of math (complex number theory, integral calculus)
- Signals and devices / system's theory
- Electronics/electrical engineering
- Mechanical engineering
- automation & components in automation

### Learning units and contents

Teaching and learning units		Attendance time h	Self- learning h
(teaching and learning unit 1):	Extended Concepts in Automation	24	30
English Term:	Extended Concepts in Automation		
<b>Content</b> (non-binding guideline) <ul style="list-style-type: none"><li>- Basic Concepts/Repetition: Automation Pyramid, Components, Sensors/Actors, Control Engineering, Market Overview</li><li>- Shop Floor Interfaces: Field Bus Systems, OPC, WebServices/SOA</li><li>- Human-Machine-Interfaces: SCADA, Work Instructions</li><li>- Automatic Identification: Barcodes, RFID/NFC, Smart Items</li><li>- Trends: Big Data/Smart Data, Industry 4.0</li></ul> Didactic Concept: Flipped Classroom (seminars by students)			
<b>Literature</b> <ul style="list-style-type: none"><li>- Heimbold, Einführung in die Automatisierungstechnik Automatisierungssysteme, Komponenten, Projektierung und Planung, Hanser 2013</li><li>- Langmann, Taschenbuch der Automatisierung, Hanser 2010</li><li>- Bauernhansl, Thomas, ten Hompel, Michael, Vogel-Heuser, Birgit (Hrsg.) Industrie 4.0 in Produktion, Automatisierung und Logistik (Springer 2014)</li></ul>			

## Module Description IPE ASM

(teaching and learning unit 2):	'Integrated Industry': Seminar and Excursion	8	18
English Term:	'Integrated Industry': Seminar and Excursion		
<b>Content</b> (non-binding guideline) <ul style="list-style-type: none"><li>- Excursion to Hannover Fair (&gt;= 1 day)</li><li>- Introduction to Seminar goals, Self-Guided Tour</li><li>- Reports &amp; Summary</li></ul>			
<b>Literature</b> <ul style="list-style-type: none"><li>- <a href="http://www.hannovermesse.de/en">http://www.hannovermesse.de/en</a></li></ul>			

(teaching and learning unit 3):	Simulative Engineering	25	25
English Term:	Simulative Engineering		
<b>Content</b> (non-binding guideline) <ul style="list-style-type: none"><li>- Software-based Modeling, Simulation and Visualization (of Technical Processes)</li><li>- Discrete Fourier Transform</li><li>- Physical and Mathematical Models, Basics of Simulation Technology (solvers for ordinary differential equations)</li><li>- Practice/Examples with MATLAB/Simulink</li></ul>			
<b>Literature</b> <ul style="list-style-type: none"><li>- Moore: MATLAB for Engineers, Pearson</li><li>- Hayes: Digital Signal Processing, Schaum's Outline series, McGraw-Hill books</li><li>- Hwei: Signals and Systems, Schaum's Outline series, McGraw-Hill books</li><li>- Tyagi: Matlab and Simulink for engineers, Oxford university press</li><li>- Dabney: Mastering Simulink, Pearson Prentice Hall</li><li>- Oppenheim: Discrete-time signal processing, Pearson</li><li>- Vaseghi: Advanced signal processing and digital noise reduction, Teubner</li></ul>			

**Field of study - engineering**
**Module Description IPE EO&BM**

<b>Official data</b>		
Course of studies	Field of study	Specialisation
<b>International Program in Engineering</b>	<b>Production Systems Engineering</b>	-

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				

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

<b>Used learning and examination methods</b>			
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>

<b>Workload and ECTS</b>			
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	-

<b>Intention of qualifications and competences</b>	
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>
<b>Feature</b>	
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>	

## Module Description IPE EO&BM

Learning units and contents			
Teaching and learning units		Attendance time (h)	self-study(h)
(teaching and learning unit 1):	Monitoring of industrial processes	25	40
English Term:	Monitoring of industrial processes		
<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>			

(teaching and learning unit 2):	Project Management	25	40
English Term:	Project Management		
<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>			

