

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 | Responsible person of module |
|--------------------------------|----------|---------------|---------|---|
| Automation Systems Engineering | English | T3IPE001 | 0002 | Dr. Hisham ElMoquet 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"> ▪ Exam (written or attestation/group work) and/or ▪ Rated Seminar (presentation, poster, documentation) | <ul style="list-style-type: none"> ▪ yes | <ul style="list-style-type: none"> ▪ 60 min |
| | | | |

| 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"> - Learn and understand about key concepts, methods, processes, technologies, and systems in Automation Systems & Processes - Understand the importance of integrating the human into the information flow and the proper use of information technologies - Identify and discuss new trends and concepts in automating processes and industrial engineering - Get to know and practice simulation-based approaches in automation engineering |
| Social and ethical competence: | <ul style="list-style-type: none"> - Understand how to solve problems in automation management with a team-based approach and intensive use of appropriate tools and procedures in information & simulation management |
| Personal competence: | <ul style="list-style-type: none"> - Understand and discuss the engineering concepts and be able to transfer the knowledge to projects in the practice of companies |
| Comprehensive professional competence: | <ul style="list-style-type: none"> - Apply and combine knowledge in automation, engineering, computer sciences in order to solve problems and to support decisions - Be able to discuss comprehensive challenges with field experts |
| 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 | | |
| Content (non-binding guideline) | | | |
| <ul style="list-style-type: none"> - Basic Concepts/Repetition: Automation Pyramid, Components, Sensors/Actors, Control Engineering, Market Overview - Shop Floor Interfaces: Field Bus Systems, OPC, WebServices/SOA - Human-Machine-Interfaces: SCADA, Work Instructions - Automatic Identification: Barcodes, RFID/NFC, Smart Items - Trends: Big Data/Smart Data, Industry 4.0 | | | |
| Didactic Concept: Flipped Classroom (seminars by students) | | | |
| Literature | | | |
| <ul style="list-style-type: none"> - Heibold, Einführung in die Automatisierungstechnik Automatisierungssysteme, Komponenten, Projektierung und Planung, Hanser 2013 - Langmann, Taschenbuch der Automatisierung, Hanser 2010 - Bauernhansl, Thomas, ten Hompel, Michael, Vogel-Heuser, Birgit (Hrsg.) Industrie 4.0 in Produktion, Automatisierung und Logistik (Springer 2014) | | | |

Module Description IPE ASM

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

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

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"> ▪ Exam (written) and/or ▪ Rated Seminar | <ul style="list-style-type: none"> ▪ yes | <ul style="list-style-type: none"> ▪ 120 min |

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

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

Module Description IPE EO&BM

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

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, 12th 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 | Responsible person of model |
|---------------------------------------|----------|--------------|---------|-----------------------------|
| Production and Information Management | English | T3IPE003 | 0001 | Dr. R. Medina Serrano |
| 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 | Duration of examination |
| Methods: Lecture, Seminar/Group Work, Lab Practice | <ul style="list-style-type: none"> ▪ Exam (written) and/or ▪ Rated Seminar/Lab Practice | <ul style="list-style-type: none"> ▪ yes | <ul style="list-style-type: none"> ▪ 90 min |

| 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) | 54 h | - |
| | 2. self-study | 96h | - |

| Intention of qualifications and competences | |
|---|--|
| Professional qualifications: | <ul style="list-style-type: none"> - 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. - Overview over selected Business-IT-Systems, their usage and benefits – including newest trends (Cloud Computing, Big Data und Mobile Computing). - Know-How regarding existing and upcoming scenarios in production, service management/maintenance and Quality Management/Energy Management including challenges and limits. - Discussion of Key-Performance-Indicator (KPI) models and examples and understanding of the technological and process requirements in current production strategies. - Insights in Case-Studies for interdisciplinary scenarios and transfer into the industrial practice – from the IT view, process view and user view. |
| Social and ethical competence: | <ul style="list-style-type: none"> - The students experience the value of interdisciplinary and team-oriented thinking, hands-on by definition and implementation of competitive business processes in producing companies. |
| Personal competence: | <ul style="list-style-type: none"> - Students are enabled to define and develop own creative ideas to solve current complex problems in the industry |
| Comprehensive professional competence: | <ul style="list-style-type: none"> - Find solution approaches for specific challenges in companies and learn the importance of teamwork and cross-area collaboration to implement and transfer solutions. |