(teaching and learning unit 3):	International Business	10	10
English Term:	International Business		
<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**

---

- 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

## Module Description IPE PIM

Official data				
Course of studies		Field of study		Specialisation
International Program in Engineering		-		-
Description of model		Language	No. of model	Version
Production and Information Management		English	T3IPE003	0001
Production and Information Management				
Placement of models on studies				
Semester	Precondition for participation	Type of model		Duration of model
1.	- no formal -	Local Profile Module		1 Semester
Used learning and examination methods				
Teaching and learning methods		Examination performance		Graded yes/no
Methods: Lecture, Seminar/Group Work, Lab Practice		▪ Exam (written) and/or ▪ Rated Seminar/Lab Practice		▪ yes
				▪ 90 min
Workload and ECTS				
Workload (per h, a multiple of 30)		In total: (divided in)		150 h
		1.Attendance time (lecture and examination time)		54 h
		2. self-study		96h
Intention of qualifications and competences				
Professional qualifications:		<ul style="list-style-type: none"><li>- Understanding of the potential and challenges of integration of human, machines, assets and automation components by information technology, especially regarding realization of business processes in companies.</li><li>- Overview over selected Business-IT-Systems, their usage and benefits – including newest trends (Cloud Computing, Big Data und Mobile Computing).</li><li>- Know-How regarding existing and upcoming scenarios in production, service management/maintenance and Quality Management/Energy Management including challenges and limits.</li><li>- Discussion of Key-Performance-Indicator (KPI) models and examples and understanding of the technological and process requirements in current production strategies.</li><li>- Insights in Case-Studies for interdisciplinary scenarios and transfer into the industrial practice – from the IT view, process view and user view.</li></ul>		
Social and ethical competence:		<ul style="list-style-type: none"><li>- The students experience the value of interdisciplinary and team-oriented thinking, hands-on by definition and implementation of competitive business processes in producing companies.</li></ul>		
Personal competence:		<ul style="list-style-type: none"><li>- Students are enabled to define and develop own creative ideas to solve current complex problems in the industry</li></ul>		
Comprehensive professional competence:		<ul style="list-style-type: none"><li>- Find solution approaches for specific challenges in companies and learn the importance of team work and cross-area collaboration to implement and transfer solutions.</li></ul>		
Feature				
Prerequisites:				
<ul style="list-style-type: none"><li>- Basics in computer science/information management and engineering</li><li>- Principle knowledge of processes in production &amp; logistics</li></ul>				

## Module Description IPE PIM

Learning units and contents			
Teaching and learning units		Attendance time (h)	self-study(h)
(teaching and learning unit 1):	Business Information Systems in Production and Logistics	32	50
English Term:	Business Information Systems in Production and Logistics		
<b>Content</b> (non-binding guideline) <ul style="list-style-type: none"><li>- Basic Concepts in Business Information Management and Business Systems Architecture</li><li>- Key areas and processes in companies</li><li>- Overview Production Management</li><li>- Main Examples of Business Systems in Production &amp; Logistics: ERP, MES, WMS, PLM, Business Intelligence/KPI Management</li><li>- SAP ERP Practice (PP, SD, MM)</li></ul>			
<b>Literature</b> <ul style="list-style-type: none"><li>- Schmelzer, H.J., Sesselmann W.: Geschäftsprozessmanagement in der Praxis: Kunden zufrieden stellen, Produktivität steigern, Wert erhöhen, Carl Hanser Verlag</li><li>- Benz, J.: Logistikprozesse mit SAP, Vieweg + Teubner Verlag</li><li>- Kletti, J.: Manufacturing Execution System – MES, Springer-Verlag</li><li>- Schulz, H.-J., Gebhardt, B.: Product Lifecycle Management für die Praxis: Ein Leitfaden zur modularen Einführung, Umsetzung und Anwendung, Springer-Verlag</li><li>- Bracht, U.; Geckler, D.; Wenzel, S.: Digitale Fabrik: Methoden und Praxisbeispiele (VDI-Buch)</li></ul>			