| Feature |
|--|
| Prerequisites: <ul style="list-style-type: none"> - Basics in computer science/information management and engineering - Principle knowledge of processes in production & logistics |

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 | | |
| Content (non-binding guideline) | | | |
| <ul style="list-style-type: none"> - Basic Concepts in Business Information Management and Business Systems Architecture - Key areas and processes in companies - Overview Production Management - Main Examples of Business Systems in Production & Logistics: ERP, MES, WMS, PLM, Business Intelligence/KPI Management - SAP ERP Practice (PP, SD, MM) | | | |
| Literature | | | |
| <ul style="list-style-type: none"> - Schmelzer, H.J., Sesselmann W.: Geschäftsprozessmanagement in der Praxis: Kunden zufrieden stellen, Produktivität steigern, Wert erhöhen, Carl Hanser Verlag - Benz, J.: Logistikprozesse mit SAP, Vieweg + Teubner Verlag - Kletti, J.: Manufacturing Execution System – MES, Springer-Verlag - Schulz, H.-J., Gebhardt, B.: Product Lifecycle Management für die Praxis: Ein Leitfaden zur modularen Einführung, Umsetzung und Anwendung, Springer-Verlag - Bracht, U.; Geckler, D.; Wenzel, S.: Digitale Fabrik: Methoden und Praxisbeispiele (VDI-Buch) | | | |
| (Lehr- und Lerneinheit 2): | Advanced Concepts in Production Management | 8 | 16 |
| English Term: | Advanced Concepts in Production Management | | |
| Content (non-binding guideline) | | | |
| <ul style="list-style-type: none"> - Industry 4.0 and Industrial Internet – Introduction and Trends - I40 Application Use Cases (Research Projects & Industry Practice) Examples: Resilient Production, Tracking & Tracing, Augmented Reality, Predictive Maintenance, Demand-Side Energy Management - New Business Models - Lean/Six Sigma/Kaizen & Quality management practices | | | |
| Literature | | | |
| <ul style="list-style-type: none"> - Bauernhansl, Thomas, ten Hompel, Michael, Vogel-Heuser, Birgit (Hrsg.) Industrie 4.0 in Produktion, Automatisierung und Logistik (Springer 2014) | | | |
| (Lehr- und Lerneinheit 3): | Interdisciplinary Seminar & Lab Practice | 14 | 30 |
| English Term: | Interdisciplinary Seminar & Lab Practice | | |
| Content (non-binding guideline) | | | |
| <ul style="list-style-type: none"> - FIM Lab Seminar - Production & IT - Vertical and Horizontal Information Integration in Manufacturing & Logistics - Practice on ERP, MES, SCADA, Automation - Scenarios & Use Cases in different application areas | | | |
| Literature | | | |
| <ul style="list-style-type: none"> - <i>Own Script (Scenario description)</i> - | | | |

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 | Responsible person of module |
|-----------------------|----------|---------------|---------|------------------------------|
| Embedded Systems | English | T3IPE004 | 0001 | Maurus Bien |
| 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"> ▪ Exam (written) ▪ graded Lab Practice | <ul style="list-style-type: none"> ▪ yes | <ul style="list-style-type: none"> ▪ 60 min |

| 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"> - Understanding of the concepts and technologies of Embedded Systems, including new concepts in particular Internet of Things. - Knowledge of basic technological concepts regarding Embedded Systems, especially combining software technologies and common hardware platforms. - Practical design and use of embedded systems, including the connection of system peripherals. - Discussion of benefits and future potential of embedded systems, insights in application cases for interdisciplinary scenarios. |
| Social and ethical competence: | <ul style="list-style-type: none"> - experience in teamwork and self-organized solutions for a given technical problem |
| Personal competence: | <ul style="list-style-type: none"> - proficiency in defining and developing own creative ideas to solve current application cases in embedded systems |
| Comprehensive professional competence: | <ul style="list-style-type: none"> - interdisciplinary collaboration to implement and transfer solutions. |

| Feature |
|---|
| Prerequisites: <ul style="list-style-type: none"> - Basic knowledge of electronics and computer science - Some experience in software engineering / at least one programming language (can be mitigated by team approach/self-learning units) |

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

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 | Responsible person of module |
|--------------------------|----------|---------------|---------|------------------------------|
| Student Research Project | English | T2IPE005 | 0001 | Dr. Christian Kuhn |
| 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 | <ul style="list-style-type: none"> Rated Student Research Project | <ul style="list-style-type: none"> 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"> Students become acquainted with a complex subject under limited instruction. They increase their general knowledge By resorting to their existing technical knowledge they construct their individual student research project. Students understand and get to know the necessity of academic research and work. They learn to be able to operate and document efficiently the student research project |
| Social and ethical competence: | |
| Personal competence: | <ul style="list-style-type: none"> Practice of self-learning Self-dependent choice and appliance of adequate methods Able to give a critical reflection of the student research project |
| Comprehensive professional competence: | <ul style="list-style-type: none"> 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 |
| Feature | |
| Prerequisites: | |
| <ul style="list-style-type: none"> Basics in computer science Principles of knowledge in relation to the topic of the student research project | |

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"> ▪ Weekly tests ▪ "Tell me more", online test | <ul style="list-style-type: none"> ▪ yes | 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: | - 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. |
| Social and ethical competence: | <ul style="list-style-type: none"> - Know each other's name, work cooperatively and creatively in teams - Mix with students from other countries - Build diverse teams to perform team tasks - Build team spirit and leadership |
| Personal competence: | - Learn about each other's country, culture, values, habits, rules etc. |
| Comprehensive professional competence: | - Students learn to understand and adapt to other cultures including their traditions, values etc. |
| Feature | |
| Prerequisites: | |
| - Knowledge of German language is helpful, but not necessary | |

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"> - A1: basic grammar, comprehension of everyday language, patterns for basic conversation, writing of short letters, vocabulary of 800 words - 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 - B1: substantial grammatical structures, comprehension and written reports of complex texts, ability to participate in complex conversation, independent writing of complex texts - 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 | | | |
| Literature | | | |
| <ul style="list-style-type: none"> - A1: Studio D, Cornelsen - A2: Studio D, Cornelsen - B1: Studio D, Cornelsen - B2: Studio D, Cornelsen; EM-Brückenkurs, Huberverlag | | | |
| (teaching and learning unit 2): | Additional intercultural lectures | 12 | 20 |
| English Term: | Additional intercultural lectures | | |
| Content | | | |
| <ul style="list-style-type: none"> - Offers instruction of German language on an elementary and an advanced level - Enhances student's oral German skills - Familiarizes students with German culture and history and informs them about the political and economic structures of Germany | | | |
| Literature | | | |
| <ul style="list-style-type: none"> - The online learning material is part of the TELL ME MORE language software for German as a foreign language (access via moodle) | | | |
| (teaching and learning unit 3): | Social programs, excursions & Trips | 46 | 12 |
| English Term: | Social programs, excursions & Trips | | |
| Content | | | |
| <ul style="list-style-type: none"> - Activities to learn about each other individual and build meaningful relationships - Activities to build team spirit and leadership - Activities to learn about each other country, culture, clichés, values, habits, rules etc. - Outdoor team activities - Leadership in full-day cross-cultural program - Organization of and participation in a major study trip (i.e., Hannover, Wolfsburg etc.) including meetings with business and social leaders | | | |
| Literature | | | |
| - | | | |