(Lehr- und Lerneinheit 2):	Advanced Concepts in Production Management	8	16
English Term:	Advanced Concepts in Production Management		
<b>Content</b> (non-binding guideline) <ul style="list-style-type: none"><li>- Industry 4.0 and Industrial Internet – Introduction and Trends</li><li>- I40 Application Use Cases (Research Projects &amp; IndustryPractice) Examples: Resilient Production, Tracking &amp; Tracing, Augmented Reality, Predictive Maintenance, Demand-Side Energy Management</li><li>- New Business Models</li><li>- Lean/Six Sigma/Kaizen &amp; Quality managementpractices</li></ul>			
<b>Literature</b> <ul style="list-style-type: none"><li>- Bauernhansl, Thomas, ten Hompel, Michael, Vogel-Heuser, Birgit (Hrsg.) Industrie 4.0 in Produktion, Automatisierung und Logistik (Springer 2014)</li></ul>			

(Lehr- und Lerneinheit 3):	Interdisciplinary Seminar & Lab Practice	14	30
English Term:	Interdisciplinary Seminar & Lab Practice		
<b>Content</b> (non-binding guideline) <ul style="list-style-type: none"><li>- FIM Lab Seminar - Production &amp; IT</li><li>- Vertical and Horizontal Information Integration in Manufacturing &amp; Logistics</li><li>- Practice on ERP, MES, SCADA, Automation</li><li>- Scenarios &amp; Use Cases in different application areas</li></ul>			
<b>Literature</b> <ul style="list-style-type: none"><li>- Own Script (Scenario description) -</li></ul>			



## Module Description IPE ES

Official data				
Course of studies		Course of studies		Course of studies
International Program in Engineering		Production Systems Engineering		-
Description of module		Language	No. of module	Version
Embedded Systems		English	T3IPE004	0001
Embedded Systems				
Placement of modules on studies				
Type of module	Type of module	Type of module	Moduldauer	
1.	- no formal prerequisites -	Local Profile Module	1 Semester	
Used learning and examination methods				
Examination performance	Examination performance	Examination performance	Examination performance	
Methods: Lecture, Lab Practice, seminar	<ul style="list-style-type: none"><li>Exam (written)</li><li>graded Lab Practice</li></ul>	<ul style="list-style-type: none"><li>yes</li></ul>	<ul style="list-style-type: none"><li>60 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)	52 h	-	
	2. self-study	98 h	-	
Intention of qualifications and competences				
Professional qualifications:	<ul style="list-style-type: none"><li>Understanding of the concepts and technologies of Embedded Systems, including new concepts in particular Internet of Things.</li><li>Knowledge of basic technological concepts regarding Embedded Systems, especially combining software technologies and common hardware platforms.</li><li>Practical design and use of embedded systems, including the connection of system peripherals.</li><li>Discussion of benefits and future potential of embedded systems, insights in application cases for interdisciplinary scenarios.</li></ul>			
Social and ethical competence:	<ul style="list-style-type: none"><li>experience in teamwork and self-organized solutions for a given technical problem</li></ul>			
Personal competence:	<ul style="list-style-type: none"><li>proficiency in defining and developing own creative ideas to solve current application cases in embedded systems</li></ul>			
Comprehensive professional competence:	<ul style="list-style-type: none"><li>interdisciplinary collaboration to implement and transfer solutions.</li></ul>			
Feature				
Prerequisites: <ul style="list-style-type: none"><li>Basic knowledge of electronics and computer science</li><li>Some experience in software engineering / at least one programming language (can be mitigated by team approach/self-learning units)</li></ul>				

## Module Description IPE ES

Learning units and contents			
Teaching and learning units		Präsenz h	Selbst- studium h
(teaching and learning unit 1):	Embedded Systems/IoT - Basics	4	8
English Term:	Embedded Systems/IoT - Basics		
<b>Content</b> (non-binding guideline) <ul style="list-style-type: none"><li>- Terms and Buzzwords (Embedded, M2M, IoT, CPS) – Definitions, Components (incl. Sensors and Actors)</li><li>- Internet of Things – History, Examples</li><li>- Cyber-Physical Systems - Trends, Service Enabled Paradigm</li><li>- Basic Communication Patterns</li></ul>			
<b>Literature</b> <ul style="list-style-type: none"><li>- Andelfinger, Internet der Dinge: Technik, Trends und Geschäftsmodelle, Springer</li></ul>			
(teaching and learning unit 2):	Technical Information Management	24	32
English Term:	Technical Information Management		
<b>Content</b> (non-binding guideline) <ul style="list-style-type: none"><li>- Technical Communication &amp; Network Management</li><li>- WebTechnology: Selection of basic technologies (Client/Server), HTML5, CSS, Server Side Javascript (SSJS)</li><li>- IT-Security basic concepts (encryption, authentication)</li><li>- IT Security Risk assessment (quality assurance, incident response, digital forensics)</li><li>- Cloud Computing, Mobile Computing</li></ul>			
<b>Literature</b> <ul style="list-style-type: none"><li>- Craig Hunt, TCP/IP Network Administration, O'Reilly</li><li>- Amazon WebServices, Amazon Elastic Compute Cloud (EC2) User Guide</li><li>- Eric Elliott, Programming JavaScript Applications: Robust Web Architecture with Node, HTML5, and Modern JS Libraries</li></ul>			
(teaching and learning unit 3):	Lab Practice: Embedded Systems Seminar	24	58
English Term:	Lab Practice: Embedded Systems Seminar		
<b>Content</b> (non-binding guideline) <ul style="list-style-type: none"><li>- Architecture: Developing of a solution architecture, Model-Driven Development</li><li>- Software: WebProgramming<ul style="list-style-type: none"><li>Microcontroller programming, integration of external devices/sensors/actors/interface/etc.</li></ul></li><li>- Hardware: Arduino-like experimental board and/or RaspBerryPi</li><li>- Remark: Entry level individually adaptable to prior student knowledge (teamwork of 2-3 students)</li></ul>			
<b>Literature</b> <ul style="list-style-type: none"><li>- <i>Own Script (Task description) – w/ moodle and Internet links for knowledge rampup</i></li></ul>			

## Module Description IPE SRP

Official data				
Course of studies		Field of study		Specialisation
International Program in Engineering		-		-
Description of module		Language	No. of module	Version
Student Research Project		English	T2IPE005	0001
Student Research Project				
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, Student Research Project, Presentation		▪ Rated Student Research Project	▪ yes	(see examination regulations)
Workload und ECTS				
Workload (per h, a multiple of 30)		In total: (divided in)	150 h	ECTS: 5
		1.Attendance time (lecture and examination time)	20 h	-
		2.self-learning	130h	-
Intention of qualifications and competences				
Professional qualifications:		<ul style="list-style-type: none"><li>- Students become acquainted with a complex subject under limited instruction.</li><li>- They increase their general knowledge</li><li>- By resorting to their existing technical knowledge they construct their individual student research project.</li><li>- Students understand and get to know the necessity of academic research and work.</li><li>- They learn to be able to operate and document efficiently the student research project</li></ul>		
Social and ethical competence:				
Personal competence:		<ul style="list-style-type: none"><li>- Practice of self-learning</li><li>- Self-dependent choice and appliance of adequate methods</li><li>- Able to give a critical reflection of the student research project</li></ul>		
Comprehensive professional competence:		<ul style="list-style-type: none"><li>- Students learn to adopt methods of project management for the planning and realization of the student research project to achieve the objective in limited time and with limited resources</li></ul>		
Feature				
Prerequisites: <ul style="list-style-type: none"><li>- Basics in computer science</li><li>- Principles of knowledge in relation to the topic of the student research project</li></ul>				

## Module Description IPE SS

Official data					
Course of studies		Field of study	Specialisation		
International Program in Engineering		-	-		
Description of module		Language	No. of module	Version	Responsible person of module
Social and non-technical skills		English	T2IPE006	0001	Dr. Christian Kuhn
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: Experiential learning methods, tests	<ul style="list-style-type: none"><li>▪ Weekly tests</li><li>▪ “Tell me more”, online test</li></ul>		<ul style="list-style-type: none"><li>▪ yes</li></ul>	60 minutes ( tell me more)	
Workload und ECTS					
Workload (per h, a multiple of 30)	In total: (divided in)		150 h	ECTS: 5	
	1.Attendance time (lecture and examination time)		100 h	-	
	2.self-learning		50h	-	
Intention of qualifications and competences					
Professional qualifications:	<ul style="list-style-type: none"><li>- The module’s aim is to prepare students for living, studying and working in Germany by teaching them German language and the specific knowledge required.</li></ul>				
Social and ethical competence:	<ul style="list-style-type: none"><li>- Know each other’s name, work cooperatively and creatively in teams</li><li>- Mix with students from other countries</li><li>- Build diverse teams to perform team tasks</li><li>- Build team spirit and leadership</li></ul>				
Personal competence:	<ul style="list-style-type: none"><li>- Learn about each other’s country, culture, values, habits, rules etc.</li></ul>				
Comprehensive professional competence:	<ul style="list-style-type: none"><li>- Students learn to understand and adapt to other cultures including their traditions, values etc.</li></ul>				
Feature					
Prerequisites:					
<ul style="list-style-type: none"><li>- Knowledge of German language is helpful, but not necessary</li></ul>					

## Module Description IPE SS

Learning units and contents			
Teaching and learning units		Atten- dence time (h)	Self- study ( h)
(teaching and learning unit 1):	Intensive German language course	50	10
English Term:	Intensive German language course		
Content <ul style="list-style-type: none"><li>- A1: basic grammar, comprehension of everyday language, patterns for basic conversation, writing of short letters, vocabulary of 800 words</li><li>- A2: more complex grammar, listening and reading comprehension of special texts in simplified language, theme-related conversion, writing of free texts, vocabulary of 1200 words</li><li>- B1: substantial grammatical structures, comprehension and written reports of complex texts, ability to participate in complex conversation, independent writing of complex texts</li><li>- B2: oral and written command of all grammatical structures, comprehension and written report of and comment on more abstract texts, participation in complex conversation, dealing with other opinions, presentation of own assessments, composition of sophisticated free texts in adequate linguistic form</li></ul>			
Literature <ul style="list-style-type: none"><li>- A1: Studio D, Cornelsen</li><li>- A2: Studio D, Cornelsen</li><li>- B1: Studio D, Cornelsen</li><li>- B2: Studio D, Cornelsen; EM-Brückenkurs, Huberverlag</li></ul>			

(teaching and learning unit 2):	Additional intercultural lectures	12	20
English Term:	Additional intercultural lectures		
Content <ul style="list-style-type: none"><li>- Offers instruction of German language on an elementary and an advanced level</li><li>- Enhances student’s oral German skills</li><li>- Familiarizes students with German culture and history and informs them about the political and economic structures of Germany</li></ul>			
Literature <ul style="list-style-type: none"><li>- The online learning material is part of the TELL ME MORE language software for German as a foreign language (access via moddle)</li></ul>			

(teaching and learning unit 3):	Social programs, excursions & Trips	46	12
English Term:	Social programs, excursions & Trips		
Content <ul style="list-style-type: none"><li>- Activities to learn about each other individual and build meaningful relationships</li><li>- Activities to build team spirit and leadership</li><li>- Activities to learn about each other country, culture, clichés, values, habits, rules etc.</li><li>- Outdoor team activities</li><li>- Leadership in full-day cross-cultural program</li><li>- Organization of and participation in a major study trip (i.e., Hannover, Wolfsburg etc.) including meetings with business and social leaders</li></ul>			
Literature <ul style="list-style-type: none"><li>-</li></ul>			